CONSORZIO DI BONIFICA CENTRO

Bacino Saline - Pescara - Alento - Foro

CHIETI

Oggetto:

INTERVENTI PER L'AMMODERNAMENTO DELLE CONDOTTE ADDUTTRICI DELL' IMPIANTO IRRIGUO TAVO - SALINE

- PRIMO LOTTO -

PROGETTO ESECUTIVO

Elaborato:

FASCICOLO ELABORAZIONI NUMERICHE

Numero Elab.

A.26.03

Scala -:-.---

DATA 23 GIU. 2017

REV.	DATA	DESCRIZIONE
	28 GEN. 2021	

CONSORZIO DI BONIFICA CENTRO - BACINO SALINE PESCARA ALENTO E FORO - CHIETI

IL RESPONSABILE DEL PROCEDIMENTO	IL PROGETTISTA	IL COORDINATORE DELLA SICUREZZA
Dott. Massimiliano Giardinelli	Ing. Cesare Garofalo	Geom. Giovanni Cavalli

Visti e/o pareri

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CONSORZIO DI BONIFICA CENTRO

Via Gizio n. 36 - Chieti

Oggetto:

INTERVENTI PER L'AMMODERNAMENTO DELLE CONDOTTE ADDUTTRICI DELL' IMPIANTO IRRIGUO TAVO - SALINE - PRIMO LOTTO -

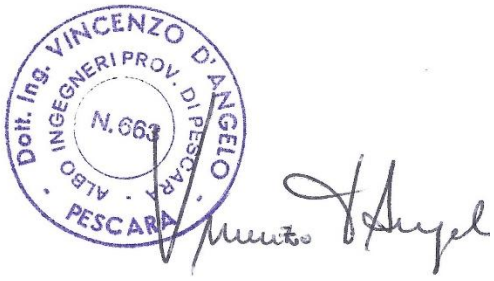
PROGETTO ESECUTIVO

Descrizione elaborato:	Numero elaborato:
FASCICOLO ELABORAZIONI NUMERICHE	R_A1a Data: 20.08.2019

Rev.	Data	Descrizione
r.1	15.12.2019	Inserimento tratto Vasca_12 – Vasca_15
r.2	20.02.2020	Aggiornamento dati di input

Progettisti:

Ing. Vincenzo D'Angelo



RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_0

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata l/s)
1	145.20	0.00000
2	144.60	0.00000
3	143.05	-15.00000
4	140.20	0.00000
5	137.20	0.00000
6	132.40	-30.00000
7	132.30	0.00000
8	132.20	0.00000
9	132.20	0.00000
10	130.95	0.00000
11	129.30	0.00000
12	126.20	0.00000
13	127.20	0.00000
14	123.20	0.00000
15	123.55	0.00000
16	123.50	-30.00000
17	118.20	0.00000
18	109.60	-60.00000
19	109.60	0.00000
20	105.00	0.00000
21	104.90	0.00000
22	102.60	0.00000
23	101.65	0.00000
24	101.15	-105.00000
25	95.10	0.00000
26	91.70	0.00000
27	91.95	0.00000
28	90.75	0.00000
29	89.00	0.00000
30	86.70	0.00000
31	84.40	0.00000
32	86.30	0.00000

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata (l/s)
33	84.70	-45.00000
34	84.05	0.00000
35	83.75	0.00000
36	83.45	0.00000
37	81.40	0.00000
38	74.80	0.00000
39	73.45	0.00000
40	73.45	0.00000
41	72.55	0.00000
42	73.65	-45.00000
43	73.65	0.00000
44	71.25	0.00000
45	69.10	0.00000
46	65.55	0.00000
47	61.45	0.00000
48	63.45	0.00000
49	66.60	0.00000
50	67.10	0.00000
51	66.45	0.00000
52	67.30	0.00000
53	66.55	-100.00000
54	66.95	0.00000
55	63.65	0.00000
56	63.45	0.00000
57	62.85	0.00000
58	62.05	0.00000
59	62.10	-45.00000
60	61.15	-275.00000
61	92.75	0.00000
62	103.65	0.00000
63	125.30	-60.00000
64	125.30	-960.00000

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	35	43.08	0.630	0.00008	10.00
35	36	125.59	0.630	0.00008	10.00
36	37	176.54	0.630	0.00008	10.00
37	38	887.29	0.630	0.00008	10.00
38	39	99.98	0.630	0.00008	10.00
39	40	125.55	0.630	0.00008	10.00
40	41	171.03	0.630	0.00008	10.00
41	42	144.43	0.630	0.00008	10.00
42	43	89.03	0.630	0.00008	10.00
43	44	190.00	0.630	0.00008	10.00
44	45	208.88	0.630	0.00008	10.00
45	46	190.69	0.630	0.00008	10.00
46	47	107.21	0.630	0.00008	10.00
47	48	39.67	0.630	0.00008	10.00
48	49	62.18	0.630	0.00008	10.00
49	50	176.26	0.630	0.00008	10.00
50	51	163.09	0.630	0.00008	10.00
51	52	159.24	0.630	0.00008	10.00
53	54	106.41	0.630	0.00008	10.00
54	55	129.12	0.630	0.00008	10.00
55	56	169.79	0.630	0.00008	10.00
56	57	88.86	0.630	0.00008	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
57	58	55.15	0.630	0.00008	10.00
58	59	47.17	0.630	0.00008	10.00
59	60	92.41	0.630	0.00008	10.00
34	61	293.98	0.920	0.00008	6.00
61	62	517.89	0.920	0.00008	6.00
62	63	214.84	0.920	0.00008	6.00
52	53	142.38	0.630	0.00008	10.00
63	64	55.60	0.920	0.00008	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

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* RISULTATI DI RAMO *

Np	-	Na	REG MOTO	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	plc (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	1769.99997	2.01 M	4.2	0.36
2	-	3	TR	164	1.1	0.080	0.0	1769.99992	2.01	2.4	0.39
3	-	4	TR	406	1.1	0.080	0.0	1755.00002	1.99	2.3	0.95
4	-	5	TR	170	1.1	0.080	0.0	1754.99997	1.99	2.3	0.40
5	-	6	TR	437	1.1	0.080	0.0	1755.00001	1.99	2.3	1.02
6	-	7	TR	56	1.1	0.080	0.0	1724.99997	1.95	2.3	0.13
7	-	8	TR	31	1.1	0.080	0.0	1724.99999	1.95	2.3	0.07
8	-	9	TR	132	1.1	0.080	0.0	1725.00002	1.95	2.3	0.30
9	-	10	TR	258	1.1	0.080	0.0	1725.00004	1.95	2.3	0.58
10	-	11	TR	198	1.1	0.080	0.0	1724.99996	1.95	2.3	0.45
11	-	12	TR	90	1.1	0.080	0.0	1724.99999	1.95	2.3	0.20
12	-	13	TR	85	1.1	0.080	0.0	1724.99995	1.95	2.3	0.19
13	-	14	TR	410	1.1	0.080	0.0	1724.99995	1.95	2.3	0.93
14	-	15	TR	225	1.1	0.080	0.0	1724.99999	1.95	2.3	0.51
15	-	16	TR	202	1.1	0.080	0.0	1725.00000	1.95	2.3	0.46
16	-	17	TR	555	1.1	0.080	0.0	1694.99999	1.92	2.2	1.22
17	-	18	TR	475	1.1	0.080	0.0	1694.99997	1.92	2.2	1.04
18	-	19	TR	47	1.1	0.080	0.0	1635.00001	1.85	2.0	0.10
19	-	20	TR	283	1.1	0.080	0.0	1634.99995	1.85	2.0	0.58
20	-	21	TR	225	1.1	0.080	0.0	1634.99996	1.85	2.0	0.46
21	-	22	TR	100	1.1	0.080	0.0	1635.00001	1.85	2.0	0.20
22	-	23	TR	278	1.1	0.080	0.0	1635.00002	1.85	2.0	0.57
23	-	24	TR	194	1.1	0.080	0.0	1635.00001	1.85	2.0	0.40
24	-	25	TR	433	1.1	0.080	0.0	1529.99996	1.73	1.8	0.78
25	-	26	TR	193	1.1	0.080	0.0	1529.99997	1.73	1.8	0.35
26	-	27	TR	221	1.1	0.080	0.0	1530.00000	1.73	1.8	0.40
27	-	28	TR	200	1.1	0.080	0.0	1530.00002	1.73	1.8	0.36
28	-	29	TR	110	1.1	0.080	0.0	1529.99997	1.73	1.8	0.20
29	-	30	TR	407	1.1	0.080	0.0	1529.99998	1.73	1.8	0.73
30	-	31	TR	35	1.1	0.080	0.0	1530.00004	1.73	1.8	0.06
31	-	32	TR	35	1.1	0.080	0.0	1530.00001	1.73	1.8	0.06
32	-	33	TR	118	1.1	0.080	0.0	1529.99996	1.73	1.8	0.21
33	Q	34		89	1.1	0.080	1.1	1485.00001	1.68	3.4	0.30

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* RISULTATI DI RAMO *

Np	-	Na	REG MOTO	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	plc (E-3)	dH (m)
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49	2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49	3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49	2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49	2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49	2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49	2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49	2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49	2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35	2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35	2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35	2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35	2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35	2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35	2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35	2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35	2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35	2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35	2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03	1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03	1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03	1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03	1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03	1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03	1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88 m	0.9	0.08
34	Q	61		294	0.9	0.080	1.4	1020.00000	1.53	2.3	0.67
61	-	62	TR	518	0.9	0.080	0.0	1019.99998	1.53	1.7	0.87
62	-	63	TR	215	0.9	0.080	0.0	1019.99999	1.53	1.7	0.36
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35	2.1	0.29
63	-	64	TR	56	0.9	0.080	0.0	959.99997	1.44	1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_0

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.04	146.64	0.00	
3	-15.00000	143.05	3.20	146.25	0.00	
4	0.00000	140.20	5.10	145.30	0.00	
5	0.00000	137.20	7.70	144.90	0.00	
6	-30.00000	132.40	11.48	143.88	0.00	
7	0.00000	132.30	11.45	143.75	0.00	
8	0.00000	132.20	11.48	143.68	0.00	
9	0.00000	132.20	11.18	143.38	0.00	
10	0.00000	130.95	11.85	142.80	0.00	
11	0.00000	129.30	13.05	142.35	0.00	
12	0.00000	126.20	15.94	142.14	0.00	
13	0.00000	127.20	14.75	141.95	0.00	
14	0.00000	123.20	17.82	141.02	0.00	
15	0.00000	123.55	16.97	140.52	0.00	
16	-30.00000	123.50	16.56	140.06	0.00	
17	0.00000	118.20	20.64	138.84	0.00	
18	-60.00000	109.60	28.20	137.80	0.00	
19	0.00000	109.60	28.10	137.70	0.00	
20	0.00000	105.00	32.13	137.13	0.00	
21	0.00000	104.90	31.77	136.67	0.00	
22	0.00000	102.60	33.86	136.46	0.00	
23	0.00000	101.65	34.24	135.89	0.00	
24	-105.00000	101.15	34.35	135.50	0.00	
25	0.00000	95.10	39.62	134.72	0.00	
26	0.00000	91.70	42.67	134.37	0.00	
27	0.00000	91.95	42.03	133.98	0.00	
28	0.00000	90.75	42.87	133.62	0.00	
29	0.00000	89.00	44.42	133.42	0.00	
30	0.00000	86.70	45.99	132.69	0.00	
31	0.00000	84.40	48.23	132.63	0.00	
32	0.00000	86.30	46.26	132.56	0.00	
33	-45.00000	84.70	47.65	132.35	0.00	
34	0.00000	84.05	48.00	132.05	0.00	
35	0.00000	83.75	48.19	131.94	0.00	
36	0.00000	83.45	48.10	131.55	0.00	
37	0.00000	81.40	49.70	131.10	0.00	
38	0.00000	74.80	54.08	128.88	0.00	
39	0.00000	73.45	55.18	128.63	0.00	
40	0.00000	73.45	54.87	128.32	0.00	
41	0.00000	72.55	55.34	127.89	0.00	
42	-45.00000	73.65	53.88	127.53	0.00	
43	0.00000	73.65	53.70	127.35	0.00	
44	0.00000	71.25	55.71	126.96	0.00	
45	0.00000	69.10	57.43	126.53	0.00	
46	0.00000	65.55	60.58	126.13	0.00	
47	0.00000	61.45	64.46	125.91	0.00	
48	0.00000	63.45	62.38	125.83	0.00	
49	0.00000	66.60	59.10	125.70	0.00	
50	0.00000	67.10	58.24	125.34	0.00	

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ADD_TAVO SIM_0

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	58.55	125.00	0.00	
52	0.00000	67.30	57.38	124.68	0.00	
53	-100.00000	66.55	57.83	124.38	0.00	
54	0.00000	66.95	57.30	124.25	0.00	
55	0.00000	63.65	60.44	124.09	0.00	
56	0.00000	63.45	60.44	123.89	0.00	
57	0.00000	62.85	60.93	123.78	0.00	
58	0.00000	62.05	61.66	123.71	0.00	
59	-45.00000	62.10	61.55	123.65	0.00	
60	-275.00000	61.15	62.42	123.57	0.00	m
61	0.00000	92.75	38.63	131.38	0.00	
62	0.00000	103.65	26.86	130.51	0.00	
63	-60.00000	125.30	4.85	130.15	0.00	
64	-960.00000	125.30	4.76	130.06	0.00	
33q34	0.00000	84.70	47.50	132.20	0.00	
34q61	0.00000	84.05	47.82	131.87	0.00	
35q36	0.00000	83.75	48.11	131.86	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1770.00

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_0A

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata (l/s)
1	145.20	0.00000
2	144.60	0.00000
3	143.05	-15.00000
4	140.20	0.00000
5	137.20	0.00000
6	132.40	-30.00000
7	132.30	0.00000
8	132.20	0.00000
9	132.20	0.00000
10	130.95	0.00000
11	129.30	0.00000
12	126.20	0.00000
13	127.20	0.00000
14	123.20	0.00000
15	123.55	0.00000
16	123.50	-30.00000
17	118.20	0.00000
18	109.60	-60.00000
19	109.60	0.00000
20	105.00	0.00000
21	104.90	0.00000
22	102.60	0.00000
23	101.65	0.00000
24	101.15	-105.00000
25	95.10	0.00000
26	91.70	0.00000
27	91.95	0.00000
28	90.75	0.00000
29	89.00	0.00000
30	86.70	0.00000
31	84.40	0.00000
32	86.30	0.00000

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata (l/s)
33	84.70	-45.00000
34	84.05	0.00000
35	83.75	0.00000
36	83.45	0.00000
37	81.40	0.00000
38	74.80	0.00000
39	73.45	0.00000
40	73.45	0.00000
41	72.55	0.00000
42	73.65	-45.00000
43	73.65	0.00000
44	71.25	0.00000
45	69.10	0.00000
46	65.55	0.00000
47	61.45	0.00000
48	63.45	0.00000
49	66.60	0.00000
50	67.10	0.00000
51	66.45	0.00000
52	67.30	0.00000
53	66.55	-100.00000
54	66.95	0.00000
55	63.65	0.00000
56	63.45	0.00000
57	62.85	0.00000
58	62.05	0.00000
59	62.10	-45.00000
60	61.15	-275.00000
61	92.75	0.00000
62	103.65	0.00000
63	125.30	-60.00000
64	125.30	-960.00000

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.0002	10.00
2	3	164.07	1.060	0.0002	10.00
3	4	405.92	1.060	0.0002	10.00
4	5	170.13	1.060	0.0002	10.00
5	6	437.03	1.060	0.0002	10.00
6	7	55.65	1.060	0.0002	10.00
7	8	30.91	1.060	0.0002	10.00
8	9	132.24	1.060	0.0002	10.00
9	10	257.54	1.060	0.0002	10.00
10	11	198.34	1.060	0.0002	10.00
11	12	90.43	1.060	0.0002	10.00
12	13	84.54	1.060	0.0002	10.00
13	14	409.70	1.060	0.0002	10.00
14	15	224.61	1.060	0.0002	10.00
15	16	201.97	1.060	0.0002	10.00
16	17	555.36	1.060	0.0002	10.00
17	18	475.37	1.060	0.0002	10.00
18	19	46.87	1.060	0.0002	10.00
19	20	282.54	1.060	0.0002	10.00
20	21	225.00	1.060	0.0002	10.00
21	22	100.18	1.060	0.0002	10.00
22	23	278.08	1.060	0.0002	10.00
23	24	193.51	1.060	0.0002	10.00
24	25	433.46	1.060	0.0002	10.00
25	26	192.87	1.060	0.0002	10.00
26	27	221.13	1.060	0.0002	10.00
27	28	199.79	1.060	0.0002	10.00
28	29	110.19	1.060	0.0002	10.00
29	30	407.00	1.060	0.0002	10.00
30	31	34.81	1.060	0.0002	10.00
31	32	34.82	1.060	0.0002	10.00
32	33	118.46	1.060	0.0002	10.00
33	34	88.50	1.060	0.0002	10.00
34	35	43.08	0.630	0.0002	10.00
35	36	125.59	0.630	0.0002	10.00
36	37	176.54	0.630	0.0002	10.00
37	38	887.29	0.630	0.0002	10.00
38	39	99.98	0.630	0.0002	10.00
39	40	125.55	0.630	0.0002	10.00
40	41	171.03	0.630	0.0002	10.00
41	42	144.43	0.630	0.0002	10.00
42	43	89.03	0.630	0.0002	10.00
43	44	190.00	0.630	0.0002	10.00
44	45	208.88	0.630	0.0002	10.00
45	46	190.69	0.630	0.0002	10.00
46	47	107.21	0.630	0.0002	10.00
47	48	39.67	0.630	0.0002	10.00
48	49	62.18	0.630	0.0002	10.00
49	50	176.26	0.630	0.0002	10.00
50	51	163.09	0.630	0.0002	10.00
51	52	159.24	0.630	0.0002	10.00
53	54	106.41	0.630	0.0002	10.00
54	55	129.12	0.630	0.0002	10.00
55	56	169.79	0.630	0.0002	10.00
56	57	88.86	0.630	0.0002	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
57	58	55.15	0.630	0.0002	10.00
58	59	47.17	0.630	0.0002	10.00
59	60	92.41	0.630	0.0002	10.00
34	61	293.98	0.920	0.0002	6.00
61	62	517.89	0.920	0.0002	6.00
62	63	214.84	0.920	0.0002	6.00
52	53	142.38	0.630	0.0002	10.00
63	64	55.60	0.920	0.0002	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

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* RISULTATI DI RAMO *

Np	-	Na	REG MOTO	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	plc (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	1770.00005	2.01 M	4.6	0.39
2	-	3	TR	164	1.1	0.200	0.0	1769.99998	2.01	2.7	0.45
3	-	4	TR	406	1.1	0.200	0.0	1755.00002	1.99	2.7	1.09
4	-	5	TR	170	1.1	0.200	0.0	1755.00001	1.99	2.7	0.46
5	-	6	TR	437	1.1	0.200	0.0	1755.00003	1.99	2.7	1.17
6	-	7	TR	56	1.1	0.200	0.0	1724.99997	1.95	2.6	0.14
7	-	8	TR	31	1.1	0.200	0.0	1725.00002	1.95	2.6	0.08
8	-	9	TR	132	1.1	0.200	0.0	1724.99998	1.95	2.6	0.34
9	-	10	TR	258	1.1	0.200	0.0	1725.00003	1.95	2.6	0.67
10	-	11	TR	198	1.1	0.200	0.0	1724.99997	1.95	2.6	0.51
11	-	12	TR	90	1.1	0.200	0.0	1724.99999	1.95	2.6	0.23
12	-	13	TR	85	1.1	0.200	0.0	1724.99998	1.95	2.6	0.22
13	-	14	TR	410	1.1	0.200	0.0	1724.99994	1.95	2.6	1.06
14	-	15	TR	225	1.1	0.200	0.0	1725.00000	1.95	2.6	0.58
15	-	16	TR	202	1.1	0.200	0.0	1725.00000	1.95	2.6	0.52
16	-	17	TR	555	1.1	0.200	0.0	1694.99996	1.92	2.5	1.39
17	-	18	TR	475	1.1	0.200	0.0	1695.00001	1.92	2.5	1.19
18	-	19	TR	47	1.1	0.200	0.0	1635.00000	1.85	2.3	0.11
19	-	20	TR	283	1.1	0.200	0.0	1634.99999	1.85	2.3	0.66
20	-	21	TR	225	1.1	0.200	0.0	1635.00004	1.85	2.3	0.52
21	-	22	TR	100	1.1	0.200	0.0	1635.00000	1.85	2.3	0.23
22	-	23	TR	278	1.1	0.200	0.0	1635.00005	1.85	2.3	0.65
23	-	24	TR	194	1.1	0.200	0.0	1634.99996	1.85	2.3	0.45
24	-	25	TR	433	1.1	0.200	0.0	1529.99999	1.73	2.0	0.89
25	-	26	TR	193	1.1	0.200	0.0	1530.00002	1.73	2.0	0.39
26	-	27	TR	221	1.1	0.200	0.0	1530.00000	1.73	2.0	0.45
27	-	28	TR	200	1.1	0.200	0.0	1530.00001	1.73	2.0	0.41
28	-	29	TR	110	1.1	0.200	0.0	1529.99996	1.73	2.0	0.23
29	-	30	TR	407	1.1	0.200	0.0	1530.00003	1.73	2.0	0.83
30	-	31	TR	35	1.1	0.200	0.0	1529.99994	1.73	2.0	0.07
31	-	32	TR	35	1.1	0.200	0.0	1530.00004	1.73	2.0	0.07
32	-	33	TR	118	1.1	0.200	0.0	1530.00002	1.73	2.0	0.24
33	Q	34		89	1.1	0.200	1.1	1484.99999	1.68	3.7	0.32

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* RISULTATI DI RAMO *

Np	-	Na	REG MOTO	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	plc (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49	2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49	3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49	2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49	2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49	2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49	2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49	2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49	2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35	2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35	2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35	2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35	2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35	2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35	2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35	2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35	2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35	2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35	2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03	1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03	1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03	1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03	1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03	1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03	1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88 m	1.0	0.09
34	Q	61		294	0.9	0.200	1.4	1020.00001	1.53	2.5	0.73
61	-	62	TR	518	0.9	0.200	0.0	1019.99996	1.53	1.9	0.99
62	-	63	TR	215	0.9	0.200	0.0	1019.99998	1.53	1.9	0.41
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35	2.3	0.33
63	-	64	TR	56	0.9	0.200	0.0	959.99999	1.44	1.7	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_0A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.01	146.61	0.00	
3	-15.00000	143.05	3.12	146.17	0.00	
4	0.00000	140.20	4.88	145.08	0.00	
5	0.00000	137.20	7.42	144.62	0.00	
6	-30.00000	132.40	11.05	143.45	0.00	
7	0.00000	132.30	11.01	143.31	0.00	
8	0.00000	132.20	11.03	143.23	0.00	
9	0.00000	132.20	10.69	142.89	0.00	
10	0.00000	130.95	11.27	142.22	0.00	
11	0.00000	129.30	12.41	141.71	0.00	
12	0.00000	126.20	15.27	141.47	0.00	
13	0.00000	127.20	14.05	141.25	0.00	
14	0.00000	123.20	16.99	140.19	0.00	
15	0.00000	123.55	16.06	139.61	0.00	
16	-30.00000	123.50	15.59	139.09	0.00	
17	0.00000	118.20	19.50	137.70	0.00	
18	-60.00000	109.60	26.91	136.51	0.00	
19	0.00000	109.60	26.80	136.40	0.00	
20	0.00000	105.00	30.74	135.74	0.00	
21	0.00000	104.90	30.32	135.22	0.00	
22	0.00000	102.60	32.38	134.98	0.00	
23	0.00000	101.65	32.68	134.33	0.00	
24	-105.00000	101.15	32.73	133.88	0.00	
25	0.00000	95.10	37.90	133.00	0.00	
26	0.00000	91.70	40.90	132.60	0.00	
27	0.00000	91.95	40.20	132.15	0.00	
28	0.00000	90.75	40.99	131.74	0.00	
29	0.00000	89.00	42.51	131.51	0.00	
30	0.00000	86.70	43.98	130.68	0.00	
31	0.00000	84.40	46.21	130.61	0.00	
32	0.00000	86.30	44.24	130.54	0.00	
33	-45.00000	84.70	45.59	130.29	0.00	
34	0.00000	84.05	45.92	129.97	0.00	
35	0.00000	83.75	46.10	129.85	0.00	
36	0.00000	83.45	45.96	129.41	0.00	
37	0.00000	81.40	47.50	128.90	0.00	
38	0.00000	74.80	51.57	126.37	0.00	
39	0.00000	73.45	52.63	126.08	0.00	
40	0.00000	73.45	52.27	125.72	0.00	
41	0.00000	72.55	52.68	125.23	0.00	
42	-45.00000	73.65	51.17	124.82	0.00	
43	0.00000	73.65	50.96	124.61	0.00	
44	0.00000	71.25	52.92	124.17	0.00	
45	0.00000	69.10	54.58	123.68	0.00	
46	0.00000	65.55	57.68	123.23	0.00	
47	0.00000	61.45	61.53	122.98	0.00	
48	0.00000	63.45	59.44	122.89	0.00	
49	0.00000	66.60	56.14	122.74	0.00	
50	0.00000	67.10	55.23	122.33	0.00	

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ADD_TAVO SIM_0A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	55.50	121.95	0.00	
52	0.00000	67.30	54.27	121.57	0.00	
53	-100.00000	66.55	54.69	121.24	0.00	
54	0.00000	66.95	54.14	121.09	0.00	
55	0.00000	63.65	57.26	120.91	0.00	
56	0.00000	63.45	57.23	120.68	0.00	
57	0.00000	62.85	57.71	120.56	0.00	
58	0.00000	62.05	58.43	120.48	0.00	
59	-45.00000	62.10	58.32	120.42	0.00	
60	-275.00000	61.15	59.17	120.32	0.00	m
61	0.00000	92.75	36.48	129.23	0.00	
62	0.00000	103.65	24.59	128.24	0.00	
63	-60.00000	125.30	2.53	127.83	0.00	
64	-960.00000	125.30	2.44	127.74	0.00	
33q34	0.00000	84.70	45.44	130.14	0.00	
34q61	0.00000	84.05	45.75	129.80	0.00	
35q36	0.00000	83.75	46.02	129.77	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1770.00005

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_1

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q (l/s)	Legge
1	145.20	0.0000	0.0000	0.0000	0.0000	
2	144.60	0.0000	0.0000	0.0000	0.0000	
3	143.05	0.0000	0.0000	0.0000	-15.0000	Q=0
4	140.20	0.0000	0.0000	0.0000	0.0000	
5	137.20	0.0000	0.0000	0.0000	0.0000	
6	132.40	0.0000	0.0000	0.0000	-30.0000	Q=0
7	132.30	0.0000	0.0000	0.0000	0.0000	
8	132.20	0.0000	0.0000	0.0000	0.0000	
9	132.20	0.0000	0.0000	0.0000	0.0000	
10	130.95	0.0000	0.0000	0.0000	0.0000	
11	129.30	0.0000	0.0000	0.0000	0.0000	
12	126.20	0.0000	0.0000	0.0000	0.0000	
13	127.20	0.0000	0.0000	0.0000	0.0000	
14	123.20	0.0000	0.0000	0.0000	0.0000	
15	123.55	0.0000	0.0000	0.0000	0.0000	
16	123.50	0.0000	0.0000	0.0000	-30.0000	Q=0
17	118.20	0.0000	0.0000	0.0000	0.0000	
18	109.60	0.0000	0.0000	0.0000	-60.0000	Q=0
19	109.60	0.0000	0.0000	0.0000	0.0000	
20	105.00	0.0000	0.0000	0.0000	0.0000	
21	104.90	0.0000	0.0000	0.0000	0.0000	
22	102.60	0.0000	0.0000	0.0000	0.0000	
23	101.65	0.0000	0.0000	0.0000	0.0000	
24	101.15	0.0000	0.0000	0.0000	-105.0000	Q=0
25	95.10	0.0000	0.0000	0.0000	0.0000	
26	91.70	0.0000	0.0000	0.0000	0.0000	
27	91.95	0.0000	0.0000	0.0000	0.0000	
28	90.75	0.0000	0.0000	0.0000	0.0000	
29	89.00	0.0000	0.0000	0.0000	0.0000	
30	86.70	0.0000	0.0000	0.0000	0.0000	
31	84.40	0.0000	0.0000	0.0000	0.0000	
32	86.30	0.0000	0.0000	0.0000	0.0000	
33	84.70	0.0000	0.0000	0.0000	-45.0000	Q=0
34	84.05	0.0000	0.0000	0.0000	0.0000	
35	83.75	0.0000	0.0000	0.0000	0.0000	
36	83.45	0.0000	0.0000	0.0000	0.0000	
37	81.40	0.0000	0.0000	0.0000	0.0000	
38	74.80	0.0000	0.0000	0.0000	0.0000	
39	73.45	0.0000	0.0000	0.0000	0.0000	
40	73.45	0.0000	0.0000	0.0000	0.0000	
41	72.55	0.0000	0.0000	0.0000	0.0000	
42	73.65	0.0000	0.0000	-45.0000	Q=0	0.0000
43	73.65	0.0000	0.0000	0.0000	0.0000	
44	71.25	0.0000	0.0000	0.0000	0.0000	
45	69.10	0.0000	0.0000	0.0000	0.0000	
46	65.55	0.0000	0.0000	0.0000	0.0000	
47	61.45	0.0000	0.0000	0.0000	0.0000	
48	63.45	0.0000	0.0000	0.0000	0.0000	

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DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
49	66.60	0.0000	0.0000	0.0000	0.0000
50	67.10	0.0000	0.0000	0.0000	0.0000
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 Q=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 Q=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 Q=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 Q=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 Q=0	0.0000	0.0000

Legge di variazione delle portate

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	35	43.08	0.630	0.00008	10.00
35	36	125.59	0.630	0.00008	10.00
36	37	176.54	0.630	0.00008	10.00
37	38	887.29	0.630	0.00008	10.00
38	39	99.98	0.630	0.00008	10.00
39	40	125.55	0.630	0.00008	10.00
40	41	171.03	0.630	0.00008	10.00
41	42	144.43	0.630	0.00008	10.00
42	43	89.03	0.630	0.00008	10.00
43	44	190.00	0.630	0.00008	10.00
44	45	208.88	0.630	0.00008	10.00
45	46	190.69	0.630	0.00008	10.00
46	47	107.21	0.630	0.00008	10.00
47	48	39.67	0.630	0.00008	10.00
48	49	62.18	0.630	0.00008	10.00
49	50	176.26	0.630	0.00008	10.00
50	51	163.09	0.630	0.00008	10.00
51	52	159.24	0.630	0.00008	10.00
53	54	106.41	0.630	0.00008	10.00
54	55	129.12	0.630	0.00008	10.00
55	56	169.79	0.630	0.00008	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
56	57	88.86	0.630	0.00008	10.00
57	58	55.15	0.630	0.00008	10.00
58	59	47.17	0.630	0.00008	10.00
59	60	92.41	0.630	0.00008	10.00
34	61	293.98	0.920	0.00008	6.00
61	62	517.89	0.920	0.00008	6.00
62	63	214.84	0.920	0.00008	6.00
52	53	142.38	0.630	0.00008	10.00
63	64	55.60	0.920	0.00008	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	1769.99997	2.01 M	4.2	0.36
2	-	3	TR	164	1.1	0.080	0.0	1769.99992	2.01	2.4	0.39
3	-	4	TR	406	1.1	0.080	0.0	1755.00002	1.99	2.3	0.95
4	-	5	TR	170	1.1	0.080	0.0	1754.99997	1.99	2.3	0.40
5	-	6	TR	437	1.1	0.080	0.0	1755.00001	1.99	2.3	1.02
6	-	7	TR	56	1.1	0.080	0.0	1724.99997	1.95	2.3	0.13
7	-	8	TR	31	1.1	0.080	0.0	1724.99999	1.95	2.3	0.07
8	-	9	TR	132	1.1	0.080	0.0	1725.00002	1.95	2.3	0.30
9	-	10	TR	258	1.1	0.080	0.0	1725.00004	1.95	2.3	0.58
10	-	11	TR	198	1.1	0.080	0.0	1724.99996	1.95	2.3	0.45
11	-	12	TR	90	1.1	0.080	0.0	1724.99999	1.95	2.3	0.20
12	-	13	TR	85	1.1	0.080	0.0	1724.99995	1.95	2.3	0.19
13	-	14	TR	410	1.1	0.080	0.0	1724.99995	1.95	2.3	0.93
14	-	15	TR	225	1.1	0.080	0.0	1724.99999	1.95	2.3	0.51
15	-	16	TR	202	1.1	0.080	0.0	1725.00000	1.95	2.3	0.46
16	-	17	TR	555	1.1	0.080	0.0	1694.99999	1.92	2.2	1.22
17	-	18	TR	475	1.1	0.080	0.0	1694.99997	1.92	2.2	1.04
18	-	19	TR	47	1.1	0.080	0.0	1635.00001	1.85	2.0	0.10
19	-	20	TR	283	1.1	0.080	0.0	1634.99995	1.85	2.0	0.58
20	-	21	TR	225	1.1	0.080	0.0	1634.99996	1.85	2.0	0.46
21	-	22	TR	100	1.1	0.080	0.0	1635.00001	1.85	2.0	0.20
22	-	23	TR	278	1.1	0.080	0.0	1635.00002	1.85	2.0	0.57
23	-	24	TR	194	1.1	0.080	0.0	1635.00001	1.85	2.0	0.40
24	-	25	TR	433	1.1	0.080	0.0	1529.99996	1.73	1.8	0.78
25	-	26	TR	193	1.1	0.080	0.0	1529.99997	1.73	1.8	0.35
26	-	27	TR	221	1.1	0.080	0.0	1530.00000	1.73	1.8	0.40
27	-	28	TR	200	1.1	0.080	0.0	1530.00002	1.73	1.8	0.36
28	-	29	TR	110	1.1	0.080	0.0	1529.99997	1.73	1.8	0.20
29	-	30	TR	407	1.1	0.080	0.0	1529.99998	1.73	1.8	0.73
30	-	31	TR	35	1.1	0.080	0.0	1530.00004	1.73	1.8	0.06
31	-	32	TR	35	1.1	0.080	0.0	1530.00001	1.73	1.8	0.06
32	-	33	TR	118	1.1	0.080	0.0	1529.99996	1.73	1.8	0.21
33	Q	34		89	1.1	0.080	1.1	1485.00001	1.68	3.4	0.30

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ADD_TAVO SIM_1

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49		2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88	m	0.9	0.08
34	Q	61		294	0.9	0.080	1.4	1020.00000	1.53		2.3	0.67
61	-	62	TR	518	0.9	0.080	0.0	1019.99998	1.53		1.7	0.87
62	-	63	TR	215	0.9	0.080	0.0	1019.99999	1.53		1.7	0.36
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29
63	-	64	TR	56	0.9	0.080	0.0	959.99997	1.44		1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.04	146.64	0.00	
3	-15.00000	143.05	3.20	146.25	0.00	
4	0.00000	140.20	5.10	145.30	0.00	
5	0.00000	137.20	7.70	144.90	0.00	
6	-30.00000	132.40	11.48	143.88	0.00	
7	0.00000	132.30	11.45	143.75	0.00	
8	0.00000	132.20	11.48	143.68	0.00	
9	0.00000	132.20	11.18	143.38	0.00	
10	0.00000	130.95	11.85	142.80	0.00	
11	0.00000	129.30	13.05	142.35	0.00	
12	0.00000	126.20	15.94	142.14	0.00	
13	0.00000	127.20	14.75	141.95	0.00	
14	0.00000	123.20	17.82	141.02	0.00	
15	0.00000	123.55	16.97	140.52	0.00	
16	-30.00000	123.50	16.56	140.06	0.00	
17	0.00000	118.20	20.64	138.84	0.00	
18	-60.00000	109.60	28.20	137.80	0.00	
19	0.00000	109.60	28.10	137.70	0.00	
20	0.00000	105.00	32.13	137.13	0.00	
21	0.00000	104.90	31.77	136.67	0.00	
22	0.00000	102.60	33.86	136.46	0.00	
23	0.00000	101.65	34.24	135.89	0.00	
24	-105.00000	101.15	34.35	135.50	0.00	
25	0.00000	95.10	39.62	134.72	0.00	
26	0.00000	91.70	42.67	134.37	0.00	
27	0.00000	91.95	42.03	133.98	0.00	
28	0.00000	90.75	42.87	133.62	0.00	
29	0.00000	89.00	44.42	133.42	0.00	
30	0.00000	86.70	45.99	132.69	0.00	
31	0.00000	84.40	48.23	132.63	0.00	
32	0.00000	86.30	46.26	132.56	0.00	
33	-45.00000	84.70	47.65	132.35	0.00	
34	0.00000	84.05	48.00	132.05	0.00	
35	0.00000	83.75	48.19	131.94	0.00	
36	0.00000	83.45	48.10	131.55	0.00	
37	0.00000	81.40	49.70	131.10	0.00	
38	0.00000	74.80	54.08	128.88	0.00	
39	0.00000	73.45	55.18	128.63	0.00	
40	0.00000	73.45	54.87	128.32	0.00	
41	0.00000	72.55	55.34	127.89	0.00	
42	-45.00000	73.65	53.88	127.53	0.00	
43	0.00000	73.65	53.70	127.35	0.00	
44	0.00000	71.25	55.71	126.96	0.00	
45	0.00000	69.10	57.43	126.53	0.00	
46	0.00000	65.55	60.58	126.13	0.00	
47	0.00000	61.45	64.46	125.91	0.00	
48	0.00000	63.45	62.38	125.83	0.00	
49	0.00000	66.60	59.10	125.70	0.00	
50	0.00000	67.10	58.24	125.34	0.00	

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	58.55	125.00	0.00	
52	0.00000	67.30	57.38	124.68	0.00	
53	-100.00000	66.55	57.83	124.38	0.00	
54	0.00000	66.95	57.30	124.25	0.00	
55	0.00000	63.65	60.44	124.09	0.00	
56	0.00000	63.45	60.44	123.89	0.00	
57	0.00000	62.85	60.93	123.78	0.00	
58	0.00000	62.05	61.66	123.71	0.00	
59	-45.00000	62.10	61.55	123.65	0.00	
60	-275.00000	61.15	62.42	123.57	0.00	m
61	0.00000	92.75	38.63	131.38	0.00	
62	0.00000	103.65	26.86	130.51	0.00	
63	-60.00000	125.30	4.85	130.15	0.00	
64	-960.00000	125.30	4.76	130.06	0.00	
33q34	0.00000	84.70	47.50	132.20	0.00	
34q61	0.00000	84.05	47.82	131.87	0.00	
35q36	0.00000	83.75	48.11	131.86	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1769.99997

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 1 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	1769.99997	2.01 M	4.2	0.36
2	-	3	TR	164	1.1	0.080	0.0	1769.99992	2.01	2.4	0.39
3	-	4	TR	406	1.1	0.080	0.0	1755.00002	1.99	2.3	0.95
4	-	5	TR	170	1.1	0.080	0.0	1754.99997	1.99	2.3	0.40
5	-	6	TR	437	1.1	0.080	0.0	1755.00001	1.99	2.3	1.02
6	-	7	TR	56	1.1	0.080	0.0	1724.99997	1.95	2.3	0.13
7	-	8	TR	31	1.1	0.080	0.0	1724.99999	1.95	2.3	0.07
8	-	9	TR	132	1.1	0.080	0.0	1725.00002	1.95	2.3	0.30
9	-	10	TR	258	1.1	0.080	0.0	1725.00004	1.95	2.3	0.58
10	-	11	TR	198	1.1	0.080	0.0	1724.99996	1.95	2.3	0.45
11	-	12	TR	90	1.1	0.080	0.0	1724.99999	1.95	2.3	0.20
12	-	13	TR	85	1.1	0.080	0.0	1724.99995	1.95	2.3	0.19
13	-	14	TR	410	1.1	0.080	0.0	1724.99995	1.95	2.3	0.93
14	-	15	TR	225	1.1	0.080	0.0	1724.99999	1.95	2.3	0.51
15	-	16	TR	202	1.1	0.080	0.0	1725.00000	1.95	2.3	0.46
16	-	17	TR	555	1.1	0.080	0.0	1694.99999	1.92	2.2	1.22
17	-	18	TR	475	1.1	0.080	0.0	1694.99997	1.92	2.2	1.04
18	-	19	TR	47	1.1	0.080	0.0	1635.00001	1.85	2.0	0.10
19	-	20	TR	283	1.1	0.080	0.0	1634.99995	1.85	2.0	0.58
20	-	21	TR	225	1.1	0.080	0.0	1634.99996	1.85	2.0	0.46
21	-	22	TR	100	1.1	0.080	0.0	1635.00001	1.85	2.0	0.20
22	-	23	TR	278	1.1	0.080	0.0	1635.00002	1.85	2.0	0.57
23	-	24	TR	194	1.1	0.080	0.0	1635.00001	1.85	2.0	0.40
24	-	25	TR	433	1.1	0.080	0.0	1529.99996	1.73	1.8	0.78
25	-	26	TR	193	1.1	0.080	0.0	1529.99997	1.73	1.8	0.35
26	-	27	TR	221	1.1	0.080	0.0	1530.00000	1.73	1.8	0.40
27	-	28	TR	200	1.1	0.080	0.0	1530.00002	1.73	1.8	0.36
28	-	29	TR	110	1.1	0.080	0.0	1529.99997	1.73	1.8	0.20
29	-	30	TR	407	1.1	0.080	0.0	1529.99998	1.73	1.8	0.73
30	-	31	TR	35	1.1	0.080	0.0	1530.00004	1.73	1.8	0.06
31	-	32	TR	35	1.1	0.080	0.0	1530.00001	1.73	1.8	0.06
32	-	33	TR	118	1.1	0.080	0.0	1529.99996	1.73	1.8	0.21
33	Q	34		89	1.1	0.080	1.1	1485.00001	1.68	3.4	0.30

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ADD_TAVO SIM_1

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49		2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88	m	0.9	0.08
34	Q	61		294	0.9	0.080	1.4	1020.00000	1.53		2.3	0.67
61	-	62	TR	518	0.9	0.080	0.0	1019.99998	1.53		1.7	0.87
62	-	63	TR	215	0.9	0.080	0.0	1019.99999	1.53		1.7	0.36
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29
63	-	64	TR	56	0.9	0.080	0.0	959.99997	1.44		1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.04	146.64	0.00	
3	-15.00000	143.05	3.20	146.25	0.00	
4	0.00000	140.20	5.10	145.30	0.00	
5	0.00000	137.20	7.70	144.90	0.00	
6	-30.00000	132.40	11.48	143.88	0.00	
7	0.00000	132.30	11.45	143.75	0.00	
8	0.00000	132.20	11.48	143.68	0.00	
9	0.00000	132.20	11.18	143.38	0.00	
10	0.00000	130.95	11.85	142.80	0.00	
11	0.00000	129.30	13.05	142.35	0.00	
12	0.00000	126.20	15.94	142.14	0.00	
13	0.00000	127.20	14.75	141.95	0.00	
14	0.00000	123.20	17.82	141.02	0.00	
15	0.00000	123.55	16.97	140.52	0.00	
16	-30.00000	123.50	16.56	140.06	0.00	
17	0.00000	118.20	20.64	138.84	0.00	
18	-60.00000	109.60	28.20	137.80	0.00	
19	0.00000	109.60	28.10	137.70	0.00	
20	0.00000	105.00	32.13	137.13	0.00	
21	0.00000	104.90	31.77	136.67	0.00	
22	0.00000	102.60	33.86	136.46	0.00	
23	0.00000	101.65	34.24	135.89	0.00	
24	-105.00000	101.15	34.35	135.50	0.00	
25	0.00000	95.10	39.62	134.72	0.00	
26	0.00000	91.70	42.67	134.37	0.00	
27	0.00000	91.95	42.03	133.98	0.00	
28	0.00000	90.75	42.87	133.62	0.00	
29	0.00000	89.00	44.42	133.42	0.00	
30	0.00000	86.70	45.99	132.69	0.00	
31	0.00000	84.40	48.23	132.63	0.00	
32	0.00000	86.30	46.26	132.56	0.00	
33	-45.00000	84.70	47.65	132.35	0.00	
34	0.00000	84.05	48.00	132.05	0.00	
35	0.00000	83.75	48.19	131.94	0.00	
36	0.00000	83.45	48.10	131.55	0.00	
37	0.00000	81.40	49.70	131.10	0.00	
38	0.00000	74.80	54.08	128.88	0.00	
39	0.00000	73.45	55.18	128.63	0.00	
40	0.00000	73.45	54.87	128.32	0.00	
41	0.00000	72.55	55.34	127.89	0.00	
42	-45.00000	73.65	53.88	127.53	0.00	
43	0.00000	73.65	53.70	127.35	0.00	
44	0.00000	71.25	55.71	126.96	0.00	
45	0.00000	69.10	57.43	126.53	0.00	
46	0.00000	65.55	60.58	126.13	0.00	
47	0.00000	61.45	64.46	125.91	0.00	
48	0.00000	63.45	62.38	125.83	0.00	
49	0.00000	66.60	59.10	125.70	0.00	
50	0.00000	67.10	58.24	125.34	0.00	

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	58.55	125.00	0.00	
52	0.00000	67.30	57.38	124.68	0.00	
53	-100.00000	66.55	57.83	124.38	0.00	
54	0.00000	66.95	57.30	124.25	0.00	
55	0.00000	63.65	60.44	124.09	0.00	
56	0.00000	63.45	60.44	123.89	0.00	
57	0.00000	62.85	60.93	123.78	0.00	
58	0.00000	62.05	61.66	123.71	0.00	
59	-45.00000	62.10	61.55	123.65	0.00	
60	-275.00000	61.15	62.42	123.57	0.00	m
61	0.00000	92.75	38.63	131.38	0.00	
62	0.00000	103.65	26.86	130.51	0.00	
63	-60.00000	125.30	4.85	130.15	0.00	
64	-960.00000	125.30	4.76	130.06	0.00	
33q34	0.00000	84.70	47.50	132.20	0.00	
34q61	0.00000	84.05	47.82	131.87	0.00	
35q36	0.00000	83.75	48.11	131.86	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1769.99997

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 2 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1 - 2	TR	84	1.1	0.080	0.8	884.99999	1.00 M	1.1	0.09
2 - 3	TR	164	1.1	0.080	0.0	884.99997	1.00	0.6	0.10
3 - 4	TR	406	1.1	0.080	0.0	877.50001	0.99	0.6	0.25
4 - 5	TR	170	1.1	0.080	0.0	877.49999	0.99	0.6	0.11
5 - 6	TR	437	1.1	0.080	0.0	877.50000	0.99	0.6	0.27
6 - 7	TR	56	1.1	0.080	0.0	862.49999	0.98	0.6	0.03
7 - 8	TR	31	1.1	0.080	0.0	862.49999	0.98	0.6	0.02
8 - 9	TR	132	1.1	0.080	0.0	862.50001	0.98	0.6	0.08
9 - 10	TR	258	1.1	0.080	0.0	862.50001	0.98	0.6	0.15
10 - 11	TR	198	1.1	0.080	0.0	862.49999	0.98	0.6	0.12
11 - 12	TR	90	1.1	0.080	0.0	862.50000	0.98	0.6	0.05
12 - 13	TR	85	1.1	0.080	0.0	862.49998	0.98	0.6	0.05
13 - 14	TR	410	1.1	0.080	0.0	862.49998	0.98	0.6	0.25
14 - 15	TR	225	1.1	0.080	0.0	862.50000	0.98	0.6	0.13
15 - 16	TR	202	1.1	0.080	0.0	862.50000	0.98	0.6	0.12
16 - 17	TR	555	1.1	0.080	0.0	847.50000	0.96	0.6	0.32
17 - 18	TR	475	1.1	0.080	0.0	847.49999	0.96	0.6	0.28
18 - 19	TR	47	1.1	0.080	0.0	817.50000	0.93	0.5	0.03
19 - 20	TR	283	1.1	0.080	0.0	817.49998	0.93	0.5	0.15
20 - 21	TR	225	1.1	0.080	0.0	817.49999	0.93	0.5	0.12
21 - 22	TR	100	1.1	0.080	0.0	817.50000	0.93	0.5	0.05
22 - 23	TR	278	1.1	0.080	0.0	817.50000	0.93	0.5	0.15
23 - 24	TR	194	1.1	0.080	0.0	817.50000	0.93	0.5	0.10
24 - 25	TR	433	1.1	0.080	0.0	764.99999	0.87	0.5	0.21
25 - 26	TR	193	1.1	0.080	0.0	764.99999	0.87	0.5	0.09
26 - 27	TR	221	1.1	0.080	0.0	765.00000	0.87	0.5	0.11
27 - 28	TR	200	1.1	0.080	0.0	765.00001	0.87	0.5	0.10
28 - 29	TR	110	1.1	0.080	0.0	764.99999	0.87	0.5	0.05
29 - 30	TR	407	1.1	0.080	0.0	764.99999	0.87	0.5	0.19
30 - 31	TR	35	1.1	0.080	0.0	765.00001	0.87	0.5	0.02
31 - 32	TR	35	1.1	0.080	0.0	765.00000	0.87	0.5	0.02
32 - 33	TR	118	1.1	0.080	0.0	764.99999	0.87	0.5	0.06
33 - 34		89	1.1	0.080	1.1	742.50000	0.84	0.9	0.08

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ADD_TAVO SIM_1

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
34 - 35	TR	43	0.6	0.080	0.0	232.50001	0.75	0.7	0.03
35 - 36		126	0.6	0.080	0.7	232.50001	0.75	0.8	0.10
36 - 37	TR	177	0.6	0.080	0.0	232.50000	0.75	0.7	0.12
37 - 38	TR	887	0.6	0.080	0.0	232.50001	0.75	0.7	0.59
38 - 39	TR	100	0.6	0.080	0.0	232.50001	0.75	0.7	0.07
39 - 40	TR	126	0.6	0.080	0.0	232.50001	0.75	0.7	0.08
40 - 41	TR	171	0.6	0.080	0.0	232.50001	0.75	0.7	0.11
41 - 42	TR	144	0.6	0.080	0.0	232.50001	0.75	0.7	0.10
42 - 43	TR	89	0.6	0.080	0.0	210.00001	0.67	0.6	0.05
43 - 44	TR	190	0.6	0.080	0.0	210.00000	0.67	0.6	0.10
44 - 45	TR	209	0.6	0.080	0.0	210.00000	0.67	0.6	0.12
45 - 46	TR	191	0.6	0.080	0.0	210.00000	0.67	0.6	0.11
46 - 47	TR	107	0.6	0.080	0.0	210.00001	0.67	0.6	0.06
47 - 48	TR	40	0.6	0.080	0.0	210.00001	0.67	0.6	0.02
48 - 49	TR	62	0.6	0.080	0.0	210.00001	0.67	0.6	0.03
49 - 50	TR	176	0.6	0.080	0.0	210.00000	0.67	0.6	0.10
50 - 51	TR	163	0.6	0.080	0.0	210.00000	0.67	0.6	0.09
51 - 52	TR	159	0.6	0.080	0.0	210.00001	0.67	0.6	0.09
53 - 54	TR	106	0.6	0.080	0.0	160.00000	0.51	0.3	0.04
54 - 55	TR	129	0.6	0.080	0.0	160.00000	0.51	0.3	0.04
55 - 56	TR	170	0.6	0.080	0.0	160.00000	0.51	0.3	0.06
56 - 57	TR	89	0.6	0.080	0.0	160.00000	0.51	0.3	0.03
57 - 58	TR	55	0.6	0.080	0.0	160.00000	0.51	0.3	0.02
58 - 59	TR	47	0.6	0.080	0.0	160.00000	0.51	0.3	0.02
59 - 60	TR	92	0.6	0.080	0.0	137.50000	0.44 m	0.2	0.02
34 - 61		294	0.9	0.080	1.4	510.00000	0.77	0.6	0.17
61 - 62	TR	518	0.9	0.080	0.0	509.99999	0.77	0.4	0.23
62 - 63	TR	215	0.9	0.080	0.0	509.99999	0.77	0.4	0.10
52 - 53	TR	142	0.6	0.080	0.0	210.00001	0.67	0.6	0.08
63 - 64	TR	56	0.9	0.080	0.0	479.99999	0.72	0.4	0.02

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.31	146.91	0.00	
3	-7.50000	143.05	3.75	146.80	0.00	
4	0.00000	140.20	6.35	146.55	0.00	
5	0.00000	137.20	9.25	146.45	0.00	
6	-15.00000	132.40	13.78	146.18	0.00	
7	0.00000	132.30	13.84	146.14	0.00	
8	0.00000	132.20	13.93	146.13	0.00	
9	0.00000	132.20	13.85	146.05	0.00	
10	0.00000	130.95	14.94	145.89	0.00	
11	0.00000	129.30	16.47	145.77	0.00	
12	0.00000	126.20	19.52	145.72	0.00	
13	0.00000	127.20	18.47	145.67	0.00	
14	0.00000	123.20	22.22	145.42	0.00	
15	0.00000	123.55	21.74	145.29	0.00	
16	-15.00000	123.50	21.67	145.17	0.00	
17	0.00000	118.20	26.64	144.84	0.00	
18	-30.00000	109.60	34.97	144.57	0.00	
19	0.00000	109.60	34.94	144.54	0.00	
20	0.00000	105.00	39.39	144.39	0.00	
21	0.00000	104.90	39.37	144.27	0.00	
22	0.00000	102.60	41.61	144.21	0.00	
23	0.00000	101.65	42.41	144.06	0.00	
24	-52.50000	101.15	42.81	143.96	0.00	
25	0.00000	95.10	48.65	143.75	0.00	
26	0.00000	91.70	51.96	143.66	0.00	
27	0.00000	91.95	51.60	143.55	0.00	
28	0.00000	90.75	52.71	143.46	0.00	
29	0.00000	89.00	54.41	143.41	0.00	
30	0.00000	86.70	56.51	143.21	0.00	
31	0.00000	84.40	58.80	143.20	0.00	
32	0.00000	86.30	56.88	143.18	0.00	
33	-22.50000	84.70	58.42	143.12	0.00	
34	0.00000	84.05	58.99	143.04	0.00	
35	0.00000	83.75	59.27	143.02	0.00	
36	0.00000	83.45	59.46	142.91	0.00	
37	0.00000	81.40	61.39	142.79	0.00	
38	0.00000	74.80	67.40	142.20	0.00	
39	0.00000	73.45	68.69	142.14	0.00	
40	0.00000	73.45	68.60	142.05	0.00	
41	0.00000	72.55	69.39	141.94	0.00	
42	-22.50000	73.65	68.19	141.84	0.00	
43	0.00000	73.65	68.14	141.79	0.00	
44	0.00000	71.25	70.44	141.69	0.00	
45	0.00000	69.10	72.47	141.57	0.00	
46	0.00000	65.55	75.92	141.47	0.00	
47	0.00000	61.45	79.96	141.41	0.00	
48	0.00000	63.45	77.94	141.39	0.00	
49	0.00000	66.60	74.75	141.35	0.00	
50	0.00000	67.10	74.15	141.25	0.00	

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	74.71	141.16	0.00	
52	0.00000	67.30	73.78	141.08	0.00	
53	-50.00000	66.55	74.45	141.00	0.00	
54	0.00000	66.95	74.01	140.96	0.00	
55	0.00000	63.65	77.27	140.92	0.00	
56	0.00000	63.45	77.41	140.86	0.00	
57	0.00000	62.85	77.98	140.83	0.00	
58	0.00000	62.05	78.77	140.82	0.00	
59	-22.50000	62.10	78.70	140.80	0.00	
60	-137.50000	61.15	79.63	140.78	0.00	m
61	0.00000	92.75	50.12	142.87	0.00	
62	0.00000	103.65	38.99	142.64	0.00	
63	-30.00000	125.30	17.24	142.54	0.00	
64	-480.00000	125.30	17.22	142.52	0.00	
33q34	0.00000	84.70	58.38	143.08	0.00	
34q61	0.00000	84.05	58.95	143.00	0.00	
35q36	0.00000	83.75	59.25	143.00	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-884.99999

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 3 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1 - 2	L	84	1.1	0.080	0.8	0.00001	0.00		0.0	0.00
2 - 3	L	164	1.1	0.080	0.0	0.00002	0.00	M	0.0	0.00
3 - 4	L	406	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
4 - 5	L	170	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
5 - 6	L	437	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
6 - 7	L	56	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
7 - 8	L	31	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
8 - 9	L	132	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
9 - 10	L	258	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00
10 - 11	L	198	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
11 - 12	L	90	1.1	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
12 - 13	L	85	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
13 - 14	L	410	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
14 - 15	L	225	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
15 - 16	L	202	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
16 - 17	L	555	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
17 - 18	L	475	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
18 - 19	L	47	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
19 - 20	L	283	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
20 - 21	L	225	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
21 - 22	L	100	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
22 - 23	L	278	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
23 - 24	L	194	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
24 - 25	L	433	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
25 - 26	L	193	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
26 - 27	L	221	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
27 - 28	L	200	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
28 - 29	L	110	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
29 - 30	L	407	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
30 - 31	L	35	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00
31 - 32	L	35	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
32 - 33	L	118	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
33 - 34		89	1.1	0.080	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_1

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
34 - 35	L	43	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
35 - 36		126	0.6	0.080	-54167.9	0.00000	0.00	-0.0	-0.00
36 - 37	L	177	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
37 - 38	L	887	0.6	0.080	0.0	-0.00001	-0.00	-0.0	-0.00
38 - 39	L	100	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
39 - 40	L	126	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
40 - 41	L	171	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
41 - 42	L	144	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
42 - 43	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
43 - 44	L	190	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
44 - 45	L	209	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
45 - 46	L	191	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
46 - 47	L	107	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
47 - 48	L	40	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
48 - 49	L	62	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
49 - 50	L	176	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
50 - 51	L	163	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
51 - 52	L	159	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
53 - 54	L	106	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
54 - 55	L	129	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
55 - 56	L	170	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
56 - 57	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
57 - 58	L	55	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
58 - 59	L	47	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
59 - 60	L	92	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
34 - 61		294	0.9	0.080	0.0	0.00000	0.00	0.0	0.00
61 - 62	L	518	0.9	0.080	0.0	0.00000	0.00	0.0	0.00
62 - 63	L	215	0.9	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
52 - 53	L	142	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
63 - 64	L	56	0.9	0.080	0.0	0.00001	0.00	0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*m
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	^
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	
60	0.00000	61.15	85.85	147.00	0.00	M
61	0.00000	92.75	54.25	147.00	0.00	
62	0.00000	103.65	43.35	147.00	0.00	
63	0.00000	125.30	21.70	147.00	0.00	
64	0.00000	125.30	21.70	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
34q61	0.00000	84.05	62.95	147.00	0.00	^
35q36	0.00000	83.75	63.25	147.00	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-0.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_1A

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q (l/s)	Legge
1	145.20	0.0000	0.0000	0.0000	0.0000	
2	144.60	0.0000	0.0000	0.0000	0.0000	
3	143.05	0.0000	0.0000	0.0000	-15.0000	Q=0
4	140.20	0.0000	0.0000	0.0000	0.0000	
5	137.20	0.0000	0.0000	0.0000	0.0000	
6	132.40	0.0000	0.0000	0.0000	-30.0000	Q=0
7	132.30	0.0000	0.0000	0.0000	0.0000	
8	132.20	0.0000	0.0000	0.0000	0.0000	
9	132.20	0.0000	0.0000	0.0000	0.0000	
10	130.95	0.0000	0.0000	0.0000	0.0000	
11	129.30	0.0000	0.0000	0.0000	0.0000	
12	126.20	0.0000	0.0000	0.0000	0.0000	
13	127.20	0.0000	0.0000	0.0000	0.0000	
14	123.20	0.0000	0.0000	0.0000	0.0000	
15	123.55	0.0000	0.0000	0.0000	0.0000	
16	123.50	0.0000	0.0000	0.0000	-30.0000	Q=0
17	118.20	0.0000	0.0000	0.0000	0.0000	
18	109.60	0.0000	0.0000	0.0000	-60.0000	Q=0
19	109.60	0.0000	0.0000	0.0000	0.0000	
20	105.00	0.0000	0.0000	0.0000	0.0000	
21	104.90	0.0000	0.0000	0.0000	0.0000	
22	102.60	0.0000	0.0000	0.0000	0.0000	
23	101.65	0.0000	0.0000	0.0000	0.0000	
24	101.15	0.0000	0.0000	0.0000	-105.0000	Q=0
25	95.10	0.0000	0.0000	0.0000	0.0000	
26	91.70	0.0000	0.0000	0.0000	0.0000	
27	91.95	0.0000	0.0000	0.0000	0.0000	
28	90.75	0.0000	0.0000	0.0000	0.0000	
29	89.00	0.0000	0.0000	0.0000	0.0000	
30	86.70	0.0000	0.0000	0.0000	0.0000	
31	84.40	0.0000	0.0000	0.0000	0.0000	
32	86.30	0.0000	0.0000	0.0000	0.0000	
33	84.70	0.0000	0.0000	0.0000	-45.0000	Q=0
34	84.05	0.0000	0.0000	0.0000	0.0000	
35	83.75	0.0000	0.0000	0.0000	0.0000	
36	83.45	0.0000	0.0000	0.0000	0.0000	
37	81.40	0.0000	0.0000	0.0000	0.0000	
38	74.80	0.0000	0.0000	0.0000	0.0000	
39	73.45	0.0000	0.0000	0.0000	0.0000	
40	73.45	0.0000	0.0000	0.0000	0.0000	
41	72.55	0.0000	0.0000	0.0000	0.0000	
42	73.65	0.0000	0.0000	-45.0000	Q=0	0.0000
43	73.65	0.0000	0.0000	0.0000	0.0000	
44	71.25	0.0000	0.0000	0.0000	0.0000	
45	69.10	0.0000	0.0000	0.0000	0.0000	
46	65.55	0.0000	0.0000	0.0000	0.0000	
47	61.45	0.0000	0.0000	0.0000	0.0000	

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DESCRIZIONE DEI NODI

Nodo	Quota	Q civ. Legge	Q ind. Legge	Q art. Legge	Altre Q Legge
	(m)	(l/s)	(l/s)	(l/s)	(l/s)
41	72.55	0.0000	0.0000	0.0000	0.0000
42	73.65	0.0000	0.0000	-45.0000 Q=0	0.0000
43	73.65	0.0000	0.0000	0.0000	0.0000
44	71.25	0.0000	0.0000	0.0000	0.0000
45	69.10	0.0000	0.0000	0.0000	0.0000
46	65.55	0.0000	0.0000	0.0000	0.0000
47	61.45	0.0000	0.0000	0.0000	0.0000
48	63.45	0.0000	0.0000	0.0000	0.0000
49	66.60	0.0000	0.0000	0.0000	0.0000
50	67.10	0.0000	0.0000	0.0000	0.0000
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 Q=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 Q=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 Q=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 Q=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 Q=0	0.0000	0.0000

Legge di variazione delle portate

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.0002	10.00
2	3	164.07	1.060	0.0002	10.00
3	4	405.92	1.060	0.0002	10.00
4	5	170.13	1.060	0.0002	10.00
5	6	437.03	1.060	0.0002	10.00
6	7	55.65	1.060	0.0002	10.00
7	8	30.91	1.060	0.0002	10.00
8	9	132.24	1.060	0.0002	10.00
9	10	257.54	1.060	0.0002	10.00
10	11	198.34	1.060	0.0002	10.00
11	12	90.43	1.060	0.0002	10.00
12	13	84.54	1.060	0.0002	10.00
13	14	409.70	1.060	0.0002	10.00
14	15	224.61	1.060	0.0002	10.00
15	16	201.97	1.060	0.0002	10.00
16	17	555.36	1.060	0.0002	10.00
17	18	475.37	1.060	0.0002	10.00
18	19	46.87	1.060	0.0002	10.00
19	20	282.54	1.060	0.0002	10.00
20	21	225.00	1.060	0.0002	10.00
21	22	100.18	1.060	0.0002	10.00
22	23	278.08	1.060	0.0002	10.00
23	24	193.51	1.060	0.0002	10.00
24	25	433.46	1.060	0.0002	10.00
25	26	192.87	1.060	0.0002	10.00
26	27	221.13	1.060	0.0002	10.00
27	28	199.79	1.060	0.0002	10.00
28	29	110.19	1.060	0.0002	10.00
29	30	407.00	1.060	0.0002	10.00
30	31	34.81	1.060	0.0002	10.00
31	32	34.82	1.060	0.0002	10.00
32	33	118.46	1.060	0.0002	10.00
33	34	88.50	1.060	0.0002	10.00
34	35	43.08	0.630	0.0002	10.00
35	36	125.59	0.630	0.0002	10.00
36	37	176.54	0.630	0.0002	10.00
37	38	887.29	0.630	0.0002	10.00
38	39	99.98	0.630	0.0002	10.00
39	40	125.55	0.630	0.0002	10.00
40	41	171.03	0.630	0.0002	10.00
41	42	144.43	0.630	0.0002	10.00
42	43	89.03	0.630	0.0002	10.00
43	44	190.00	0.630	0.0002	10.00
44	45	208.88	0.630	0.0002	10.00
45	46	190.69	0.630	0.0002	10.00
46	47	107.21	0.630	0.0002	10.00
47	48	39.67	0.630	0.0002	10.00
48	49	62.18	0.630	0.0002	10.00
49	50	176.26	0.630	0.0002	10.00
50	51	163.09	0.630	0.0002	10.00
51	52	159.24	0.630	0.0002	10.00
53	54	106.41	0.630	0.0002	10.00
54	55	129.12	0.630	0.0002	10.00
55	56	169.79	0.630	0.0002	10.00
56	57	88.86	0.630	0.0002	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
57	58	55.15	0.630	0.0002	10.00
58	59	47.17	0.630	0.0002	10.00
59	60	92.41	0.630	0.0002	10.00
34	61	293.98	0.920	0.0002	6.00
61	62	517.89	0.920	0.0002	6.00
62	63	214.84	0.920	0.0002	6.00
52	53	142.38	0.630	0.0002	10.00
63	64	55.60	0.920	0.0002	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	1770.00005	2.01 M	4.6	0.39
2	-	3	TR	164	1.1	0.200	0.0	1769.99998	2.01	2.7	0.45
3	-	4	TR	406	1.1	0.200	0.0	1755.00002	1.99	2.7	1.09
4	-	5	TR	170	1.1	0.200	0.0	1755.00001	1.99	2.7	0.46
5	-	6	TR	437	1.1	0.200	0.0	1755.00003	1.99	2.7	1.17
6	-	7	TR	56	1.1	0.200	0.0	1724.99997	1.95	2.6	0.14
7	-	8	TR	31	1.1	0.200	0.0	1725.00002	1.95	2.6	0.08
8	-	9	TR	132	1.1	0.200	0.0	1724.99998	1.95	2.6	0.34
9	-	10	TR	258	1.1	0.200	0.0	1725.00003	1.95	2.6	0.67
10	-	11	TR	198	1.1	0.200	0.0	1724.99997	1.95	2.6	0.51
11	-	12	TR	90	1.1	0.200	0.0	1724.99999	1.95	2.6	0.23
12	-	13	TR	85	1.1	0.200	0.0	1724.99998	1.95	2.6	0.22
13	-	14	TR	410	1.1	0.200	0.0	1724.99994	1.95	2.6	1.06
14	-	15	TR	225	1.1	0.200	0.0	1725.00000	1.95	2.6	0.58
15	-	16	TR	202	1.1	0.200	0.0	1725.00000	1.95	2.6	0.52
16	-	17	TR	555	1.1	0.200	0.0	1694.99996	1.92	2.5	1.39
17	-	18	TR	475	1.1	0.200	0.0	1695.00001	1.92	2.5	1.19
18	-	19	TR	47	1.1	0.200	0.0	1635.00000	1.85	2.3	0.11
19	-	20	TR	283	1.1	0.200	0.0	1634.99999	1.85	2.3	0.66
20	-	21	TR	225	1.1	0.200	0.0	1635.00004	1.85	2.3	0.52
21	-	22	TR	100	1.1	0.200	0.0	1635.00000	1.85	2.3	0.23
22	-	23	TR	278	1.1	0.200	0.0	1635.00005	1.85	2.3	0.65
23	-	24	TR	194	1.1	0.200	0.0	1634.99996	1.85	2.3	0.45
24	-	25	TR	433	1.1	0.200	0.0	1529.99999	1.73	2.0	0.89
25	-	26	TR	193	1.1	0.200	0.0	1530.00002	1.73	2.0	0.39
26	-	27	TR	221	1.1	0.200	0.0	1530.00000	1.73	2.0	0.45
27	-	28	TR	200	1.1	0.200	0.0	1530.00001	1.73	2.0	0.41
28	-	29	TR	110	1.1	0.200	0.0	1529.99996	1.73	2.0	0.23
29	-	30	TR	407	1.1	0.200	0.0	1530.00003	1.73	2.0	0.83
30	-	31	TR	35	1.1	0.200	0.0	1529.99994	1.73	2.0	0.07
31	-	32	TR	35	1.1	0.200	0.0	1530.00004	1.73	2.0	0.07
32	-	33	TR	118	1.1	0.200	0.0	1530.00002	1.73	2.0	0.24
33	Q	34		89	1.1	0.200	1.1	1484.99999	1.68	3.7	0.32

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ADD_TAVO SIM_1A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49		2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88	m	1.0	0.09
34	Q	61		294	0.9	0.200	1.4	1020.00001	1.53		2.5	0.73
61	-	62	TR	518	0.9	0.200	0.0	1019.99996	1.53		1.9	0.99
62	-	63	TR	215	0.9	0.200	0.0	1019.99998	1.53		1.9	0.41
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33
63	-	64	TR	56	0.9	0.200	0.0	959.99999	1.44		1.7	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.01	146.61	0.00	
3	-15.00000	143.05	3.12	146.17	0.00	
4	0.00000	140.20	4.88	145.08	0.00	
5	0.00000	137.20	7.42	144.62	0.00	
6	-30.00000	132.40	11.05	143.45	0.00	
7	0.00000	132.30	11.01	143.31	0.00	
8	0.00000	132.20	11.03	143.23	0.00	
9	0.00000	132.20	10.69	142.89	0.00	
10	0.00000	130.95	11.27	142.22	0.00	
11	0.00000	129.30	12.41	141.71	0.00	
12	0.00000	126.20	15.27	141.47	0.00	
13	0.00000	127.20	14.05	141.25	0.00	
14	0.00000	123.20	16.99	140.19	0.00	
15	0.00000	123.55	16.06	139.61	0.00	
16	-30.00000	123.50	15.59	139.09	0.00	
17	0.00000	118.20	19.50	137.70	0.00	
18	-60.00000	109.60	26.91	136.51	0.00	
19	0.00000	109.60	26.80	136.40	0.00	
20	0.00000	105.00	30.74	135.74	0.00	
21	0.00000	104.90	30.32	135.22	0.00	
22	0.00000	102.60	32.38	134.98	0.00	
23	0.00000	101.65	32.68	134.33	0.00	
24	-105.00000	101.15	32.73	133.88	0.00	
25	0.00000	95.10	37.90	133.00	0.00	
26	0.00000	91.70	40.90	132.60	0.00	
27	0.00000	91.95	40.20	132.15	0.00	
28	0.00000	90.75	40.99	131.74	0.00	
29	0.00000	89.00	42.51	131.51	0.00	
30	0.00000	86.70	43.98	130.68	0.00	
31	0.00000	84.40	46.21	130.61	0.00	
32	0.00000	86.30	44.24	130.54	0.00	
33	-45.00000	84.70	45.59	130.29	0.00	
34	0.00000	84.05	45.92	129.97	0.00	
35	0.00000	83.75	46.10	129.85	0.00	
36	0.00000	83.45	45.96	129.41	0.00	
37	0.00000	81.40	47.50	128.90	0.00	
38	0.00000	74.80	51.57	126.37	0.00	
39	0.00000	73.45	52.63	126.08	0.00	
40	0.00000	73.45	52.27	125.72	0.00	
41	0.00000	72.55	52.68	125.23	0.00	
42	-45.00000	73.65	51.17	124.82	0.00	
43	0.00000	73.65	50.96	124.61	0.00	
44	0.00000	71.25	52.92	124.17	0.00	
45	0.00000	69.10	54.58	123.68	0.00	
46	0.00000	65.55	57.68	123.23	0.00	
47	0.00000	61.45	61.53	122.98	0.00	
48	0.00000	63.45	59.44	122.89	0.00	
49	0.00000	66.60	56.14	122.74	0.00	
50	0.00000	67.10	55.23	122.33	0.00	

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	55.50	121.95	0.00	
52	0.00000	67.30	54.27	121.57	0.00	
53	-100.00000	66.55	54.69	121.24	0.00	
54	0.00000	66.95	54.14	121.09	0.00	
55	0.00000	63.65	57.26	120.91	0.00	
56	0.00000	63.45	57.23	120.68	0.00	
57	0.00000	62.85	57.71	120.56	0.00	
58	0.00000	62.05	58.43	120.48	0.00	
59	-45.00000	62.10	58.32	120.42	0.00	
60	-275.00000	61.15	59.17	120.32	0.00	m
61	0.00000	92.75	36.48	129.23	0.00	
62	0.00000	103.65	24.59	128.24	0.00	
63	-60.00000	125.30	2.53	127.83	0.00	
64	-960.00000	125.30	2.44	127.74	0.00	
33q34	0.00000	84.70	45.44	130.14	0.00	
34q61	0.00000	84.05	45.75	129.80	0.00	
35q36	0.00000	83.75	46.02	129.77	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1770.00005

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 1 h 0 min

* RISULTATI DI RAMO *

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Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	1770.00005	2.01	M	4.6	0.39
2	-	3	TR	164	1.1	0.200	0.0	1769.99998	2.01		2.7	0.45
3	-	4	TR	406	1.1	0.200	0.0	1755.00002	1.99		2.7	1.09
4	-	5	TR	170	1.1	0.200	0.0	1755.00001	1.99		2.7	0.46
5	-	6	TR	437	1.1	0.200	0.0	1755.00003	1.99		2.7	1.17
6	-	7	TR	56	1.1	0.200	0.0	1724.99997	1.95		2.6	0.14
7	-	8	TR	31	1.1	0.200	0.0	1725.00002	1.95		2.6	0.08
8	-	9	TR	132	1.1	0.200	0.0	1724.99998	1.95		2.6	0.34
9	-	10	TR	258	1.1	0.200	0.0	1725.00003	1.95		2.6	0.67
10	-	11	TR	198	1.1	0.200	0.0	1724.99997	1.95		2.6	0.51
11	-	12	TR	90	1.1	0.200	0.0	1724.99999	1.95		2.6	0.23
12	-	13	TR	85	1.1	0.200	0.0	1724.99998	1.95		2.6	0.22
13	-	14	TR	410	1.1	0.200	0.0	1724.99994	1.95		2.6	1.06
14	-	15	TR	225	1.1	0.200	0.0	1725.00000	1.95		2.6	0.58
15	-	16	TR	202	1.1	0.200	0.0	1725.00000	1.95		2.6	0.52
16	-	17	TR	555	1.1	0.200	0.0	1694.99996	1.92		2.5	1.39
17	-	18	TR	475	1.1	0.200	0.0	1695.00001	1.92		2.5	1.19
18	-	19	TR	47	1.1	0.200	0.0	1635.00000	1.85		2.3	0.11
19	-	20	TR	283	1.1	0.200	0.0	1634.99999	1.85		2.3	0.66
20	-	21	TR	225	1.1	0.200	0.0	1635.00004	1.85		2.3	0.52
21	-	22	TR	100	1.1	0.200	0.0	1635.00000	1.85		2.3	0.23
22	-	23	TR	278	1.1	0.200	0.0	1635.00005	1.85		2.3	0.65
23	-	24	TR	194	1.1	0.200	0.0	1634.99996	1.85		2.3	0.45
24	-	25	TR	433	1.1	0.200	0.0	1529.99999	1.73		2.0	0.89
25	-	26	TR	193	1.1	0.200	0.0	1530.00002	1.73		2.0	0.39
26	-	27	TR	221	1.1	0.200	0.0	1530.00000	1.73		2.0	0.45
27	-	28	TR	200	1.1	0.200	0.0	1530.00001	1.73		2.0	0.41
28	-	29	TR	110	1.1	0.200	0.0	1529.99996	1.73		2.0	0.23
29	-	30	TR	407	1.1	0.200	0.0	1530.00003	1.73		2.0	0.83
30	-	31	TR	35	1.1	0.200	0.0	1529.99994	1.73		2.0	0.07
31	-	32	TR	35	1.1	0.200	0.0	1530.00004	1.73		2.0	0.07
32	-	33	TR	118	1.1	0.200	0.0	1530.00002	1.73		2.0	0.24
33	Q	34		89	1.1	0.200	1.1	1484.99999	1.68		3.7	0.32

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ADD_TAVO SIM_1A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49		2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88	m	1.0	0.09
34	Q	61		294	0.9	0.200	1.4	1020.00001	1.53		2.5	0.73
61	-	62	TR	518	0.9	0.200	0.0	1019.99996	1.53		1.9	0.99
62	-	63	TR	215	0.9	0.200	0.0	1019.99998	1.53		1.9	0.41
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33
63	-	64	TR	56	0.9	0.200	0.0	959.99999	1.44		1.7	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.01	146.61	0.00	
3	-15.00000	143.05	3.12	146.17	0.00	
4	0.00000	140.20	4.88	145.08	0.00	
5	0.00000	137.20	7.42	144.62	0.00	
6	-30.00000	132.40	11.05	143.45	0.00	
7	0.00000	132.30	11.01	143.31	0.00	
8	0.00000	132.20	11.03	143.23	0.00	
9	0.00000	132.20	10.69	142.89	0.00	
10	0.00000	130.95	11.27	142.22	0.00	
11	0.00000	129.30	12.41	141.71	0.00	
12	0.00000	126.20	15.27	141.47	0.00	
13	0.00000	127.20	14.05	141.25	0.00	
14	0.00000	123.20	16.99	140.19	0.00	
15	0.00000	123.55	16.06	139.61	0.00	
16	-30.00000	123.50	15.59	139.09	0.00	
17	0.00000	118.20	19.50	137.70	0.00	
18	-60.00000	109.60	26.91	136.51	0.00	
19	0.00000	109.60	26.80	136.40	0.00	
20	0.00000	105.00	30.74	135.74	0.00	
21	0.00000	104.90	30.32	135.22	0.00	
22	0.00000	102.60	32.38	134.98	0.00	
23	0.00000	101.65	32.68	134.33	0.00	
24	-105.00000	101.15	32.73	133.88	0.00	
25	0.00000	95.10	37.90	133.00	0.00	
26	0.00000	91.70	40.90	132.60	0.00	
27	0.00000	91.95	40.20	132.15	0.00	
28	0.00000	90.75	40.99	131.74	0.00	
29	0.00000	89.00	42.51	131.51	0.00	
30	0.00000	86.70	43.98	130.68	0.00	
31	0.00000	84.40	46.21	130.61	0.00	
32	0.00000	86.30	44.24	130.54	0.00	
33	-45.00000	84.70	45.59	130.29	0.00	
34	0.00000	84.05	45.92	129.97	0.00	
35	0.00000	83.75	46.10	129.85	0.00	
36	0.00000	83.45	45.96	129.41	0.00	
37	0.00000	81.40	47.50	128.90	0.00	
38	0.00000	74.80	51.57	126.37	0.00	
39	0.00000	73.45	52.63	126.08	0.00	
40	0.00000	73.45	52.27	125.72	0.00	
41	0.00000	72.55	52.68	125.23	0.00	
42	-45.00000	73.65	51.17	124.82	0.00	
43	0.00000	73.65	50.96	124.61	0.00	
44	0.00000	71.25	52.92	124.17	0.00	
45	0.00000	69.10	54.58	123.68	0.00	
46	0.00000	65.55	57.68	123.23	0.00	
47	0.00000	61.45	61.53	122.98	0.00	
48	0.00000	63.45	59.44	122.89	0.00	
49	0.00000	66.60	56.14	122.74	0.00	
50	0.00000	67.10	55.23	122.33	0.00	

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	55.50	121.95	0.00	
52	0.00000	67.30	54.27	121.57	0.00	
53	-100.00000	66.55	54.69	121.24	0.00	
54	0.00000	66.95	54.14	121.09	0.00	
55	0.00000	63.65	57.26	120.91	0.00	
56	0.00000	63.45	57.23	120.68	0.00	
57	0.00000	62.85	57.71	120.56	0.00	
58	0.00000	62.05	58.43	120.48	0.00	
59	-45.00000	62.10	58.32	120.42	0.00	
60	-275.00000	61.15	59.17	120.32	0.00	m
61	0.00000	92.75	36.48	129.23	0.00	
62	0.00000	103.65	24.59	128.24	0.00	
63	-60.00000	125.30	2.53	127.83	0.00	
64	-960.00000	125.30	2.44	127.74	0.00	
33q34	0.00000	84.70	45.44	130.14	0.00	
34q61	0.00000	84.05	45.75	129.80	0.00	
35q36	0.00000	83.75	46.02	129.77	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1770.00005

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 2 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1 - 2	TR	84	1.1	0.200	0.8	885.00002	1.00 M	1.2	0.10
2 - 3	TR	164	1.1	0.200	0.0	884.99999	1.00	0.7	0.12
3 - 4	TR	406	1.1	0.200	0.0	877.50000	0.99	0.7	0.28
4 - 5	TR	170	1.1	0.200	0.0	877.50000	0.99	0.7	0.12
5 - 6	TR	437	1.1	0.200	0.0	877.50001	0.99	0.7	0.30
6 - 7	TR	56	1.1	0.200	0.0	862.49999	0.98	0.7	0.04
7 - 8	TR	31	1.1	0.200	0.0	862.50001	0.98	0.7	0.02
8 - 9	TR	132	1.1	0.200	0.0	862.49999	0.98	0.7	0.09
9 - 10	TR	258	1.1	0.200	0.0	862.50001	0.98	0.7	0.17
10 - 11	TR	198	1.1	0.200	0.0	862.49999	0.98	0.7	0.13
11 - 12	TR	90	1.1	0.200	0.0	862.50000	0.98	0.7	0.06
12 - 13	TR	85	1.1	0.200	0.0	862.49999	0.98	0.7	0.06
13 - 14	TR	410	1.1	0.200	0.0	862.49998	0.98	0.7	0.27
14 - 15	TR	225	1.1	0.200	0.0	862.50000	0.98	0.7	0.15
15 - 16	TR	202	1.1	0.200	0.0	862.50000	0.98	0.7	0.14
16 - 17	TR	555	1.1	0.200	0.0	847.49999	0.96	0.6	0.36
17 - 18	TR	475	1.1	0.200	0.0	847.50000	0.96	0.6	0.31
18 - 19	TR	47	1.1	0.200	0.0	817.50000	0.93	0.6	0.03
19 - 20	TR	283	1.1	0.200	0.0	817.50000	0.93	0.6	0.17
20 - 21	TR	225	1.1	0.200	0.0	817.50001	0.93	0.6	0.14
21 - 22	TR	100	1.1	0.200	0.0	817.50000	0.93	0.6	0.06
22 - 23	TR	278	1.1	0.200	0.0	817.50001	0.93	0.6	0.17
23 - 24	TR	194	1.1	0.200	0.0	817.49999	0.93	0.6	0.12
24 - 25	TR	433	1.1	0.200	0.0	765.00000	0.87	0.5	0.23
25 - 26	TR	193	1.1	0.200	0.0	765.00001	0.87	0.5	0.10
26 - 27	TR	221	1.1	0.200	0.0	765.00000	0.87	0.5	0.12
27 - 28	TR	200	1.1	0.200	0.0	765.00000	0.87	0.5	0.11
28 - 29	TR	110	1.1	0.200	0.0	764.99999	0.87	0.5	0.06
29 - 30	TR	407	1.1	0.200	0.0	765.00001	0.87	0.5	0.22
30 - 31	TR	35	1.1	0.200	0.0	764.99998	0.87	0.5	0.02
31 - 32	TR	35	1.1	0.200	0.0	765.00001	0.87	0.5	0.02
32 - 33	TR	118	1.1	0.200	0.0	765.00000	0.87	0.5	0.06
33 - 34		89	1.1	0.200	1.1	742.50000	0.84	0.9	0.08

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ADD_TAVO SIM_1A

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
34 - 35	TR	43	0.6	0.200	0.0	232.50000	0.75	0.7	0.03
35 - 36		126	0.6	0.200	0.7	232.50000	0.75	0.9	0.11
36 - 37	TR	177	0.6	0.200	0.0	232.50001	0.75	0.7	0.13
37 - 38	TR	887	0.6	0.200	0.0	232.50000	0.75	0.7	0.66
38 - 39	TR	100	0.6	0.200	0.0	232.50000	0.75	0.7	0.07
39 - 40	TR	126	0.6	0.200	0.0	232.50000	0.75	0.7	0.09
40 - 41	TR	171	0.6	0.200	0.0	232.50001	0.75	0.7	0.13
41 - 42	TR	144	0.6	0.200	0.0	232.50001	0.75	0.7	0.11
42 - 43	TR	89	0.6	0.200	0.0	210.00000	0.67	0.6	0.05
43 - 44	TR	190	0.6	0.200	0.0	210.00001	0.67	0.6	0.12
44 - 45	TR	209	0.6	0.200	0.0	210.00000	0.67	0.6	0.13
45 - 46	TR	191	0.6	0.200	0.0	210.00000	0.67	0.6	0.12
46 - 47	TR	107	0.6	0.200	0.0	210.00001	0.67	0.6	0.07
47 - 48	TR	40	0.6	0.200	0.0	210.00001	0.67	0.6	0.02
48 - 49	TR	62	0.6	0.200	0.0	210.00000	0.67	0.6	0.04
49 - 50	TR	176	0.6	0.200	0.0	210.00000	0.67	0.6	0.11
50 - 51	TR	163	0.6	0.200	0.0	210.00001	0.67	0.6	0.10
51 - 52	TR	159	0.6	0.200	0.0	210.00001	0.67	0.6	0.10
53 - 54	TR	106	0.6	0.200	0.0	160.00000	0.51	0.4	0.04
54 - 55	TR	129	0.6	0.200	0.0	160.00000	0.51	0.4	0.05
55 - 56	TR	170	0.6	0.200	0.0	160.00000	0.51	0.4	0.06
56 - 57	TR	89	0.6	0.200	0.0	160.00000	0.51	0.4	0.03
57 - 58	TR	55	0.6	0.200	0.0	160.00000	0.51	0.4	0.02
58 - 59	TR	47	0.6	0.200	0.0	160.00000	0.51	0.4	0.02
59 - 60	TR	92	0.6	0.200	0.0	137.50000	0.44 m	0.3	0.03
34 - 61		294	0.9	0.200	1.4	510.00000	0.77	0.6	0.19
61 - 62	TR	518	0.9	0.200	0.0	509.99999	0.77	0.5	0.26
62 - 63	TR	215	0.9	0.200	0.0	509.99999	0.77	0.5	0.11
52 - 53	TR	142	0.6	0.200	0.0	210.00000	0.67	0.6	0.09
63 - 64	TR	56	0.9	0.200	0.0	479.99999	0.72	0.4	0.02

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.30	146.90	0.00	
3	-7.50000	143.05	3.74	146.79	0.00	
4	0.00000	140.20	6.31	146.51	0.00	
5	0.00000	137.20	9.19	146.39	0.00	
6	-15.00000	132.40	13.69	146.09	0.00	
7	0.00000	132.30	13.75	146.05	0.00	
8	0.00000	132.20	13.83	146.03	0.00	
9	0.00000	132.20	13.74	145.94	0.00	
10	0.00000	130.95	14.82	145.77	0.00	
11	0.00000	129.30	16.34	145.64	0.00	
12	0.00000	126.20	19.37	145.57	0.00	
13	0.00000	127.20	18.32	145.52	0.00	
14	0.00000	123.20	22.04	145.24	0.00	
15	0.00000	123.55	21.54	145.09	0.00	
16	-15.00000	123.50	21.46	144.96	0.00	
17	0.00000	118.20	26.40	144.60	0.00	
18	-30.00000	109.60	34.69	144.29	0.00	
19	0.00000	109.60	34.67	144.27	0.00	
20	0.00000	105.00	39.09	144.09	0.00	
21	0.00000	104.90	39.06	143.96	0.00	
22	0.00000	102.60	41.30	143.90	0.00	
23	0.00000	101.65	42.08	143.73	0.00	
24	-52.50000	101.15	42.46	143.61	0.00	
25	0.00000	95.10	48.29	143.39	0.00	
26	0.00000	91.70	51.58	143.28	0.00	
27	0.00000	91.95	51.22	143.17	0.00	
28	0.00000	90.75	52.31	143.06	0.00	
29	0.00000	89.00	54.00	143.00	0.00	
30	0.00000	86.70	56.09	142.79	0.00	
31	0.00000	84.40	58.37	142.77	0.00	
32	0.00000	86.30	56.45	142.75	0.00	
33	-22.50000	84.70	57.99	142.69	0.00	
34	0.00000	84.05	58.55	142.60	0.00	
35	0.00000	83.75	58.82	142.57	0.00	
36	0.00000	83.45	59.01	142.46	0.00	
37	0.00000	81.40	60.93	142.33	0.00	
38	0.00000	74.80	66.87	141.67	0.00	
39	0.00000	73.45	68.14	141.59	0.00	
40	0.00000	73.45	68.05	141.50	0.00	
41	0.00000	72.55	68.82	141.37	0.00	
42	-22.50000	73.65	67.62	141.27	0.00	
43	0.00000	73.65	67.56	141.21	0.00	
44	0.00000	71.25	69.85	141.10	0.00	
45	0.00000	69.10	71.87	140.97	0.00	
46	0.00000	65.55	75.30	140.85	0.00	
47	0.00000	61.45	79.34	140.79	0.00	
48	0.00000	63.45	77.31	140.76	0.00	
49	0.00000	66.60	74.13	140.73	0.00	
50	0.00000	67.10	73.52	140.62	0.00	

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	74.07	140.52	0.00	
52	0.00000	67.30	73.12	140.42	0.00	
53	-50.00000	66.55	73.78	140.33	0.00	
54	0.00000	66.95	73.35	140.30	0.00	
55	0.00000	63.65	76.60	140.25	0.00	
56	0.00000	63.45	76.74	140.19	0.00	
57	0.00000	62.85	77.31	140.16	0.00	
58	0.00000	62.05	78.09	140.14	0.00	
59	-22.50000	62.10	78.02	140.12	0.00	
60	-137.50000	61.15	78.94	140.09	0.00	m
61	0.00000	92.75	49.67	142.42	0.00	
62	0.00000	103.65	38.51	142.16	0.00	
63	-30.00000	125.30	16.75	142.05	0.00	
64	-480.00000	125.30	16.73	142.03	0.00	
33q34	0.00000	84.70	57.95	142.65	0.00	
34q61	0.00000	84.05	58.51	142.56	0.00	
35q36	0.00000	83.75	58.80	142.55	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-885.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 3 h 0 min

* RISULTATI DI RAMO *

Np - Na	FLOW	L	Di	eps	csi	q	V	sfr	dH

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			TYPE	(m)	(m)	(mm)	(-)	(l/s)	(m/s)		(E-3)	(m)
1	-	2	L	84	1.1	0.200	0.8	-0.00002	-0.00		-0.0	-0.00
2	-	3	L	164	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
3	-	4	L	406	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
4	-	5	L	170	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
5	-	6	L	437	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
6	-	7	L	56	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
7	-	8	L	31	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
8	-	9	L	132	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
9	-	10	L	258	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
10	-	11	L	198	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
11	-	12	L	90	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
12	-	13	L	85	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
13	-	14	L	410	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
14	-	15	L	225	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
15	-	16	L	202	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
16	-	17	L	555	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
17	-	18	L	475	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
18	-	19	L	47	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
19	-	20	L	283	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
20	-	21	L	225	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
21	-	22	L	100	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
22	-	23	L	278	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
23	-	24	L	194	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
24	-	25	L	433	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
25	-	26	L	193	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
26	-	27	L	221	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
27	-	28	L	200	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
28	-	29	L	110	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
29	-	30	L	407	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
30	-	31	L	35	1.1	0.200	0.0	0.00002	0.00	M	0.0	0.00
31	-	32	L	35	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
32	-	33	L	118	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
33	-	34		89	1.1	0.200	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_1A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35	-	36		126	0.6	0.200	-2831.8	0.00000	0.00		0.0	0.00
36	-	37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37	-	38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38	-	39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39	-	40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40	-	41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42	-	43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43	-	44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44	-	45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45	-	46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46	-	47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48	-	49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49	-	50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50	-	51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51	-	52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53	-	54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55	-	56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58	-	59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34	-	61		294	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
61	-	62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62	-	63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52	-	53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63	-	64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*m
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	^
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_1A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	
60	0.00000	61.15	85.85	147.00	0.00	
61	0.00000	92.75	54.25	147.00	0.00	
62	0.00000	103.65	43.35	147.00	0.00	
63	0.00000	125.30	21.70	147.00	0.00	
64	0.00000	125.30	21.70	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
34q61	0.00000	84.05	62.95	147.00	0.00	^
35q36	0.00000	83.75	63.25	147.00	0.00	M

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	0.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_2

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q (l/s)	Legge
1	145.20	0.0000	0.0000	0.0000	0.0000	
2	144.60	0.0000	0.0000	0.0000	0.0000	
3	143.05	0.0000	0.0000	0.0000	-15.0000	Q=0
4	140.20	0.0000	0.0000	0.0000	0.0000	
5	137.20	0.0000	0.0000	0.0000	0.0000	
6	132.40	0.0000	0.0000	0.0000	-30.0000	Q=0
7	132.30	0.0000	0.0000	0.0000	0.0000	
8	132.20	0.0000	0.0000	0.0000	0.0000	
9	132.20	0.0000	0.0000	0.0000	0.0000	
10	130.95	0.0000	0.0000	0.0000	0.0000	
11	129.30	0.0000	0.0000	0.0000	0.0000	
12	126.20	0.0000	0.0000	0.0000	0.0000	
13	127.20	0.0000	0.0000	0.0000	0.0000	
14	123.20	0.0000	0.0000	0.0000	0.0000	
15	123.55	0.0000	0.0000	0.0000	0.0000	
16	123.50	0.0000	0.0000	0.0000	-30.0000	Q=0
17	118.20	0.0000	0.0000	0.0000	0.0000	
18	109.60	0.0000	0.0000	0.0000	-60.0000	Q=0
19	109.60	0.0000	0.0000	0.0000	0.0000	
20	105.00	0.0000	0.0000	0.0000	0.0000	
21	104.90	0.0000	0.0000	0.0000	0.0000	
22	102.60	0.0000	0.0000	0.0000	0.0000	
23	101.65	0.0000	0.0000	0.0000	0.0000	
24	101.15	0.0000	0.0000	0.0000	-105.0000	Q=0
25	95.10	0.0000	0.0000	0.0000	0.0000	
26	91.70	0.0000	0.0000	0.0000	0.0000	
27	91.95	0.0000	0.0000	0.0000	0.0000	
28	90.75	0.0000	0.0000	0.0000	0.0000	
29	89.00	0.0000	0.0000	0.0000	0.0000	
30	86.70	0.0000	0.0000	0.0000	0.0000	
31	84.40	0.0000	0.0000	0.0000	0.0000	
32	86.30	0.0000	0.0000	0.0000	0.0000	
33	84.70	0.0000	0.0000	0.0000	-45.0000	Q=0
34	84.05	0.0000	0.0000	0.0000	0.0000	
35	83.75	0.0000	0.0000	0.0000	0.0000	
36	83.45	0.0000	0.0000	0.0000	0.0000	
37	81.40	0.0000	0.0000	0.0000	0.0000	
38	74.80	0.0000	0.0000	0.0000	0.0000	
39	73.45	0.0000	0.0000	0.0000	0.0000	
40	73.45	0.0000	0.0000	0.0000	0.0000	
41	72.55	0.0000	0.0000	0.0000	0.0000	
42	73.65	0.0000	0.0000	-45.0000	710=0	0.0000
43	73.65	0.0000	0.0000	0.0000	0.0000	
44	71.25	0.0000	0.0000	0.0000	0.0000	
45	69.10	0.0000	0.0000	0.0000	0.0000	
46	65.55	0.0000	0.0000	0.0000	0.0000	
47	61.45	0.0000	0.0000	0.0000	0.0000	
48	63.45	0.0000	0.0000	0.0000	0.0000	
49	66.60	0.0000	0.0000	0.0000	0.0000	
50	67.10	0.0000	0.0000	0.0000	0.0000	

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DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 710=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 710=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 710=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 1000=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 1000=0	0.0000	0.0000

Legge di variazione delle portate

1000=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

710=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	35	43.08	0.630	0.00008	10.00
35	36	125.59	0.630	0.00008	10.00
36	37	176.54	0.630	0.00008	10.00
37	38	887.29	0.630	0.00008	10.00
38	39	99.98	0.630	0.00008	10.00
39	40	125.55	0.630	0.00008	10.00
40	41	171.03	0.630	0.00008	10.00
41	42	144.43	0.630	0.00008	10.00
42	43	89.03	0.630	0.00008	10.00
43	44	190.00	0.630	0.00008	10.00
44	45	208.88	0.630	0.00008	10.00
45	46	190.69	0.630	0.00008	10.00
46	47	107.21	0.630	0.00008	10.00
47	48	39.67	0.630	0.00008	10.00
48	49	62.18	0.630	0.00008	10.00
49	50	176.26	0.630	0.00008	10.00
50	51	163.09	0.630	0.00008	10.00
51	52	159.24	0.630	0.00008	10.00
53	54	106.41	0.630	0.00008	10.00
54	55	129.12	0.630	0.00008	10.00
55	56	169.79	0.630	0.00008	10.00
56	57	88.86	0.630	0.00008	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
57	58	55.15	0.630	0.00008	10.00
58	59	47.17	0.630	0.00008	10.00
59	60	92.41	0.630	0.00008	10.00
34	61	293.98	0.920	0.00008	6.00
61	62	517.89	0.920	0.00008	6.00
62	63	214.84	0.920	0.00008	6.00
52	53	142.38	0.630	0.00008	10.00
63	64	55.60	0.920	0.00008	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	1769.99997	2.01 M	4.2	0.36
2	-	3	TR	164	1.1	0.080	0.0	1769.99992	2.01	2.4	0.39
3	-	4	TR	406	1.1	0.080	0.0	1755.00002	1.99	2.3	0.95
4	-	5	TR	170	1.1	0.080	0.0	1754.99997	1.99	2.3	0.40
5	-	6	TR	437	1.1	0.080	0.0	1755.00001	1.99	2.3	1.02
6	-	7	TR	56	1.1	0.080	0.0	1724.99997	1.95	2.3	0.13
7	-	8	TR	31	1.1	0.080	0.0	1724.99999	1.95	2.3	0.07
8	-	9	TR	132	1.1	0.080	0.0	1725.00002	1.95	2.3	0.30
9	-	10	TR	258	1.1	0.080	0.0	1725.00004	1.95	2.3	0.58
10	-	11	TR	198	1.1	0.080	0.0	1724.99996	1.95	2.3	0.45
11	-	12	TR	90	1.1	0.080	0.0	1724.99999	1.95	2.3	0.20
12	-	13	TR	85	1.1	0.080	0.0	1724.99995	1.95	2.3	0.19
13	-	14	TR	410	1.1	0.080	0.0	1724.99995	1.95	2.3	0.93
14	-	15	TR	225	1.1	0.080	0.0	1724.99999	1.95	2.3	0.51
15	-	16	TR	202	1.1	0.080	0.0	1725.00000	1.95	2.3	0.46
16	-	17	TR	555	1.1	0.080	0.0	1694.99999	1.92	2.2	1.22
17	-	18	TR	475	1.1	0.080	0.0	1694.99997	1.92	2.2	1.04
18	-	19	TR	47	1.1	0.080	0.0	1635.00001	1.85	2.0	0.10
19	-	20	TR	283	1.1	0.080	0.0	1634.99995	1.85	2.0	0.58
20	-	21	TR	225	1.1	0.080	0.0	1634.99996	1.85	2.0	0.46
21	-	22	TR	100	1.1	0.080	0.0	1635.00001	1.85	2.0	0.20
22	-	23	TR	278	1.1	0.080	0.0	1635.00002	1.85	2.0	0.57
23	-	24	TR	194	1.1	0.080	0.0	1635.00001	1.85	2.0	0.40
24	-	25	TR	433	1.1	0.080	0.0	1529.99996	1.73	1.8	0.78
25	-	26	TR	193	1.1	0.080	0.0	1529.99997	1.73	1.8	0.35
26	-	27	TR	221	1.1	0.080	0.0	1530.00000	1.73	1.8	0.40
27	-	28	TR	200	1.1	0.080	0.0	1530.00002	1.73	1.8	0.36
28	-	29	TR	110	1.1	0.080	0.0	1529.99997	1.73	1.8	0.20
29	-	30	TR	407	1.1	0.080	0.0	1529.99998	1.73	1.8	0.73
30	-	31	TR	35	1.1	0.080	0.0	1530.00004	1.73	1.8	0.06
31	-	32	TR	35	1.1	0.080	0.0	1530.00001	1.73	1.8	0.06
32	-	33	TR	118	1.1	0.080	0.0	1529.99996	1.73	1.8	0.21
33	Q	34		89	1.1	0.080	1.1	1485.00001	1.68	3.4	0.30

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ADD_TAVO SIM_2

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49		2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88	m	0.9	0.08
34	Q	61		294	0.9	0.080	1.4	1020.00000	1.53		2.3	0.67
61	-	62	TR	518	0.9	0.080	0.0	1019.99998	1.53		1.7	0.87
62	-	63	TR	215	0.9	0.080	0.0	1019.99999	1.53		1.7	0.36
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29
63	-	64	TR	56	0.9	0.080	0.0	959.99997	1.44		1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_2

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.04	146.64	0.00	
3	-15.00000	143.05	3.20	146.25	0.00	
4	0.00000	140.20	5.10	145.30	0.00	
5	0.00000	137.20	7.70	144.90	0.00	
6	-30.00000	132.40	11.48	143.88	0.00	
7	0.00000	132.30	11.45	143.75	0.00	
8	0.00000	132.20	11.48	143.68	0.00	
9	0.00000	132.20	11.18	143.38	0.00	
10	0.00000	130.95	11.85	142.80	0.00	
11	0.00000	129.30	13.05	142.35	0.00	
12	0.00000	126.20	15.94	142.14	0.00	
13	0.00000	127.20	14.75	141.95	0.00	
14	0.00000	123.20	17.82	141.02	0.00	
15	0.00000	123.55	16.97	140.52	0.00	
16	-30.00000	123.50	16.56	140.06	0.00	
17	0.00000	118.20	20.64	138.84	0.00	
18	-60.00000	109.60	28.20	137.80	0.00	
19	0.00000	109.60	28.10	137.70	0.00	
20	0.00000	105.00	32.13	137.13	0.00	
21	0.00000	104.90	31.77	136.67	0.00	
22	0.00000	102.60	33.86	136.46	0.00	
23	0.00000	101.65	34.24	135.89	0.00	
24	-105.00000	101.15	34.35	135.50	0.00	
25	0.00000	95.10	39.62	134.72	0.00	
26	0.00000	91.70	42.67	134.37	0.00	
27	0.00000	91.95	42.03	133.98	0.00	
28	0.00000	90.75	42.87	133.62	0.00	
29	0.00000	89.00	44.42	133.42	0.00	
30	0.00000	86.70	45.99	132.69	0.00	
31	0.00000	84.40	48.23	132.63	0.00	
32	0.00000	86.30	46.26	132.56	0.00	
33	-45.00000	84.70	47.65	132.35	0.00	
34	0.00000	84.05	48.00	132.05	0.00	
35	0.00000	83.75	48.19	131.94	0.00	
36	0.00000	83.45	48.10	131.55	0.00	
37	0.00000	81.40	49.70	131.10	0.00	
38	0.00000	74.80	54.08	128.88	0.00	
39	0.00000	73.45	55.18	128.63	0.00	
40	0.00000	73.45	54.87	128.32	0.00	
41	0.00000	72.55	55.34	127.89	0.00	
42	-45.00000	73.65	53.88	127.53	0.00	
43	0.00000	73.65	53.70	127.35	0.00	
44	0.00000	71.25	55.71	126.96	0.00	
45	0.00000	69.10	57.43	126.53	0.00	
46	0.00000	65.55	60.58	126.13	0.00	
47	0.00000	61.45	64.46	125.91	0.00	
48	0.00000	63.45	62.38	125.83	0.00	
49	0.00000	66.60	59.10	125.70	0.00	
50	0.00000	67.10	58.24	125.34	0.00	

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ADD_TAVO SIM_2

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	58.55	125.00	0.00	
52	0.00000	67.30	57.38	124.68	0.00	
53	-100.00000	66.55	57.83	124.38	0.00	
54	0.00000	66.95	57.30	124.25	0.00	
55	0.00000	63.65	60.44	124.09	0.00	
56	0.00000	63.45	60.44	123.89	0.00	
57	0.00000	62.85	60.93	123.78	0.00	
58	0.00000	62.05	61.66	123.71	0.00	
59	-45.00000	62.10	61.55	123.65	0.00	
60	-275.00000	61.15	62.42	123.57	0.00	m
61	0.00000	92.75	38.63	131.38	0.00	
62	0.00000	103.65	26.86	130.51	0.00	
63	-60.00000	125.30	4.85	130.15	0.00	
64	-960.00000	125.30	4.76	130.06	0.00	
33q34	0.00000	84.70	47.50	132.20	0.00	
34q61	0.00000	84.05	47.82	131.87	0.00	
35q36	0.00000	83.75	48.11	131.86	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1769.99997

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

T = 1 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	285.00000	0.32		0.1	0.01
2	-	3	PL	164	1.1	0.080	0.0	285.00001	0.32	M	0.1	0.01
3	-	4	PL	406	1.1	0.080	0.0	269.99999	0.31		0.1	0.03
4	-	5	PL	170	1.1	0.080	0.0	270.00000	0.31		0.1	0.01
5	-	6	PL	437	1.1	0.080	0.0	269.99999	0.31		0.1	0.03
6	-	7	PL	56	1.1	0.080	0.0	240.00000	0.27		0.1	0.00
7	-	8	PL	31	1.1	0.080	0.0	240.00000	0.27		0.1	0.00
8	-	9	PL	132	1.1	0.080	0.0	239.99999	0.27		0.1	0.01
9	-	10	PL	258	1.1	0.080	0.0	239.99999	0.27		0.1	0.01
10	-	11	PL	198	1.1	0.080	0.0	240.00000	0.27		0.1	0.01
11	-	12	PL	90	1.1	0.080	0.0	240.00000	0.27		0.1	0.00
12	-	13	PL	85	1.1	0.080	0.0	240.00000	0.27		0.1	0.00
13	-	14	PL	410	1.1	0.080	0.0	240.00000	0.27		0.1	0.02
14	-	15	PL	225	1.1	0.080	0.0	240.00000	0.27		0.1	0.01
15	-	16	PL	202	1.1	0.080	0.0	240.00000	0.27		0.1	0.01
16	-	17	PL	555	1.1	0.080	0.0	210.00000	0.24		0.0	0.02
17	-	18	PL	475	1.1	0.080	0.0	210.00000	0.24		0.0	0.02
18	-	19	PL	47	1.1	0.080	0.0	150.00000	0.17		0.0	0.00
19	-	20	PL	283	1.1	0.080	0.0	150.00001	0.17		0.0	0.01
20	-	21	PL	225	1.1	0.080	0.0	150.00001	0.17		0.0	0.01
21	-	22	PL	100	1.1	0.080	0.0	150.00000	0.17		0.0	0.00
22	-	23	PL	278	1.1	0.080	0.0	149.99999	0.17		0.0	0.01
23	-	24	PL	194	1.1	0.080	0.0	150.00000	0.17		0.0	0.00
24	-	25	PL	433	1.1	0.080	0.0	45.00001	0.05		0.0	0.00
25	-	26	PL	193	1.1	0.080	0.0	45.00001	0.05		0.0	0.00
26	-	27	PL	221	1.1	0.080	0.0	45.00000	0.05		0.0	0.00
27	-	28	PL	200	1.1	0.080	0.0	44.99999	0.05		0.0	0.00
28	-	29	PL	110	1.1	0.080	0.0	45.00001	0.05		0.0	0.00
29	-	30	PL	407	1.1	0.080	0.0	45.00001	0.05		0.0	0.00
30	-	31	PL	35	1.1	0.080	0.0	44.99999	0.05		0.0	0.00
31	-	32	PL	35	1.1	0.080	0.0	45.00000	0.05		0.0	0.00
32	-	33	PL	118	1.1	0.080	0.0	45.00001	0.05		0.0	0.00
33	-	34		89	1.1	0.080	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_2

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
35	-	36		126	0.6	0.080	-54167.9	0.00000	0.00		-0.0	-0.00
36	-	37	L	177	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
37	-	38	L	887	0.6	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
38	-	39	L	100	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
39	-	40	L	126	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
40	-	41	L	171	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
42	-	43	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
43	-	44	L	190	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
44	-	45	L	209	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
45	-	46	L	191	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
46	-	47	L	107	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
48	-	49	L	62	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
49	-	50	L	176	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
50	-	51	L	163	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
51	-	52	L	159	0.6	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
53	-	54	L	106	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
55	-	56	L	170	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
58	-	59	L	47	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
34	-	61		294	0.9	0.080	0.0	0.00000	0.00		0.0	0.00
61	-	62	L	518	0.9	0.080	0.0	0.00000	0.00		0.0	0.00
62	-	63	L	215	0.9	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
52	-	53	L	142	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
63	-	64	L	56	0.9	0.080	0.0	0.00001	0.00		0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_2

 * RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.39	146.99	0.00	
3	-15.00000	143.05	3.93	146.98	0.00	
4	0.00000	140.20	6.75	146.95	0.00	
5	0.00000	137.20	9.74	146.94	0.00	
6	-30.00000	132.40	14.51	146.91	0.00	
7	0.00000	132.30	14.61	146.91	0.00	
8	0.00000	132.20	14.70	146.90	0.00	
9	0.00000	132.20	14.70	146.90	0.00	
10	0.00000	130.95	15.93	146.88	0.00	
11	0.00000	129.30	17.57	146.87	0.00	
12	0.00000	126.20	20.67	146.87	0.00	
13	0.00000	127.20	19.66	146.86	0.00	
14	0.00000	123.20	23.64	146.84	0.00	
15	0.00000	123.55	23.28	146.83	0.00	
16	-30.00000	123.50	23.32	146.82	0.00	
17	0.00000	118.20	28.59	146.79	0.00	
18	-60.00000	109.60	37.17	146.77	0.00	
19	0.00000	109.60	37.17	146.77	0.00	
20	0.00000	105.00	41.77	146.77	0.00	
21	0.00000	104.90	41.86	146.76	0.00	
22	0.00000	102.60	44.16	146.76	0.00	
23	0.00000	101.65	45.10	146.75	0.00	
24	-105.00000	101.15	45.60	146.75	0.00	
25	0.00000	95.10	51.65	146.75	0.00	
26	0.00000	91.70	55.05	146.75	0.00	
27	0.00000	91.95	54.79	146.74	0.00	
28	0.00000	90.75	55.99	146.74	0.00	
29	0.00000	89.00	57.74	146.74	0.00	
30	0.00000	86.70	60.04	146.74	0.00	
31	0.00000	84.40	62.34	146.74	0.00	
32	0.00000	86.30	60.44	146.74	0.00	
33	-45.00000	84.70	62.04	146.74	0.00	
34	0.00000	84.05	62.69	146.74	0.00	^
35	0.00000	83.75	62.99	146.74	0.00	
36	0.00000	83.45	63.29	146.74	0.00	
37	0.00000	81.40	65.34	146.74	0.00	
38	0.00000	74.80	71.94	146.74	0.00	
39	0.00000	73.45	73.29	146.74	0.00	
40	0.00000	73.45	73.29	146.74	0.00	
41	0.00000	72.55	74.19	146.74	0.00	
42	0.00000	73.65	73.09	146.74	0.00	
43	0.00000	73.65	73.09	146.74	0.00	
44	0.00000	71.25	75.49	146.74	0.00	
45	0.00000	69.10	77.64	146.74	0.00	
46	0.00000	65.55	81.19	146.74	0.00	
47	0.00000	61.45	85.29	146.74	0.00	
48	0.00000	63.45	83.29	146.74	0.00	
49	0.00000	66.60	80.14	146.74	0.00	
50	0.00000	67.10	79.64	146.74	0.00	

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ADD_TAVO SIM_2

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.29	146.74	0.00	
52	0.00000	67.30	79.44	146.74	0.00	
53	0.00000	66.55	80.19	146.74	0.00	
54	0.00000	66.95	79.79	146.74	0.00	
55	0.00000	63.65	83.09	146.74	0.00	
56	0.00000	63.45	83.29	146.74	0.00	
57	0.00000	62.85	83.89	146.74	0.00	
58	0.00000	62.05	84.69	146.74	0.00	
59	0.00000	62.10	84.64	146.74	0.00	
60	0.00000	61.15	85.59	146.74	0.00	
61	0.00000	92.75	53.99	146.74	0.00	
62	0.00000	103.65	43.09	146.74	0.00	
63	0.00000	125.30	21.44	146.74	0.00	
64	0.00000	125.30	21.44	146.74	0.00	m
33q34	0.00000	84.70	62.04	146.74	0.00	
34q61	0.00000	84.05	62.69	146.74	0.00	^
35q36	0.00000	83.75	62.99	146.74	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-285.00000

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

T = 2 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1 - 2	PL	84	1.1	0.080	0.8	142.50000	0.16		0.0	0.00
2 - 3	PL	164	1.1	0.080	0.0	142.50001	0.16	M	0.0	0.00
3 - 4	PL	406	1.1	0.080	0.0	134.99999	0.15		0.0	0.01
4 - 5	PL	170	1.1	0.080	0.0	135.00000	0.15		0.0	0.00
5 - 6	PL	437	1.1	0.080	0.0	134.99999	0.15		0.0	0.01
6 - 7	PL	56	1.1	0.080	0.0	120.00000	0.14		0.0	0.00
7 - 8	PL	31	1.1	0.080	0.0	120.00000	0.14		0.0	0.00
8 - 9	PL	132	1.1	0.080	0.0	119.99999	0.14		0.0	0.00
9 - 10	PL	258	1.1	0.080	0.0	119.99999	0.14		0.0	0.00
10 - 11	PL	198	1.1	0.080	0.0	120.00001	0.14		0.0	0.00
11 - 12	PL	90	1.1	0.080	0.0	120.00000	0.14		0.0	0.00
12 - 13	PL	85	1.1	0.080	0.0	120.00001	0.14		0.0	0.00
13 - 14	PL	410	1.1	0.080	0.0	120.00001	0.14		0.0	0.01
14 - 15	PL	225	1.1	0.080	0.0	120.00000	0.14		0.0	0.00
15 - 16	PL	202	1.1	0.080	0.0	120.00000	0.14		0.0	0.00
16 - 17	PL	555	1.1	0.080	0.0	105.00000	0.12		0.0	0.01
17 - 18	PL	475	1.1	0.080	0.0	105.00000	0.12		0.0	0.01
18 - 19	PL	47	1.1	0.080	0.0	74.99999	0.08		0.0	0.00
19 - 20	PL	283	1.1	0.080	0.0	75.00001	0.08		0.0	0.00
20 - 21	PL	225	1.1	0.080	0.0	75.00001	0.08		0.0	0.00
21 - 22	PL	100	1.1	0.080	0.0	74.99999	0.08		0.0	0.00
22 - 23	PL	278	1.1	0.080	0.0	74.99999	0.08		0.0	0.00
23 - 24	PL	194	1.1	0.080	0.0	74.99999	0.08		0.0	0.00
24 - 25	PL	433	1.1	0.080	0.0	22.50001	0.03		0.0	0.00
25 - 26	PL	193	1.1	0.080	0.0	22.50001	0.03		0.0	0.00
26 - 27	PL	221	1.1	0.080	0.0	22.50000	0.03		0.0	0.00
27 - 28	PL	200	1.1	0.080	0.0	22.49999	0.03		0.0	0.00
28 - 29	PL	110	1.1	0.080	0.0	22.50001	0.03		0.0	0.00
29 - 30	PL	407	1.1	0.080	0.0	22.50001	0.03		0.0	0.00
30 - 31	PL	35	1.1	0.080	0.0	22.49999	0.03		0.0	0.00
31 - 32	PL	35	1.1	0.080	0.0	22.50000	0.03		0.0	0.00
32 - 33	PL	118	1.1	0.080	0.0	22.50001	0.03		0.0	0.00
33 - 34		89	1.1	0.080	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_2

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
35	-	36		126	0.6	0.080	-54167.9	0.00000	0.00		-0.0	-0.00
36	-	37	L	177	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
37	-	38	L	887	0.6	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
38	-	39	L	100	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
39	-	40	L	126	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
40	-	41	L	171	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
42	-	43	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
43	-	44	L	190	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
44	-	45	L	209	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
45	-	46	L	191	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
46	-	47	L	107	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
48	-	49	L	62	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
49	-	50	L	176	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
50	-	51	L	163	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
51	-	52	L	159	0.6	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
53	-	54	L	106	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
55	-	56	L	170	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
58	-	59	L	47	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
34	-	61		294	0.9	0.080	0.0	0.00000	0.00		0.0	0.00
61	-	62	L	518	0.9	0.080	0.0	0.00000	0.00		0.0	0.00
62	-	63	L	215	0.9	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
52	-	53	L	142	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
63	-	64	L	56	0.9	0.080	0.0	0.00001	0.00		0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

Ing. Vincenzo D'Angelo
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ADD_TAVO SIM_2

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.40	147.00	0.00	
3	-7.50000	143.05	3.94	146.99	0.00	
4	0.00000	140.20	6.79	146.99	0.00	
5	0.00000	137.20	9.78	146.98	0.00	
6	-15.00000	132.40	14.57	146.97	0.00	
7	0.00000	132.30	14.67	146.97	0.00	
8	0.00000	132.20	14.77	146.97	0.00	
9	0.00000	132.20	14.77	146.97	0.00	
10	0.00000	130.95	16.02	146.97	0.00	
11	0.00000	129.30	17.66	146.96	0.00	
12	0.00000	126.20	20.76	146.96	0.00	
13	0.00000	127.20	19.76	146.96	0.00	
14	0.00000	123.20	23.76	146.96	0.00	
15	0.00000	123.55	23.40	146.95	0.00	
16	-15.00000	123.50	23.45	146.95	0.00	
17	0.00000	118.20	28.74	146.94	0.00	
18	-30.00000	109.60	37.34	146.94	0.00	
19	0.00000	109.60	37.34	146.94	0.00	
20	0.00000	105.00	41.93	146.93	0.00	
21	0.00000	104.90	42.03	146.93	0.00	
22	0.00000	102.60	44.33	146.93	0.00	
23	0.00000	101.65	45.28	146.93	0.00	
24	-52.50000	101.15	45.78	146.93	0.00	
25	0.00000	95.10	51.83	146.93	0.00	
26	0.00000	91.70	55.23	146.93	0.00	
27	0.00000	91.95	54.98	146.93	0.00	
28	0.00000	90.75	56.18	146.93	0.00	
29	0.00000	89.00	57.93	146.93	0.00	
30	0.00000	86.70	60.23	146.93	0.00	
31	0.00000	84.40	62.53	146.93	0.00	
32	0.00000	86.30	60.63	146.93	0.00	
33	-22.50000	84.70	62.23	146.93	0.00	
34	0.00000	84.05	62.88	146.93	0.00	^
35	0.00000	83.75	63.18	146.93	0.00	
36	0.00000	83.45	63.48	146.93	0.00	
37	0.00000	81.40	65.53	146.93	0.00	
38	0.00000	74.80	72.13	146.93	0.00	
39	0.00000	73.45	73.48	146.93	0.00	
40	0.00000	73.45	73.48	146.93	0.00	
41	0.00000	72.55	74.38	146.93	0.00	
42	0.00000	73.65	73.28	146.93	0.00	
43	0.00000	73.65	73.28	146.93	0.00	
44	0.00000	71.25	75.68	146.93	0.00	
45	0.00000	69.10	77.83	146.93	0.00	
46	0.00000	65.55	81.38	146.93	0.00	
47	0.00000	61.45	85.48	146.93	0.00	
48	0.00000	63.45	83.48	146.93	0.00	
49	0.00000	66.60	80.33	146.93	0.00	
50	0.00000	67.10	79.83	146.93	0.00	

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ADD_TAVO SIM_2

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.48	146.93	0.00	
52	0.00000	67.30	79.63	146.93	0.00	
53	0.00000	66.55	80.38	146.93	0.00	
54	0.00000	66.95	79.98	146.93	0.00	
55	0.00000	63.65	83.28	146.93	0.00	
56	0.00000	63.45	83.48	146.93	0.00	
57	0.00000	62.85	84.08	146.93	0.00	
58	0.00000	62.05	84.88	146.93	0.00	
59	0.00000	62.10	84.83	146.93	0.00	
60	0.00000	61.15	85.78	146.93	0.00	
61	0.00000	92.75	54.18	146.93	0.00	
62	0.00000	103.65	43.28	146.93	0.00	
63	0.00000	125.30	21.63	146.93	0.00	m
64	0.00000	125.30	21.63	146.93	0.00	
33q34	0.00000	84.70	62.23	146.93	0.00	
34q61	0.00000	84.05	62.88	146.93	0.00	^
35q36	0.00000	83.75	63.18	146.93	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-142.50000

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 3 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1 - 2	L	84	1.1	0.080	0.8	0.00001	0.00		0.0	0.00
2 - 3	L	164	1.1	0.080	0.0	0.00002	0.00	M	0.0	0.00
3 - 4	L	406	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
4 - 5	L	170	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
5 - 6	L	437	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
6 - 7	L	56	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
7 - 8	L	31	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
8 - 9	L	132	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
9 - 10	L	258	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00
10 - 11	L	198	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
11 - 12	L	90	1.1	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
12 - 13	L	85	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
13 - 14	L	410	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
14 - 15	L	225	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
15 - 16	L	202	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
16 - 17	L	555	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
17 - 18	L	475	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
18 - 19	L	47	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
19 - 20	L	283	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
20 - 21	L	225	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
21 - 22	L	100	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
22 - 23	L	278	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
23 - 24	L	194	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
24 - 25	L	433	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
25 - 26	L	193	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
26 - 27	L	221	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
27 - 28	L	200	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
28 - 29	L	110	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
29 - 30	L	407	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
30 - 31	L	35	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00
31 - 32	L	35	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
32 - 33	L	118	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
33 - 34		89	1.1	0.080	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_2

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
35	-	36		126	0.6	0.080	0.0	0.00000	0.00	-0.0	-0.00
36	-	37	L	177	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
37	-	38	L	887	0.6	0.080	0.0	-0.00001	-0.00	-0.0	-0.00
38	-	39	L	100	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
39	-	40	L	126	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
40	-	41	L	171	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
41	-	42	L	144	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
42	-	43	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
43	-	44	L	190	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
44	-	45	L	209	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
45	-	46	L	191	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
46	-	47	L	107	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
47	-	48	L	40	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
48	-	49	L	62	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
49	-	50	L	176	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
50	-	51	L	163	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
51	-	52	L	159	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
53	-	54	L	106	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
54	-	55	L	129	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
55	-	56	L	170	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
56	-	57	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
57	-	58	L	55	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
58	-	59	L	47	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
59	-	60	L	92	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
34	-	61		294	0.9	0.080	0.0	0.00000	0.00	0.0	0.00
61	-	62	L	518	0.9	0.080	0.0	0.00000	0.00	0.0	0.00
62	-	63	L	215	0.9	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
52	-	53	L	142	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
63	-	64	L	56	0.9	0.080	0.0	0.00001	0.00	0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_2

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*m
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	^
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_2

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	M
60	0.00000	61.15	85.85	147.00	0.00	
61	0.00000	92.75	54.25	147.00	0.00	
62	0.00000	103.65	43.35	147.00	0.00	
63	0.00000	125.30	21.70	147.00	0.00	
64	0.00000	125.30	21.70	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
34q61	0.00000	84.05	62.95	147.00	0.00	^
35q36	0.00000	83.75	63.25	147.00	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-0.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_2°

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)	
1	145.20	0.0000	0.0000	0.0000	0.0000	
2	144.60	0.0000	0.0000	0.0000	0.0000	
3	143.05	0.0000	0.0000	0.0000	-15.0000	Q=0
4	140.20	0.0000	0.0000	0.0000	0.0000	
5	137.20	0.0000	0.0000	0.0000	0.0000	
6	132.40	0.0000	0.0000	0.0000	-30.0000	Q=0
7	132.30	0.0000	0.0000	0.0000	0.0000	
8	132.20	0.0000	0.0000	0.0000	0.0000	
9	132.20	0.0000	0.0000	0.0000	0.0000	
10	130.95	0.0000	0.0000	0.0000	0.0000	
11	129.30	0.0000	0.0000	0.0000	0.0000	
12	126.20	0.0000	0.0000	0.0000	0.0000	
13	127.20	0.0000	0.0000	0.0000	0.0000	
14	123.20	0.0000	0.0000	0.0000	0.0000	
15	123.55	0.0000	0.0000	0.0000	0.0000	
16	123.50	0.0000	0.0000	0.0000	-30.0000	Q=0
17	118.20	0.0000	0.0000	0.0000	0.0000	
18	109.60	0.0000	0.0000	0.0000	-60.0000	Q=0
19	109.60	0.0000	0.0000	0.0000	0.0000	
20	105.00	0.0000	0.0000	0.0000	0.0000	
21	104.90	0.0000	0.0000	0.0000	0.0000	
22	102.60	0.0000	0.0000	0.0000	0.0000	
23	101.65	0.0000	0.0000	0.0000	0.0000	
24	101.15	0.0000	0.0000	0.0000	-105.0000	Q=0
25	95.10	0.0000	0.0000	0.0000	0.0000	
26	91.70	0.0000	0.0000	0.0000	0.0000	
27	91.95	0.0000	0.0000	0.0000	0.0000	
28	90.75	0.0000	0.0000	0.0000	0.0000	
29	89.00	0.0000	0.0000	0.0000	0.0000	
30	86.70	0.0000	0.0000	0.0000	0.0000	
31	84.40	0.0000	0.0000	0.0000	0.0000	
32	86.30	0.0000	0.0000	0.0000	0.0000	
33	84.70	0.0000	0.0000	0.0000	-45.0000	Q=0
34	84.05	0.0000	0.0000	0.0000	0.0000	
35	83.75	0.0000	0.0000	0.0000	0.0000	
36	83.45	0.0000	0.0000	0.0000	0.0000	
37	81.40	0.0000	0.0000	0.0000	0.0000	
38	74.80	0.0000	0.0000	0.0000	0.0000	
39	73.45	0.0000	0.0000	0.0000	0.0000	
40	73.45	0.0000	0.0000	0.0000	0.0000	
41	72.55	0.0000	0.0000	0.0000	0.0000	
42	73.65	0.0000	0.0000	-45.0000	710=0	0.0000
43	73.65	0.0000	0.0000	0.0000		0.0000
44	71.25	0.0000	0.0000	0.0000		0.0000
45	69.10	0.0000	0.0000	0.0000		0.0000
46	65.55	0.0000	0.0000	0.0000		0.0000
47	61.45	0.0000	0.0000	0.0000		0.0000
48	63.45	0.0000	0.0000	0.0000		0.0000
49	66.60	0.0000	0.0000	0.0000		0.0000
50	67.10	0.0000	0.0000	0.0000		0.0000
51	66.45	0.0000	0.0000	0.0000		0.0000
52	67.30	0.0000	0.0000	0.0000		0.0000
53	66.55	0.0000	0.0000	-100.0000	710=0	0.0000

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DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 710=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 710=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 1000=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 1000=0	0.0000	0.0000

Legge di variazione delle portate

1000=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

710=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.0002	10.00
2	3	164.07	1.060	0.0002	10.00
3	4	405.92	1.060	0.0002	10.00
4	5	170.13	1.060	0.0002	10.00
5	6	437.03	1.060	0.0002	10.00
6	7	55.65	1.060	0.0002	10.00
7	8	30.91	1.060	0.0002	10.00
8	9	132.24	1.060	0.0002	10.00
9	10	257.54	1.060	0.0002	10.00
10	11	198.34	1.060	0.0002	10.00
11	12	90.43	1.060	0.0002	10.00
12	13	84.54	1.060	0.0002	10.00
13	14	409.70	1.060	0.0002	10.00
14	15	224.61	1.060	0.0002	10.00
15	16	201.97	1.060	0.0002	10.00
16	17	555.36	1.060	0.0002	10.00
17	18	475.37	1.060	0.0002	10.00
18	19	46.87	1.060	0.0002	10.00
19	20	282.54	1.060	0.0002	10.00
20	21	225.00	1.060	0.0002	10.00
21	22	100.18	1.060	0.0002	10.00
22	23	278.08	1.060	0.0002	10.00
23	24	193.51	1.060	0.0002	10.00
24	25	433.46	1.060	0.0002	10.00
25	26	192.87	1.060	0.0002	10.00
26	27	221.13	1.060	0.0002	10.00
27	28	199.79	1.060	0.0002	10.00
28	29	110.19	1.060	0.0002	10.00
29	30	407.00	1.060	0.0002	10.00
30	31	34.81	1.060	0.0002	10.00
31	32	34.82	1.060	0.0002	10.00
32	33	118.46	1.060	0.0002	10.00
33	34	88.50	1.060	0.0002	10.00
34	35	43.08	0.630	0.0002	10.00
35	36	125.59	0.630	0.0002	10.00
36	37	176.54	0.630	0.0002	10.00
37	38	887.29	0.630	0.0002	10.00
38	39	99.98	0.630	0.0002	10.00
39	40	125.55	0.630	0.0002	10.00
40	41	171.03	0.630	0.0002	10.00
41	42	144.43	0.630	0.0002	10.00
42	43	89.03	0.630	0.0002	10.00
43	44	190.00	0.630	0.0002	10.00
44	45	208.88	0.630	0.0002	10.00
45	46	190.69	0.630	0.0002	10.00
46	47	107.21	0.630	0.0002	10.00
47	48	39.67	0.630	0.0002	10.00
48	49	62.18	0.630	0.0002	10.00
49	50	176.26	0.630	0.0002	10.00
50	51	163.09	0.630	0.0002	10.00
51	52	159.24	0.630	0.0002	10.00
53	54	106.41	0.630	0.0002	10.00
54	55	129.12	0.630	0.0002	10.00
55	56	169.79	0.630	0.0002	10.00
56	57	88.86	0.630	0.0002	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
57	58	55.15	0.630	0.0002	10.00
58	59	47.17	0.630	0.0002	10.00
59	60	92.41	0.630	0.0002	10.00
34	61	293.98	0.920	0.0002	6.00
61	62	517.89	0.920	0.0002	6.00
62	63	214.84	0.920	0.0002	6.00
52	53	142.38	0.630	0.0002	10.00
63	64	55.60	0.920	0.0002	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	1770.00005	2.01 M	4.6	0.39
2	-	3	TR	164	1.1	0.200	0.0	1769.99998	2.01	2.7	0.45
3	-	4	TR	406	1.1	0.200	0.0	1755.00002	1.99	2.7	1.09
4	-	5	TR	170	1.1	0.200	0.0	1755.00001	1.99	2.7	0.46
5	-	6	TR	437	1.1	0.200	0.0	1755.00003	1.99	2.7	1.17
6	-	7	TR	56	1.1	0.200	0.0	1724.99997	1.95	2.6	0.14
7	-	8	TR	31	1.1	0.200	0.0	1725.00002	1.95	2.6	0.08
8	-	9	TR	132	1.1	0.200	0.0	1724.99998	1.95	2.6	0.34
9	-	10	TR	258	1.1	0.200	0.0	1725.00003	1.95	2.6	0.67
10	-	11	TR	198	1.1	0.200	0.0	1724.99997	1.95	2.6	0.51
11	-	12	TR	90	1.1	0.200	0.0	1724.99999	1.95	2.6	0.23
12	-	13	TR	85	1.1	0.200	0.0	1724.99998	1.95	2.6	0.22
13	-	14	TR	410	1.1	0.200	0.0	1724.99994	1.95	2.6	1.06
14	-	15	TR	225	1.1	0.200	0.0	1725.00000	1.95	2.6	0.58
15	-	16	TR	202	1.1	0.200	0.0	1725.00000	1.95	2.6	0.52
16	-	17	TR	555	1.1	0.200	0.0	1694.99996	1.92	2.5	1.39
17	-	18	TR	475	1.1	0.200	0.0	1695.00001	1.92	2.5	1.19
18	-	19	TR	47	1.1	0.200	0.0	1635.00000	1.85	2.3	0.11
19	-	20	TR	283	1.1	0.200	0.0	1634.99999	1.85	2.3	0.66
20	-	21	TR	225	1.1	0.200	0.0	1635.00004	1.85	2.3	0.52
21	-	22	TR	100	1.1	0.200	0.0	1635.00000	1.85	2.3	0.23
22	-	23	TR	278	1.1	0.200	0.0	1635.00005	1.85	2.3	0.65
23	-	24	TR	194	1.1	0.200	0.0	1634.99996	1.85	2.3	0.45
24	-	25	TR	433	1.1	0.200	0.0	1529.99999	1.73	2.0	0.89
25	-	26	TR	193	1.1	0.200	0.0	1530.00002	1.73	2.0	0.39
26	-	27	TR	221	1.1	0.200	0.0	1530.00000	1.73	2.0	0.45
27	-	28	TR	200	1.1	0.200	0.0	1530.00001	1.73	2.0	0.41
28	-	29	TR	110	1.1	0.200	0.0	1529.99996	1.73	2.0	0.23
29	-	30	TR	407	1.1	0.200	0.0	1530.00003	1.73	2.0	0.83
30	-	31	TR	35	1.1	0.200	0.0	1529.99994	1.73	2.0	0.07
31	-	32	TR	35	1.1	0.200	0.0	1530.00004	1.73	2.0	0.07
32	-	33	TR	118	1.1	0.200	0.0	1530.00002	1.73	2.0	0.24
33	Q	34		89	1.1	0.200	1.1	1484.99999	1.68	3.7	0.32

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ADD_TAVO SIM_2A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49		2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88	m	1.0	0.09
34	Q	61		294	0.9	0.200	1.4	1020.00001	1.53		2.5	0.73
61	-	62	TR	518	0.9	0.200	0.0	1019.99996	1.53		1.9	0.99
62	-	63	TR	215	0.9	0.200	0.0	1019.99998	1.53		1.9	0.41
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33
63	-	64	TR	56	0.9	0.200	0.0	959.99999	1.44		1.7	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_2A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.01	146.61	0.00	
3	-15.00000	143.05	3.12	146.17	0.00	
4	0.00000	140.20	4.88	145.08	0.00	
5	0.00000	137.20	7.42	144.62	0.00	
6	-30.00000	132.40	11.05	143.45	0.00	
7	0.00000	132.30	11.01	143.31	0.00	
8	0.00000	132.20	11.03	143.23	0.00	
9	0.00000	132.20	10.69	142.89	0.00	
10	0.00000	130.95	11.27	142.22	0.00	
11	0.00000	129.30	12.41	141.71	0.00	
12	0.00000	126.20	15.27	141.47	0.00	
13	0.00000	127.20	14.05	141.25	0.00	
14	0.00000	123.20	16.99	140.19	0.00	
15	0.00000	123.55	16.06	139.61	0.00	
16	-30.00000	123.50	15.59	139.09	0.00	
17	0.00000	118.20	19.50	137.70	0.00	
18	-60.00000	109.60	26.91	136.51	0.00	
19	0.00000	109.60	26.80	136.40	0.00	
20	0.00000	105.00	30.74	135.74	0.00	
21	0.00000	104.90	30.32	135.22	0.00	
22	0.00000	102.60	32.38	134.98	0.00	
23	0.00000	101.65	32.68	134.33	0.00	
24	-105.00000	101.15	32.73	133.88	0.00	
25	0.00000	95.10	37.90	133.00	0.00	
26	0.00000	91.70	40.90	132.60	0.00	
27	0.00000	91.95	40.20	132.15	0.00	
28	0.00000	90.75	40.99	131.74	0.00	
29	0.00000	89.00	42.51	131.51	0.00	
30	0.00000	86.70	43.98	130.68	0.00	
31	0.00000	84.40	46.21	130.61	0.00	
32	0.00000	86.30	44.24	130.54	0.00	
33	-45.00000	84.70	45.59	130.29	0.00	
34	0.00000	84.05	45.92	129.97	0.00	
35	0.00000	83.75	46.10	129.85	0.00	
36	0.00000	83.45	45.96	129.41	0.00	
37	0.00000	81.40	47.50	128.90	0.00	
38	0.00000	74.80	51.57	126.37	0.00	
39	0.00000	73.45	52.63	126.08	0.00	
40	0.00000	73.45	52.27	125.72	0.00	
41	0.00000	72.55	52.68	125.23	0.00	
42	-45.00000	73.65	51.17	124.82	0.00	
43	0.00000	73.65	50.96	124.61	0.00	
44	0.00000	71.25	52.92	124.17	0.00	
45	0.00000	69.10	54.58	123.68	0.00	
46	0.00000	65.55	57.68	123.23	0.00	
47	0.00000	61.45	61.53	122.98	0.00	
48	0.00000	63.45	59.44	122.89	0.00	
49	0.00000	66.60	56.14	122.74	0.00	
50	0.00000	67.10	55.23	122.33	0.00	

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ADD_TAVO SIM_2A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	55.50	121.95	0.00	
52	0.00000	67.30	54.27	121.57	0.00	
53	-100.00000	66.55	54.69	121.24	0.00	
54	0.00000	66.95	54.14	121.09	0.00	
55	0.00000	63.65	57.26	120.91	0.00	
56	0.00000	63.45	57.23	120.68	0.00	
57	0.00000	62.85	57.71	120.56	0.00	
58	0.00000	62.05	58.43	120.48	0.00	
59	-45.00000	62.10	58.32	120.42	0.00	
60	-275.00000	61.15	59.17	120.32	0.00	m
61	0.00000	92.75	36.48	129.23	0.00	
62	0.00000	103.65	24.59	128.24	0.00	
63	-60.00000	125.30	2.53	127.83	0.00	
64	-960.00000	125.30	2.44	127.74	0.00	
33q34	0.00000	84.70	45.44	130.14	0.00	
34q61	0.00000	84.05	45.75	129.80	0.00	
35q36	0.00000	83.75	46.02	129.77	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1770.00005

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 1 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1 - 2	TR	84	1.1	0.200	0.8	284.99999	0.32	0.1	0.01
2 - 3	TR	164	1.1	0.200	0.0	285.00000	0.32 M	0.1	0.01
3 - 4	TR	406	1.1	0.200	0.0	269.99999	0.31	0.1	0.03
4 - 5	TR	170	1.1	0.200	0.0	270.00000	0.31	0.1	0.01
5 - 6	TR	437	1.1	0.200	0.0	269.99999	0.31	0.1	0.03
6 - 7	TR	56	1.1	0.200	0.0	240.00000	0.27	0.1	0.00
7 - 8	TR	31	1.1	0.200	0.0	239.99999	0.27	0.1	0.00
8 - 9	TR	132	1.1	0.200	0.0	240.00000	0.27	0.1	0.01
9 - 10	TR	258	1.1	0.200	0.0	239.99999	0.27	0.1	0.01
10 - 11	TR	198	1.1	0.200	0.0	240.00000	0.27	0.1	0.01
11 - 12	TR	90	1.1	0.200	0.0	240.00000	0.27	0.1	0.01
12 - 13	TR	85	1.1	0.200	0.0	240.00000	0.27	0.1	0.00
13 - 14	TR	410	1.1	0.200	0.0	240.00001	0.27	0.1	0.02
14 - 15	TR	225	1.1	0.200	0.0	240.00000	0.27	0.1	0.01
15 - 16	TR	202	1.1	0.200	0.0	240.00000	0.27	0.1	0.01
16 - 17	TR	555	1.1	0.200	0.0	210.00000	0.24	0.0	0.02
17 - 18	TR	475	1.1	0.200	0.0	210.00000	0.24	0.0	0.02
18 - 19	TR	47	1.1	0.200	0.0	150.00000	0.17	0.0	0.00
19 - 20	TR	283	1.1	0.200	0.0	150.00000	0.17	0.0	0.01
20 - 21	TR	225	1.1	0.200	0.0	149.99999	0.17	0.0	0.01
21 - 22	TR	100	1.1	0.200	0.0	150.00000	0.17	0.0	0.00
22 - 23	TR	278	1.1	0.200	0.0	149.99999	0.17	0.0	0.01
23 - 24	TR	194	1.1	0.200	0.0	150.00001	0.17	0.0	0.00
24 - 25	PL	433	1.1	0.200	0.0	45.00000	0.05	0.0	0.00
25 - 26	PL	193	1.1	0.200	0.0	44.99999	0.05	0.0	0.00
26 - 27	PL	221	1.1	0.200	0.0	45.00000	0.05	0.0	0.00
27 - 28	PL	200	1.1	0.200	0.0	45.00000	0.05	0.0	0.00
28 - 29	PL	110	1.1	0.200	0.0	45.00002	0.05	0.0	0.00
29 - 30	PL	407	1.1	0.200	0.0	44.99999	0.05	0.0	0.00
30 - 31	PL	35	1.1	0.200	0.0	45.00002	0.05	0.0	0.00
31 - 32	PL	35	1.1	0.200	0.0	44.99999	0.05	0.0	0.00
32 - 33	PL	118	1.1	0.200	0.0	44.99999	0.05	0.0	0.00
33 - 34		89	1.1	0.200	0.0	0.00000	0.00	0.0	0.00

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ADD_TAVO SIM_2A

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34 - 35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35 - 36		126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
36 - 37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37 - 38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38 - 39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39 - 40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40 - 41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41 - 42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42 - 43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43 - 44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44 - 45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45 - 46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46 - 47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47 - 48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48 - 49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49 - 50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50 - 51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51 - 52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53 - 54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54 - 55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55 - 56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56 - 57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57 - 58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58 - 59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59 - 60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34 - 61		294	0.9	0.200	0.0	0.00000	0.00		-0.0	-0.00
61 - 62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62 - 63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52 - 53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63 - 64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_2A

 * RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.39	146.99	0.00	
3	-15.00000	143.05	3.93	146.98	0.00	
4	0.00000	140.20	6.75	146.95	0.00	
5	0.00000	137.20	9.73	146.93	0.00	
6	-30.00000	132.40	14.50	146.90	0.00	
7	0.00000	132.30	14.60	146.90	0.00	
8	0.00000	132.20	14.70	146.90	0.00	
9	0.00000	132.20	14.69	146.89	0.00	
10	0.00000	130.95	15.93	146.88	0.00	
11	0.00000	129.30	17.56	146.86	0.00	
12	0.00000	126.20	20.66	146.86	0.00	
13	0.00000	127.20	19.65	146.85	0.00	
14	0.00000	123.20	23.63	146.83	0.00	
15	0.00000	123.55	23.27	146.82	0.00	
16	-30.00000	123.50	23.31	146.81	0.00	
17	0.00000	118.20	28.58	146.78	0.00	
18	-60.00000	109.60	37.16	146.76	0.00	
19	0.00000	109.60	37.16	146.76	0.00	
20	0.00000	105.00	41.75	146.75	0.00	
21	0.00000	104.90	41.85	146.75	0.00	
22	0.00000	102.60	44.14	146.74	0.00	
23	0.00000	101.65	45.09	146.74	0.00	
24	-105.00000	101.15	45.58	146.73	0.00	
25	0.00000	95.10	51.63	146.73	0.00	
26	0.00000	91.70	55.03	146.73	0.00	
27	0.00000	91.95	54.78	146.73	0.00	
28	0.00000	90.75	55.98	146.73	0.00	
29	0.00000	89.00	57.73	146.73	0.00	
30	0.00000	86.70	60.03	146.73	0.00	
31	0.00000	84.40	62.33	146.73	0.00	
32	0.00000	86.30	60.43	146.73	0.00	
33	-45.00000	84.70	62.03	146.73	0.00	
34	0.00000	84.05	62.68	146.73	0.00	^
35	0.00000	83.75	62.98	146.73	0.00	
36	0.00000	83.45	63.28	146.73	0.00	
37	0.00000	81.40	65.33	146.73	0.00	
38	0.00000	74.80	71.93	146.73	0.00	
39	0.00000	73.45	73.28	146.73	0.00	
40	0.00000	73.45	73.28	146.73	0.00	
41	0.00000	72.55	74.18	146.73	0.00	
42	0.00000	73.65	73.08	146.73	0.00	
43	0.00000	73.65	73.08	146.73	0.00	
44	0.00000	71.25	75.48	146.73	0.00	
45	0.00000	69.10	77.63	146.73	0.00	
46	0.00000	65.55	81.18	146.73	0.00	
47	0.00000	61.45	85.28	146.73	0.00	
48	0.00000	63.45	83.28	146.73	0.00	
49	0.00000	66.60	80.13	146.73	0.00	
50	0.00000	67.10	79.63	146.73	0.00	

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ADD_TAVO SIM_2A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.28	146.73	0.00	
52	0.00000	67.30	79.43	146.73	0.00	
53	0.00000	66.55	80.18	146.73	0.00	
54	0.00000	66.95	79.78	146.73	0.00	
55	0.00000	63.65	83.08	146.73	0.00	
56	0.00000	63.45	83.28	146.73	0.00	
57	0.00000	62.85	83.88	146.73	0.00	
58	0.00000	62.05	84.68	146.73	0.00	m
59	0.00000	62.10	84.63	146.73	0.00	
60	0.00000	61.15	85.58	146.73	0.00	
61	0.00000	92.75	53.98	146.73	0.00	
62	0.00000	103.65	43.08	146.73	0.00	
63	0.00000	125.30	21.43	146.73	0.00	
64	0.00000	125.30	21.43	146.73	0.00	
33q34	0.00000	84.70	62.03	146.73	0.00	
34q61	0.00000	84.05	62.68	146.73	0.00	^
35q36	0.00000	83.75	62.98	146.73	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-284.99999

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 2 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	142.49999	0.16		0.0	0.00
2	-	3	TR	164	1.1	0.200	0.0	142.50000	0.16	M	0.0	0.00
3	-	4	TR	406	1.1	0.200	0.0	134.99999	0.15		0.0	0.01
4	-	5	TR	170	1.1	0.200	0.0	135.00000	0.15		0.0	0.00
5	-	6	TR	437	1.1	0.200	0.0	134.99999	0.15		0.0	0.01
6	-	7	PL	56	1.1	0.200	0.0	120.00000	0.14		0.0	0.00
7	-	8	PL	31	1.1	0.200	0.0	119.99999	0.14		0.0	0.00
8	-	9	PL	132	1.1	0.200	0.0	120.00000	0.14		0.0	0.00
9	-	10	PL	258	1.1	0.200	0.0	119.99999	0.14		0.0	0.00
10	-	11	PL	198	1.1	0.200	0.0	120.00000	0.14		0.0	0.00
11	-	12	PL	90	1.1	0.200	0.0	120.00000	0.14		0.0	0.00
12	-	13	PL	85	1.1	0.200	0.0	120.00000	0.14		0.0	0.00
13	-	14	PL	410	1.1	0.200	0.0	120.00001	0.14		0.0	0.01
14	-	15	PL	225	1.1	0.200	0.0	120.00000	0.14		0.0	0.00
15	-	16	PL	202	1.1	0.200	0.0	120.00000	0.14		0.0	0.00
16	-	17	PL	555	1.1	0.200	0.0	105.00001	0.12		0.0	0.01
17	-	18	PL	475	1.1	0.200	0.0	105.00000	0.12		0.0	0.01
18	-	19	PL	47	1.1	0.200	0.0	75.00000	0.08		0.0	0.00
19	-	20	PL	283	1.1	0.200	0.0	75.00000	0.08		0.0	0.00
20	-	21	PL	225	1.1	0.200	0.0	74.99999	0.08		0.0	0.00
21	-	22	PL	100	1.1	0.200	0.0	75.00000	0.08		0.0	0.00
22	-	23	PL	278	1.1	0.200	0.0	74.99998	0.08		0.0	0.00
23	-	24	PL	194	1.1	0.200	0.0	75.00001	0.08		0.0	0.00
24	-	25	PL	433	1.1	0.200	0.0	22.50000	0.03		0.0	0.00
25	-	26	PL	193	1.1	0.200	0.0	22.49999	0.03		0.0	0.00
26	-	27	PL	221	1.1	0.200	0.0	22.50000	0.03		0.0	0.00
27	-	28	PL	200	1.1	0.200	0.0	22.50000	0.03		0.0	0.00
28	-	29	PL	110	1.1	0.200	0.0	22.50002	0.03		0.0	0.00
29	-	30	PL	407	1.1	0.200	0.0	22.49999	0.03		0.0	0.00
30	-	31	PL	35	1.1	0.200	0.0	22.50002	0.03		0.0	0.00
31	-	32	PL	35	1.1	0.200	0.0	22.49998	0.03		0.0	0.00
32	-	33	PL	118	1.1	0.200	0.0	22.49999	0.03		0.0	0.00
33	-	34		89	1.1	0.200	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_2A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35	-	36		126	0.6	0.200	-2831.8	0.00000	0.00		0.0	0.00
36	-	37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37	-	38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38	-	39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39	-	40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40	-	41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42	-	43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43	-	44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44	-	45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45	-	46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46	-	47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48	-	49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49	-	50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50	-	51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51	-	52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53	-	54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55	-	56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58	-	59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34	-	61		294	0.9	0.200	0.0	0.00000	0.00		-0.0	-0.00
61	-	62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62	-	63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52	-	53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63	-	64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

Ing. Vincenzo D'Angelo
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ADD_TAVO SIM_2A

 * RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.40	147.00	0.00	
3	-7.50000	143.05	3.94	146.99	0.00	
4	0.00000	140.20	6.79	146.99	0.00	
5	0.00000	137.20	9.78	146.98	0.00	
6	-15.00000	132.40	14.57	146.97	0.00	
7	0.00000	132.30	14.67	146.97	0.00	
8	0.00000	132.20	14.77	146.97	0.00	
9	0.00000	132.20	14.77	146.97	0.00	
10	0.00000	130.95	16.02	146.97	0.00	
11	0.00000	129.30	17.66	146.96	0.00	
12	0.00000	126.20	20.76	146.96	0.00	
13	0.00000	127.20	19.76	146.96	0.00	
14	0.00000	123.20	23.75	146.95	0.00	
15	0.00000	123.55	23.40	146.95	0.00	
16	-15.00000	123.50	23.45	146.95	0.00	
17	0.00000	118.20	28.74	146.94	0.00	
18	-30.00000	109.60	37.33	146.93	0.00	
19	0.00000	109.60	37.33	146.93	0.00	
20	0.00000	105.00	41.93	146.93	0.00	
21	0.00000	104.90	42.03	146.93	0.00	
22	0.00000	102.60	44.33	146.93	0.00	
23	0.00000	101.65	45.28	146.93	0.00	
24	-52.50000	101.15	45.78	146.93	0.00	
25	0.00000	95.10	51.83	146.93	0.00	
26	0.00000	91.70	55.23	146.93	0.00	
27	0.00000	91.95	54.98	146.93	0.00	
28	0.00000	90.75	56.18	146.93	0.00	
29	0.00000	89.00	57.93	146.93	0.00	
30	0.00000	86.70	60.23	146.93	0.00	
31	0.00000	84.40	62.53	146.93	0.00	
32	0.00000	86.30	60.63	146.93	0.00	
33	-22.50000	84.70	62.23	146.93	0.00	m
34	0.00000	84.05	62.88	146.93	0.00	^
35	0.00000	83.75	63.18	146.93	0.00	
36	0.00000	83.45	63.48	146.93	0.00	
37	0.00000	81.40	65.53	146.93	0.00	
38	0.00000	74.80	72.13	146.93	0.00	
39	0.00000	73.45	73.48	146.93	0.00	
40	0.00000	73.45	73.48	146.93	0.00	
41	0.00000	72.55	74.38	146.93	0.00	
42	0.00000	73.65	73.28	146.93	0.00	
43	0.00000	73.65	73.28	146.93	0.00	
44	0.00000	71.25	75.68	146.93	0.00	
45	0.00000	69.10	77.83	146.93	0.00	
46	0.00000	65.55	81.38	146.93	0.00	
47	0.00000	61.45	85.48	146.93	0.00	
48	0.00000	63.45	83.48	146.93	0.00	
49	0.00000	66.60	80.33	146.93	0.00	
50	0.00000	67.10	79.83	146.93	0.00	

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ADD_TAVO SIM_2A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.48	146.93	0.00	
52	0.00000	67.30	79.63	146.93	0.00	
53	0.00000	66.55	80.38	146.93	0.00	
54	0.00000	66.95	79.98	146.93	0.00	
55	0.00000	63.65	83.28	146.93	0.00	
56	0.00000	63.45	83.48	146.93	0.00	
57	0.00000	62.85	84.08	146.93	0.00	
58	0.00000	62.05	84.88	146.93	0.00	
59	0.00000	62.10	84.83	146.93	0.00	
60	0.00000	61.15	85.78	146.93	0.00	
61	0.00000	92.75	54.18	146.93	0.00	
62	0.00000	103.65	43.28	146.93	0.00	
63	0.00000	125.30	21.63	146.93	0.00	
64	0.00000	125.30	21.63	146.93	0.00	
33q34	0.00000	84.70	62.23	146.93	0.00	
34q61	0.00000	84.05	62.88	146.93	0.00	^
35q36	0.00000	83.75	63.18	146.93	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-142.49999

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 3 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	L	84	1.1	0.200	0.8	-0.00002	-0.00		-0.0	-0.00
2	-	3	L	164	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
3	-	4	L	406	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
4	-	5	L	170	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
5	-	6	L	437	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
6	-	7	L	56	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
7	-	8	L	31	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
8	-	9	L	132	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
9	-	10	L	258	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
10	-	11	L	198	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
11	-	12	L	90	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
12	-	13	L	85	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
13	-	14	L	410	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
14	-	15	L	225	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
15	-	16	L	202	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
16	-	17	L	555	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
17	-	18	L	475	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
18	-	19	L	47	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
19	-	20	L	283	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
20	-	21	L	225	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
21	-	22	L	100	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
22	-	23	L	278	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
23	-	24	L	194	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
24	-	25	L	433	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
25	-	26	L	193	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
26	-	27	L	221	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
27	-	28	L	200	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
28	-	29	L	110	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
29	-	30	L	407	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
30	-	31	L	35	1.1	0.200	0.0	0.00002	0.00	M	0.0	0.00
31	-	32	L	35	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
32	-	33	L	118	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
33	-	34		89	1.1	0.200	-941935.8	0.00000	0.00		-0.0	-0.00

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ADD_TAVO SIM_2A

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34 - 35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35 - 36		126	0.6	0.200	-2831.8	0.00000	0.00		0.0	0.00
36 - 37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37 - 38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38 - 39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39 - 40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40 - 41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41 - 42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42 - 43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43 - 44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44 - 45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45 - 46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46 - 47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47 - 48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48 - 49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49 - 50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50 - 51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51 - 52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53 - 54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54 - 55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55 - 56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56 - 57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57 - 58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58 - 59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59 - 60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34 - 61		294	0.9	0.200	0.0	0.00000	0.00		-0.0	-0.00
61 - 62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62 - 63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52 - 53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63 - 64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_2A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*m
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	^
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_2A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	
60	0.00000	61.15	85.85	147.00	0.00	
61	0.00000	92.75	54.25	147.00	0.00	
62	0.00000	103.65	43.35	147.00	0.00	
63	0.00000	125.30	21.70	147.00	0.00	
64	0.00000	125.30	21.70	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
34q61	0.00000	84.05	62.95	147.00	0.00	^
35q36	0.00000	83.75	63.25	147.00	0.00	M

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	0.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_3

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)		Altre Q Legge (l/s)
1	145.20	0.0000	0.0000	0.0000		0.0000
2	144.60	0.0000	0.0000	0.0000		0.0000
3	143.05	0.0000	0.0000	0.0000		-15.0000 1200=0
4	140.20	0.0000	0.0000	0.0000		0.0000
5	137.20	0.0000	0.0000	0.0000		0.0000
6	132.40	0.0000	0.0000	0.0000		-30.0000 1200=0
7	132.30	0.0000	0.0000	0.0000		0.0000
8	132.20	0.0000	0.0000	0.0000		0.0000
9	132.20	0.0000	0.0000	0.0000		0.0000
10	130.95	0.0000	0.0000	0.0000		0.0000
11	129.30	0.0000	0.0000	0.0000		0.0000
12	126.20	0.0000	0.0000	0.0000		0.0000
13	127.20	0.0000	0.0000	0.0000		0.0000
14	123.20	0.0000	0.0000	0.0000		0.0000
15	123.55	0.0000	0.0000	0.0000		0.0000
16	123.50	0.0000	0.0000	0.0000		-30.0000 1200=0
17	118.20	0.0000	0.0000	0.0000		0.0000
18	109.60	0.0000	0.0000	0.0000		-60.0000 1200=0
19	109.60	0.0000	0.0000	0.0000		0.0000
20	105.00	0.0000	0.0000	0.0000		0.0000
21	104.90	0.0000	0.0000	0.0000		0.0000
22	102.60	0.0000	0.0000	0.0000		0.0000
23	101.65	0.0000	0.0000	0.0000		0.0000
24	101.15	0.0000	0.0000	0.0000		-105.0000 1200=0
25	95.10	0.0000	0.0000	0.0000		0.0000
26	91.70	0.0000	0.0000	0.0000		0.0000
27	91.95	0.0000	0.0000	0.0000		0.0000
28	90.75	0.0000	0.0000	0.0000		0.0000
29	89.00	0.0000	0.0000	0.0000		0.0000
30	86.70	0.0000	0.0000	0.0000		0.0000
31	84.40	0.0000	0.0000	0.0000		0.0000
32	86.30	0.0000	0.0000	0.0000		0.0000
33	84.70	0.0000	0.0000	0.0000		-45.0000 1200=0
34	84.05	0.0000	0.0000	0.0000		0.0000
35	83.75	0.0000	0.0000	0.0000		0.0000
36	83.45	0.0000	0.0000	0.0000		0.0000
37	81.40	0.0000	0.0000	0.0000		0.0000
38	74.80	0.0000	0.0000	0.0000		0.0000
39	73.45	0.0000	0.0000	0.0000		0.0000
40	73.45	0.0000	0.0000	0.0000		0.0000
41	72.55	0.0000	0.0000	0.0000		0.0000
42	73.65	0.0000	0.0000	-45.0000	Q=0	0.0000
43	73.65	0.0000	0.0000	0.0000		0.0000
44	71.25	0.0000	0.0000	0.0000		0.0000
45	69.10	0.0000	0.0000	0.0000		0.0000
46	65.55	0.0000	0.0000	0.0000		0.0000
47	61.45	0.0000	0.0000	0.0000		0.0000

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DESCRIZIONE DEI NODI

Nodo	Quota	Q civ. Legge	Q ind. Legge	Q art. Legge	Altre Q Legge
	(m)	(l/s)	(l/s)	(l/s)	(l/s)
48	63.45	0.0000	0.0000	0.0000	0.0000
49	66.60	0.0000	0.0000	0.0000	0.0000
50	67.10	0.0000	0.0000	0.0000	0.0000
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 Q=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 Q=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 Q=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 1000=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 1000=0	0.0000	0.0000

Legge di variazione delle portate

1000=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

1200=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	35	43.08	0.630	0.00008	10.00
35	36	125.59	0.630	0.00008	10.00
36	37	176.54	0.630	0.00008	10.00
37	38	887.29	0.630	0.00008	10.00
38	39	99.98	0.630	0.00008	10.00
39	40	125.55	0.630	0.00008	10.00
40	41	171.03	0.630	0.00008	10.00
41	42	144.43	0.630	0.00008	10.00
42	43	89.03	0.630	0.00008	10.00
43	44	190.00	0.630	0.00008	10.00
44	45	208.88	0.630	0.00008	10.00
45	46	190.69	0.630	0.00008	10.00
46	47	107.21	0.630	0.00008	10.00
47	48	39.67	0.630	0.00008	10.00
48	49	62.18	0.630	0.00008	10.00
49	50	176.26	0.630	0.00008	10.00
50	51	163.09	0.630	0.00008	10.00
51	52	159.24	0.630	0.00008	10.00
53	54	106.41	0.630	0.00008	10.00
54	55	129.12	0.630	0.00008	10.00
55	56	169.79	0.630	0.00008	10.00
56	57	88.86	0.630	0.00008	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
57	58	55.15	0.630	0.00008	10.00
58	59	47.17	0.630	0.00008	10.00
59	60	92.41	0.630	0.00008	10.00
34	61	293.98	0.920	0.00008	6.00
61	62	517.89	0.920	0.00008	6.00
62	63	214.84	0.920	0.00008	6.00
52	53	142.38	0.630	0.00008	10.00
63	64	55.60	0.920	0.00008	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	1769.99997	2.01	M	4.2	0.36
2	-	3	TR	164	1.1	0.080	0.0	1769.99992	2.01		2.4	0.39
3	-	4	TR	406	1.1	0.080	0.0	1755.00002	1.99		2.3	0.95
4	-	5	TR	170	1.1	0.080	0.0	1754.99997	1.99		2.3	0.40
5	-	6	TR	437	1.1	0.080	0.0	1755.00001	1.99		2.3	1.02
6	-	7	TR	56	1.1	0.080	0.0	1724.99997	1.95		2.3	0.13
7	-	8	TR	31	1.1	0.080	0.0	1724.99999	1.95		2.3	0.07
8	-	9	TR	132	1.1	0.080	0.0	1725.00002	1.95		2.3	0.30
9	-	10	TR	258	1.1	0.080	0.0	1725.00004	1.95		2.3	0.58
10	-	11	TR	198	1.1	0.080	0.0	1724.99996	1.95		2.3	0.45
11	-	12	TR	90	1.1	0.080	0.0	1724.99999	1.95		2.3	0.20
12	-	13	TR	85	1.1	0.080	0.0	1724.99995	1.95		2.3	0.19
13	-	14	TR	410	1.1	0.080	0.0	1724.99995	1.95		2.3	0.93
14	-	15	TR	225	1.1	0.080	0.0	1724.99999	1.95		2.3	0.51
15	-	16	TR	202	1.1	0.080	0.0	1725.00000	1.95		2.3	0.46
16	-	17	TR	555	1.1	0.080	0.0	1694.99999	1.92		2.2	1.22
17	-	18	TR	475	1.1	0.080	0.0	1694.99997	1.92		2.2	1.04
18	-	19	TR	47	1.1	0.080	0.0	1635.00001	1.85		2.0	0.10
19	-	20	TR	283	1.1	0.080	0.0	1634.99995	1.85		2.0	0.58
20	-	21	TR	225	1.1	0.080	0.0	1634.99996	1.85		2.0	0.46
21	-	22	TR	100	1.1	0.080	0.0	1635.00001	1.85		2.0	0.20
22	-	23	TR	278	1.1	0.080	0.0	1635.00002	1.85		2.0	0.57
23	-	24	TR	194	1.1	0.080	0.0	1635.00001	1.85		2.0	0.40
24	-	25	TR	433	1.1	0.080	0.0	1529.99996	1.73		1.8	0.78
25	-	26	TR	193	1.1	0.080	0.0	1529.99997	1.73		1.8	0.35
26	-	27	TR	221	1.1	0.080	0.0	1530.00000	1.73		1.8	0.40
27	-	28	TR	200	1.1	0.080	0.0	1530.00002	1.73		1.8	0.36
28	-	29	TR	110	1.1	0.080	0.0	1529.99997	1.73		1.8	0.20
29	-	30	TR	407	1.1	0.080	0.0	1529.99998	1.73		1.8	0.73
30	-	31	TR	35	1.1	0.080	0.0	1530.00004	1.73		1.8	0.06
31	-	32	TR	35	1.1	0.080	0.0	1530.00001	1.73		1.8	0.06
32	-	33	TR	118	1.1	0.080	0.0	1529.99996	1.73		1.8	0.21
33	Q	34		89	1.1	0.080	1.1	1485.00001	1.68		3.4	0.30

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ADD_TAVO SIM_3

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49		2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88	m	0.9	0.08
34	Q	61		294	0.9	0.080	1.4	1020.00000	1.53		2.3	0.67
61	-	62	TR	518	0.9	0.080	0.0	1019.99998	1.53		1.7	0.87
62	-	63	TR	215	0.9	0.080	0.0	1019.99999	1.53		1.7	0.36
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29
63	-	64	TR	56	0.9	0.080	0.0	959.99997	1.44		1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.04	146.64	0.00	
3	-15.00000	143.05	3.20	146.25	0.00	
4	0.00000	140.20	5.10	145.30	0.00	
5	0.00000	137.20	7.70	144.90	0.00	
6	-30.00000	132.40	11.48	143.88	0.00	
7	0.00000	132.30	11.45	143.75	0.00	
8	0.00000	132.20	11.48	143.68	0.00	
9	0.00000	132.20	11.18	143.38	0.00	
10	0.00000	130.95	11.85	142.80	0.00	
11	0.00000	129.30	13.05	142.35	0.00	
12	0.00000	126.20	15.94	142.14	0.00	
13	0.00000	127.20	14.75	141.95	0.00	
14	0.00000	123.20	17.82	141.02	0.00	
15	0.00000	123.55	16.97	140.52	0.00	
16	-30.00000	123.50	16.56	140.06	0.00	
17	0.00000	118.20	20.64	138.84	0.00	
18	-60.00000	109.60	28.20	137.80	0.00	
19	0.00000	109.60	28.10	137.70	0.00	
20	0.00000	105.00	32.13	137.13	0.00	
21	0.00000	104.90	31.77	136.67	0.00	
22	0.00000	102.60	33.86	136.46	0.00	
23	0.00000	101.65	34.24	135.89	0.00	
24	-105.00000	101.15	34.35	135.50	0.00	
25	0.00000	95.10	39.62	134.72	0.00	
26	0.00000	91.70	42.67	134.37	0.00	
27	0.00000	91.95	42.03	133.98	0.00	
28	0.00000	90.75	42.87	133.62	0.00	
29	0.00000	89.00	44.42	133.42	0.00	
30	0.00000	86.70	45.99	132.69	0.00	
31	0.00000	84.40	48.23	132.63	0.00	
32	0.00000	86.30	46.26	132.56	0.00	
33	-45.00000	84.70	47.65	132.35	0.00	
34	0.00000	84.05	48.00	132.05	0.00	
35	0.00000	83.75	48.19	131.94	0.00	
36	0.00000	83.45	48.10	131.55	0.00	
37	0.00000	81.40	49.70	131.10	0.00	
38	0.00000	74.80	54.08	128.88	0.00	
39	0.00000	73.45	55.18	128.63	0.00	
40	0.00000	73.45	54.87	128.32	0.00	
41	0.00000	72.55	55.34	127.89	0.00	
42	-45.00000	73.65	53.88	127.53	0.00	
43	0.00000	73.65	53.70	127.35	0.00	
44	0.00000	71.25	55.71	126.96	0.00	
45	0.00000	69.10	57.43	126.53	0.00	
46	0.00000	65.55	60.58	126.13	0.00	
47	0.00000	61.45	64.46	125.91	0.00	
48	0.00000	63.45	62.38	125.83	0.00	
49	0.00000	66.60	59.10	125.70	0.00	
50	0.00000	67.10	58.24	125.34	0.00	

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	58.55	125.00	0.00	
52	0.00000	67.30	57.38	124.68	0.00	
53	-100.00000	66.55	57.83	124.38	0.00	
54	0.00000	66.95	57.30	124.25	0.00	
55	0.00000	63.65	60.44	124.09	0.00	
56	0.00000	63.45	60.44	123.89	0.00	
57	0.00000	62.85	60.93	123.78	0.00	
58	0.00000	62.05	61.66	123.71	0.00	
59	-45.00000	62.10	61.55	123.65	0.00	
60	-275.00000	61.15	62.42	123.57	0.00	m
61	0.00000	92.75	38.63	131.38	0.00	
62	0.00000	103.65	26.86	130.51	0.00	
63	-60.00000	125.30	4.85	130.15	0.00	
64	-960.00000	125.30	4.76	130.06	0.00	
33q34	0.00000	84.70	47.50	132.20	0.00	
34q61	0.00000	84.05	47.82	131.87	0.00	
35q36	0.00000	83.75	48.11	131.86	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1769.99997

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 1 h 0 min

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1 - 2	TR	84	1.1	0.080	0.8	465.00001	0.53	0.3	0.03
2 - 3	TR	164	1.1	0.080	0.0	465.00001	0.53	0.2	0.03
3 - 4	TR	406	1.1	0.080	0.0	465.00001	0.53	0.2	0.08
4 - 5	TR	170	1.1	0.080	0.0	465.00001	0.53	0.2	0.03
5 - 6	TR	437	1.1	0.080	0.0	465.00001	0.53	0.2	0.08
6 - 7	TR	56	1.1	0.080	0.0	465.00001	0.53	0.2	0.01
7 - 8	TR	31	1.1	0.080	0.0	465.00001	0.53	0.2	0.01
8 - 9	TR	132	1.1	0.080	0.0	465.00001	0.53	0.2	0.02
9 - 10	TR	258	1.1	0.080	0.0	465.00001	0.53	0.2	0.05
10 - 11	TR	198	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
11 - 12	TR	90	1.1	0.080	0.0	465.00001	0.53	0.2	0.02
12 - 13	TR	85	1.1	0.080	0.0	465.00001	0.53	0.2	0.02
13 - 14	TR	410	1.1	0.080	0.0	465.00001	0.53	0.2	0.08
14 - 15	TR	225	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
15 - 16	TR	202	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
16 - 17	TR	555	1.1	0.080	0.0	465.00001	0.53	0.2	0.10
17 - 18	TR	475	1.1	0.080	0.0	465.00001	0.53	0.2	0.09
18 - 19	TR	47	1.1	0.080	0.0	465.00001	0.53	0.2	0.01
19 - 20	TR	283	1.1	0.080	0.0	465.00001	0.53	0.2	0.05
20 - 21	TR	225	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
21 - 22	TR	100	1.1	0.080	0.0	465.00001	0.53	0.2	0.02
22 - 23	TR	278	1.1	0.080	0.0	465.00001	0.53	0.2	0.05
23 - 24	TR	194	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
24 - 25	TR	433	1.1	0.080	0.0	465.00001	0.53	0.2	0.08
25 - 26	TR	193	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
26 - 27	TR	221	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
27 - 28	TR	200	1.1	0.080	0.0	465.00001	0.53	0.2	0.04
28 - 29	TR	110	1.1	0.080	0.0	465.00001	0.53	0.2	0.02
29 - 30	TR	407	1.1	0.080	0.0	465.00001	0.53	0.2	0.08
30 - 31	TR	35	1.1	0.080	0.0	465.00001	0.53	0.2	0.01
31 - 32	TR	35	1.1	0.080	0.0	465.00001	0.53	0.2	0.01
32 - 33	TR	118	1.1	0.080	0.0	465.00001	0.53	0.2	0.02
33 - 34		89	1.1	0.080	1.1	465.00001	0.53	0.4	0.03

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ADD_TAVO SIM_3

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49	M	2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88		0.9	0.08
34	-	61		294	0.9	0.080	0.0	0.00000	0.00	m	0.0	0.00
61	-	62	L	518	0.9	0.080	0.0	0.00000	0.00		0.0	0.00
62	-	63	L	215	0.9	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29
63	-	64	L	56	0.9	0.080	0.0	0.00001	0.00		0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.37	146.97	0.00	
3	0.00000	143.05	3.89	146.94	0.00	
4	0.00000	140.20	6.67	146.87	0.00	
5	0.00000	137.20	9.64	146.84	0.00	
6	0.00000	132.40	14.35	146.75	0.00	
7	0.00000	132.30	14.44	146.74	0.00	
8	0.00000	132.20	14.54	146.74	0.00	
9	0.00000	132.20	14.51	146.71	0.00	
10	0.00000	130.95	15.72	146.67	0.00	
11	0.00000	129.30	17.33	146.63	0.00	
12	0.00000	126.20	20.41	146.61	0.00	
13	0.00000	127.20	19.40	146.60	0.00	
14	0.00000	123.20	23.32	146.52	0.00	
15	0.00000	123.55	22.93	146.48	0.00	
16	0.00000	123.50	22.94	146.44	0.00	
17	0.00000	118.20	28.14	146.34	0.00	
18	0.00000	109.60	36.65	146.25	0.00	
19	0.00000	109.60	36.64	146.24	0.00	
20	0.00000	105.00	41.19	146.19	0.00	
21	0.00000	104.90	41.24	146.14	0.00	
22	0.00000	102.60	43.53	146.13	0.00	
23	0.00000	101.65	44.42	146.07	0.00	
24	0.00000	101.15	44.89	146.04	0.00	
25	0.00000	95.10	50.86	145.96	0.00	
26	0.00000	91.70	54.22	145.92	0.00	
27	0.00000	91.95	53.93	145.88	0.00	
28	0.00000	90.75	55.09	145.84	0.00	
29	0.00000	89.00	56.82	145.82	0.00	
30	0.00000	86.70	59.05	145.75	0.00	
31	0.00000	84.40	61.34	145.74	0.00	
32	0.00000	86.30	59.43	145.73	0.00	
33	0.00000	84.70	61.01	145.71	0.00	
34	0.00000	84.05	61.63	145.68	0.00	^
35	0.00000	83.75	61.82	145.57	0.00	
36	0.00000	83.45	61.73	145.18	0.00	
37	0.00000	81.40	63.34	144.74	0.00	
38	0.00000	74.80	67.72	142.52	0.00	
39	0.00000	73.45	68.82	142.27	0.00	
40	0.00000	73.45	68.50	141.95	0.00	
41	0.00000	72.55	68.97	141.52	0.00	
42	-45.00000	73.65	67.51	141.16	0.00	
43	0.00000	73.65	67.33	140.98	0.00	
44	0.00000	71.25	69.34	140.59	0.00	
45	0.00000	69.10	71.06	140.16	0.00	
46	0.00000	65.55	74.22	139.77	0.00	
47	0.00000	61.45	78.09	139.54	0.00	
48	0.00000	63.45	76.01	139.46	0.00	
49	0.00000	66.60	72.74	139.34	0.00	
50	0.00000	67.10	71.87	138.97	0.00	

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	72.19	138.64	0.00	
52	0.00000	67.30	71.01	138.31	0.00	
53	-100.00000	66.55	71.47	138.02	0.00	
54	0.00000	66.95	70.94	137.89	0.00	
55	0.00000	63.65	74.08	137.73	0.00	
56	0.00000	63.45	74.07	137.52	0.00	
57	0.00000	62.85	74.56	137.41	0.00	
58	0.00000	62.05	75.29	137.34	0.00	
59	-45.00000	62.10	75.19	137.29	0.00	
60	-275.00000	61.15	76.05	137.20	0.00	m
61	0.00000	92.75	52.93	145.68	0.00	
62	0.00000	103.65	42.03	145.68	0.00	
63	0.00000	125.30	20.38	145.68	0.00	
64	0.00000	125.30	20.38	145.68	0.00	
33q34	0.00000	84.70	61.00	145.70	0.00	
34q61	0.00000	84.05	61.63	145.68	0.00	^
35q36	0.00000	83.75	61.74	145.49	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-465.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

T = 2 h 0 min

* RISULTATI DI RAMO *

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Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	PL	84	1.1	0.080	0.8	232.50001	0.26	0.1	0.01
2	-	3	PL	164	1.1	0.080	0.0	232.50002	0.26	0.1	0.01
3	-	4	PL	406	1.1	0.080	0.0	232.50000	0.26	0.1	0.02
4	-	5	PL	170	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
5	-	6	PL	437	1.1	0.080	0.0	232.50000	0.26	0.1	0.02
6	-	7	PL	56	1.1	0.080	0.0	232.50001	0.26	0.1	0.00
7	-	8	PL	31	1.1	0.080	0.0	232.50001	0.26	0.1	0.00
8	-	9	PL	132	1.1	0.080	0.0	232.50000	0.26	0.1	0.01
9	-	10	PL	258	1.1	0.080	0.0	232.50000	0.26	0.1	0.01
10	-	11	PL	198	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
11	-	12	PL	90	1.1	0.080	0.0	232.50001	0.26	0.1	0.00
12	-	13	PL	85	1.1	0.080	0.0	232.50001	0.26	0.1	0.00
13	-	14	PL	410	1.1	0.080	0.0	232.50001	0.26	0.1	0.02
14	-	15	PL	225	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
15	-	16	PL	202	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
16	-	17	PL	555	1.1	0.080	0.0	232.50001	0.26	0.1	0.03
17	-	18	PL	475	1.1	0.080	0.0	232.50001	0.26	0.1	0.02
18	-	19	PL	47	1.1	0.080	0.0	232.50000	0.26	0.1	0.00
19	-	20	PL	283	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
20	-	21	PL	225	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
21	-	22	PL	100	1.1	0.080	0.0	232.50000	0.26	0.1	0.01
22	-	23	PL	278	1.1	0.080	0.0	232.50000	0.26	0.1	0.01
23	-	24	PL	194	1.1	0.080	0.0	232.50000	0.26	0.1	0.01
24	-	25	PL	433	1.1	0.080	0.0	232.50001	0.26	0.1	0.02
25	-	26	PL	193	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
26	-	27	PL	221	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
27	-	28	PL	200	1.1	0.080	0.0	232.50000	0.26	0.1	0.01
28	-	29	PL	110	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
29	-	30	PL	407	1.1	0.080	0.0	232.50001	0.26	0.1	0.02
30	-	31	PL	35	1.1	0.080	0.0	232.50000	0.26	0.1	0.00
31	-	32	PL	35	1.1	0.080	0.0	232.50000	0.26	0.1	0.00
32	-	33	PL	118	1.1	0.080	0.0	232.50001	0.26	0.1	0.01
33	-	34		89	1.1	0.080	1.1	232.50000	0.26	0.1	0.01

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ADD_TAVO SIM_3

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34 - 35	TR	43	0.6	0.080	0.0	232.50001	0.75		0.7	0.03
35 - 36		126	0.6	0.080	0.7	232.50001	0.75		0.8	0.10
36 - 37	TR	177	0.6	0.080	0.0	232.50000	0.75		0.7	0.12
37 - 38	TR	887	0.6	0.080	0.0	232.50001	0.75	M	0.7	0.59
38 - 39	TR	100	0.6	0.080	0.0	232.50001	0.75		0.7	0.07
39 - 40	TR	126	0.6	0.080	0.0	232.50001	0.75		0.7	0.08
40 - 41	TR	171	0.6	0.080	0.0	232.50001	0.75		0.7	0.11
41 - 42	TR	144	0.6	0.080	0.0	232.50001	0.75		0.7	0.10
42 - 43	TR	89	0.6	0.080	0.0	210.00001	0.67		0.6	0.05
43 - 44	TR	190	0.6	0.080	0.0	210.00000	0.67		0.6	0.10
44 - 45	TR	209	0.6	0.080	0.0	210.00000	0.67		0.6	0.12
45 - 46	TR	191	0.6	0.080	0.0	210.00000	0.67		0.6	0.11
46 - 47	TR	107	0.6	0.080	0.0	210.00001	0.67		0.6	0.06
47 - 48	TR	40	0.6	0.080	0.0	210.00001	0.67		0.6	0.02
48 - 49	TR	62	0.6	0.080	0.0	210.00001	0.67		0.6	0.03
49 - 50	TR	176	0.6	0.080	0.0	210.00000	0.67		0.6	0.10
50 - 51	TR	163	0.6	0.080	0.0	210.00000	0.67		0.6	0.09
51 - 52	TR	159	0.6	0.080	0.0	210.00001	0.67		0.6	0.09
53 - 54	TR	106	0.6	0.080	0.0	160.00000	0.51		0.3	0.04
54 - 55	TR	129	0.6	0.080	0.0	160.00000	0.51		0.3	0.04
55 - 56	TR	170	0.6	0.080	0.0	160.00000	0.51		0.3	0.06
56 - 57	TR	89	0.6	0.080	0.0	160.00000	0.51		0.3	0.03
57 - 58	TR	55	0.6	0.080	0.0	160.00000	0.51		0.3	0.02
58 - 59	TR	47	0.6	0.080	0.0	160.00000	0.51		0.3	0.02
59 - 60	TR	92	0.6	0.080	0.0	137.50000	0.44		0.2	0.02
34 - 61		294	0.9	0.080	0.0	0.00000	0.00	m	0.0	0.00
61 - 62	L	518	0.9	0.080	0.0	0.00000	0.00		0.0	0.00
62 - 63	L	215	0.9	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
52 - 53	TR	142	0.6	0.080	0.0	210.00001	0.67		0.6	0.08
63 - 64	L	56	0.9	0.080	0.0	0.00001	0.00		0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.39	146.99	0.00	
3	0.00000	143.05	3.93	146.98	0.00	
4	0.00000	140.20	6.76	146.96	0.00	
5	0.00000	137.20	9.75	146.95	0.00	
6	0.00000	132.40	14.53	146.93	0.00	
7	0.00000	132.30	14.63	146.93	0.00	
8	0.00000	132.20	14.73	146.93	0.00	
9	0.00000	132.20	14.72	146.92	0.00	
10	0.00000	130.95	15.96	146.91	0.00	
11	0.00000	129.30	17.60	146.90	0.00	
12	0.00000	126.20	20.69	146.89	0.00	
13	0.00000	127.20	19.69	146.89	0.00	
14	0.00000	123.20	23.67	146.87	0.00	
15	0.00000	123.55	23.31	146.86	0.00	
16	0.00000	123.50	23.35	146.85	0.00	
17	0.00000	118.20	28.62	146.82	0.00	
18	0.00000	109.60	37.19	146.79	0.00	
19	0.00000	109.60	37.19	146.79	0.00	
20	0.00000	105.00	41.78	146.78	0.00	
21	0.00000	104.90	41.86	146.76	0.00	
22	0.00000	102.60	44.16	146.76	0.00	
23	0.00000	101.65	45.09	146.74	0.00	
24	0.00000	101.15	45.59	146.74	0.00	
25	0.00000	95.10	51.61	146.71	0.00	
26	0.00000	91.70	55.00	146.70	0.00	
27	0.00000	91.95	54.74	146.69	0.00	
28	0.00000	90.75	55.93	146.68	0.00	
29	0.00000	89.00	57.68	146.68	0.00	
30	0.00000	86.70	59.95	146.65	0.00	
31	0.00000	84.40	62.25	146.65	0.00	
32	0.00000	86.30	60.35	146.65	0.00	
33	0.00000	84.70	61.94	146.64	0.00	
34	0.00000	84.05	62.59	146.64	0.00	^
35	0.00000	83.75	62.86	146.61	0.00	
36	0.00000	83.45	63.05	146.50	0.00	
37	0.00000	81.40	64.99	146.39	0.00	
38	0.00000	74.80	70.99	145.79	0.00	
39	0.00000	73.45	72.28	145.73	0.00	
40	0.00000	73.45	72.19	145.64	0.00	
41	0.00000	72.55	72.98	145.53	0.00	
42	-22.50000	73.65	71.78	145.43	0.00	
43	0.00000	73.65	71.73	145.38	0.00	
44	0.00000	71.25	74.03	145.28	0.00	
45	0.00000	69.10	76.06	145.16	0.00	
46	0.00000	65.55	79.51	145.06	0.00	
47	0.00000	61.45	83.55	145.00	0.00	
48	0.00000	63.45	81.53	144.98	0.00	
49	0.00000	66.60	78.34	144.94	0.00	
50	0.00000	67.10	77.75	144.85	0.00	

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	78.31	144.76	0.00	
52	0.00000	67.30	77.37	144.67	0.00	
53	-50.00000	66.55	78.04	144.59	0.00	
54	0.00000	66.95	77.60	144.55	0.00	
55	0.00000	63.65	80.86	144.51	0.00	
56	0.00000	63.45	81.01	144.46	0.00	
57	0.00000	62.85	81.58	144.43	0.00	
58	0.00000	62.05	82.36	144.41	0.00	
59	-22.50000	62.10	82.29	144.39	0.00	
60	-137.50000	61.15	83.22	144.37	0.00	m
61	0.00000	92.75	53.89	146.64	0.00	
62	0.00000	103.65	42.99	146.64	0.00	
63	0.00000	125.30	21.34	146.64	0.00	
64	0.00000	125.30	21.34	146.64	0.00	
33q34	0.00000	84.70	61.94	146.64	0.00	
34q61	0.00000	84.05	62.59	146.64	0.00	^
35q36	0.00000	83.75	62.84	146.59	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-232.50001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 3 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1 - 2	L	84	1.1	0.080	0.8	0.00001	0.00		0.0	0.00
2 - 3	L	164	1.1	0.080	0.0	0.00002	0.00	M	0.0	0.00
3 - 4	L	406	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
4 - 5	L	170	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
5 - 6	L	437	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
6 - 7	L	56	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
7 - 8	L	31	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
8 - 9	L	132	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
9 - 10	L	258	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00
10 - 11	L	198	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
11 - 12	L	90	1.1	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
12 - 13	L	85	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
13 - 14	L	410	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
14 - 15	L	225	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
15 - 16	L	202	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
16 - 17	L	555	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
17 - 18	L	475	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
18 - 19	L	47	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
19 - 20	L	283	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
20 - 21	L	225	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
21 - 22	L	100	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
22 - 23	L	278	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
23 - 24	L	194	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
24 - 25	L	433	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
25 - 26	L	193	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
26 - 27	L	221	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
27 - 28	L	200	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
28 - 29	L	110	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
29 - 30	L	407	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
30 - 31	L	35	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00
31 - 32	L	35	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
32 - 33	L	118	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
33 - 34		89	1.1	0.080	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_3

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
34 - 35	L	43	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
35 - 36		126	0.6	0.080	-54167.9	0.00000	0.00	-0.0	-0.00
36 - 37	L	177	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
37 - 38	L	887	0.6	0.080	0.0	-0.00001	-0.00	-0.0	-0.00
38 - 39	L	100	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
39 - 40	L	126	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
40 - 41	L	171	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
41 - 42	L	144	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
42 - 43	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
43 - 44	L	190	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
44 - 45	L	209	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
45 - 46	L	191	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
46 - 47	L	107	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
47 - 48	L	40	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
48 - 49	L	62	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
49 - 50	L	176	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
50 - 51	L	163	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
51 - 52	L	159	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
53 - 54	L	106	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
54 - 55	L	129	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
55 - 56	L	170	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
56 - 57	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
57 - 58	L	55	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
58 - 59	L	47	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
59 - 60	L	92	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
34 - 61		294	0.9	0.080	0.0	0.00000	0.00	0.0	0.00
61 - 62	L	518	0.9	0.080	0.0	0.00000	0.00	0.0	0.00
62 - 63	L	215	0.9	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
52 - 53	L	142	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
63 - 64	L	56	0.9	0.080	0.0	0.00001	0.00	0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	M
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	^
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	
60	0.00000	61.15	85.85	147.00	0.00	
61	0.00000	92.75	54.25	147.00	0.00	
62	0.00000	103.65	43.35	147.00	0.00	
63	0.00000	125.30	21.70	147.00	0.00	m
64	0.00000	125.30	21.70	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
34q61	0.00000	84.05	62.95	147.00	0.00	^
35q36	0.00000	83.75	63.25	147.00	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-0.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_3A

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)		Altre Q Legge (l/s)
1	145.20	0.0000	0.0000	0.0000		0.0000
2	144.60	0.0000	0.0000	0.0000		0.0000
3	143.05	0.0000	0.0000	0.0000		-15.0000 1200=0
4	140.20	0.0000	0.0000	0.0000		0.0000
5	137.20	0.0000	0.0000	0.0000		0.0000
6	132.40	0.0000	0.0000	0.0000		-30.0000 1200=0
7	132.30	0.0000	0.0000	0.0000		0.0000
8	132.20	0.0000	0.0000	0.0000		0.0000
9	132.20	0.0000	0.0000	0.0000		0.0000
10	130.95	0.0000	0.0000	0.0000		0.0000
11	129.30	0.0000	0.0000	0.0000		0.0000
12	126.20	0.0000	0.0000	0.0000		0.0000
13	127.20	0.0000	0.0000	0.0000		0.0000
14	123.20	0.0000	0.0000	0.0000		0.0000
15	123.55	0.0000	0.0000	0.0000		0.0000
16	123.50	0.0000	0.0000	0.0000		-30.0000 1200=0
17	118.20	0.0000	0.0000	0.0000		0.0000
18	109.60	0.0000	0.0000	0.0000		-60.0000 1200=0
19	109.60	0.0000	0.0000	0.0000		0.0000
20	105.00	0.0000	0.0000	0.0000		0.0000
21	104.90	0.0000	0.0000	0.0000		0.0000
22	102.60	0.0000	0.0000	0.0000		0.0000
23	101.65	0.0000	0.0000	0.0000		0.0000
24	101.15	0.0000	0.0000	0.0000		-105.0000 1200=0
25	95.10	0.0000	0.0000	0.0000		0.0000
26	91.70	0.0000	0.0000	0.0000		0.0000
27	91.95	0.0000	0.0000	0.0000		0.0000
28	90.75	0.0000	0.0000	0.0000		0.0000
29	89.00	0.0000	0.0000	0.0000		0.0000
30	86.70	0.0000	0.0000	0.0000		0.0000
31	84.40	0.0000	0.0000	0.0000		0.0000
32	86.30	0.0000	0.0000	0.0000		0.0000
33	84.70	0.0000	0.0000	0.0000		-45.0000 1200=0
34	84.05	0.0000	0.0000	0.0000		0.0000
35	83.75	0.0000	0.0000	0.0000		0.0000
36	83.45	0.0000	0.0000	0.0000		0.0000
37	81.40	0.0000	0.0000	0.0000		0.0000
38	74.80	0.0000	0.0000	0.0000		0.0000
39	73.45	0.0000	0.0000	0.0000		0.0000
40	73.45	0.0000	0.0000	0.0000		0.0000
41	72.55	0.0000	0.0000	0.0000		0.0000
42	73.65	0.0000	0.0000	-45.0000	Q=0	0.0000
43	73.65	0.0000	0.0000	0.0000		0.0000
44	71.25	0.0000	0.0000	0.0000		0.0000
45	69.10	0.0000	0.0000	0.0000		0.0000
46	65.55	0.0000	0.0000	0.0000		0.0000
47	61.45	0.0000	0.0000	0.0000		0.0000
48	63.45	0.0000	0.0000	0.0000		0.0000
49	66.60	0.0000	0.0000	0.0000		0.0000

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DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
50	67.10	0.0000	0.0000	0.0000	0.0000
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 Q=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 Q=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 Q=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 1000=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 1000=0	0.0000	0.0000

Legge di variazione delle portate

1000=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

1200=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.0002	10.00
2	3	164.07	1.060	0.0002	10.00
3	4	405.92	1.060	0.0002	10.00
4	5	170.13	1.060	0.0002	10.00
5	6	437.03	1.060	0.0002	10.00
6	7	55.65	1.060	0.0002	10.00
7	8	30.91	1.060	0.0002	10.00
8	9	132.24	1.060	0.0002	10.00
9	10	257.54	1.060	0.0002	10.00
10	11	198.34	1.060	0.0002	10.00
11	12	90.43	1.060	0.0002	10.00
12	13	84.54	1.060	0.0002	10.00
13	14	409.70	1.060	0.0002	10.00
14	15	224.61	1.060	0.0002	10.00
15	16	201.97	1.060	0.0002	10.00
16	17	555.36	1.060	0.0002	10.00
17	18	475.37	1.060	0.0002	10.00
18	19	46.87	1.060	0.0002	10.00
19	20	282.54	1.060	0.0002	10.00
20	21	225.00	1.060	0.0002	10.00
21	22	100.18	1.060	0.0002	10.00
22	23	278.08	1.060	0.0002	10.00
23	24	193.51	1.060	0.0002	10.00
24	25	433.46	1.060	0.0002	10.00
25	26	192.87	1.060	0.0002	10.00
26	27	221.13	1.060	0.0002	10.00
27	28	199.79	1.060	0.0002	10.00
28	29	110.19	1.060	0.0002	10.00
29	30	407.00	1.060	0.0002	10.00
30	31	34.81	1.060	0.0002	10.00
31	32	34.82	1.060	0.0002	10.00
32	33	118.46	1.060	0.0002	10.00
33	34	88.50	1.060	0.0002	10.00
34	35	43.08	0.630	0.0002	10.00
35	36	125.59	0.630	0.0002	10.00
36	37	176.54	0.630	0.0002	10.00
37	38	887.29	0.630	0.0002	10.00
38	39	99.98	0.630	0.0002	10.00
39	40	125.55	0.630	0.0002	10.00
40	41	171.03	0.630	0.0002	10.00
41	42	144.43	0.630	0.0002	10.00
42	43	89.03	0.630	0.0002	10.00
43	44	190.00	0.630	0.0002	10.00
44	45	208.88	0.630	0.0002	10.00
45	46	190.69	0.630	0.0002	10.00
46	47	107.21	0.630	0.0002	10.00
47	48	39.67	0.630	0.0002	10.00
48	49	62.18	0.630	0.0002	10.00
49	50	176.26	0.630	0.0002	10.00
50	51	163.09	0.630	0.0002	10.00
51	52	159.24	0.630	0.0002	10.00
53	54	106.41	0.630	0.0002	10.00
54	55	129.12	0.630	0.0002	10.00
55	56	169.79	0.630	0.0002	10.00
56	57	88.86	0.630	0.0002	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
57	58	55.15	0.630	0.0002	10.00
58	59	47.17	0.630	0.0002	10.00
59	60	92.41	0.630	0.0002	10.00
34	61	293.98	0.920	0.0002	6.00
61	62	517.89	0.920	0.0002	6.00
62	63	214.84	0.920	0.0002	6.00
52	53	142.38	0.630	0.0002	10.00
63	64	55.60	0.920	0.0002	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	1770.00005	2.01 M	4.6	0.39
2	-	3	TR	164	1.1	0.200	0.0	1769.99998	2.01	2.7	0.45
3	-	4	TR	406	1.1	0.200	0.0	1755.00002	1.99	2.7	1.09
4	-	5	TR	170	1.1	0.200	0.0	1755.00001	1.99	2.7	0.46
5	-	6	TR	437	1.1	0.200	0.0	1755.00003	1.99	2.7	1.17
6	-	7	TR	56	1.1	0.200	0.0	1724.99997	1.95	2.6	0.14
7	-	8	TR	31	1.1	0.200	0.0	1725.00002	1.95	2.6	0.08
8	-	9	TR	132	1.1	0.200	0.0	1724.99998	1.95	2.6	0.34
9	-	10	TR	258	1.1	0.200	0.0	1725.00003	1.95	2.6	0.67
10	-	11	TR	198	1.1	0.200	0.0	1724.99997	1.95	2.6	0.51
11	-	12	TR	90	1.1	0.200	0.0	1724.99999	1.95	2.6	0.23
12	-	13	TR	85	1.1	0.200	0.0	1724.99998	1.95	2.6	0.22
13	-	14	TR	410	1.1	0.200	0.0	1724.99994	1.95	2.6	1.06
14	-	15	TR	225	1.1	0.200	0.0	1725.00000	1.95	2.6	0.58
15	-	16	TR	202	1.1	0.200	0.0	1725.00000	1.95	2.6	0.52
16	-	17	TR	555	1.1	0.200	0.0	1694.99996	1.92	2.5	1.39
17	-	18	TR	475	1.1	0.200	0.0	1695.00001	1.92	2.5	1.19
18	-	19	TR	47	1.1	0.200	0.0	1635.00000	1.85	2.3	0.11
19	-	20	TR	283	1.1	0.200	0.0	1634.99999	1.85	2.3	0.66
20	-	21	TR	225	1.1	0.200	0.0	1635.00004	1.85	2.3	0.52
21	-	22	TR	100	1.1	0.200	0.0	1635.00000	1.85	2.3	0.23
22	-	23	TR	278	1.1	0.200	0.0	1635.00005	1.85	2.3	0.65
23	-	24	TR	194	1.1	0.200	0.0	1634.99996	1.85	2.3	0.45
24	-	25	TR	433	1.1	0.200	0.0	1529.99999	1.73	2.0	0.89
25	-	26	TR	193	1.1	0.200	0.0	1530.00002	1.73	2.0	0.39
26	-	27	TR	221	1.1	0.200	0.0	1530.00000	1.73	2.0	0.45
27	-	28	TR	200	1.1	0.200	0.0	1530.00001	1.73	2.0	0.41
28	-	29	TR	110	1.1	0.200	0.0	1529.99996	1.73	2.0	0.23
29	-	30	TR	407	1.1	0.200	0.0	1530.00003	1.73	2.0	0.83
30	-	31	TR	35	1.1	0.200	0.0	1529.99994	1.73	2.0	0.07
31	-	32	TR	35	1.1	0.200	0.0	1530.00004	1.73	2.0	0.07
32	-	33	TR	118	1.1	0.200	0.0	1530.00002	1.73	2.0	0.24
33	Q	34		89	1.1	0.200	1.1	1484.99999	1.68	3.7	0.32

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ADD_TAVO SIM_3A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49		2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88	m	1.0	0.09
34	Q	61		294	0.9	0.200	1.4	1020.00001	1.53		2.5	0.73
61	-	62	TR	518	0.9	0.200	0.0	1019.99996	1.53		1.9	0.99
62	-	63	TR	215	0.9	0.200	0.0	1019.99998	1.53		1.9	0.41
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33
63	-	64	TR	56	0.9	0.200	0.0	959.99999	1.44		1.7	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.01	146.61	0.00	
3	-15.00000	143.05	3.12	146.17	0.00	
4	0.00000	140.20	4.88	145.08	0.00	
5	0.00000	137.20	7.42	144.62	0.00	
6	-30.00000	132.40	11.05	143.45	0.00	
7	0.00000	132.30	11.01	143.31	0.00	
8	0.00000	132.20	11.03	143.23	0.00	
9	0.00000	132.20	10.69	142.89	0.00	
10	0.00000	130.95	11.27	142.22	0.00	
11	0.00000	129.30	12.41	141.71	0.00	
12	0.00000	126.20	15.27	141.47	0.00	
13	0.00000	127.20	14.05	141.25	0.00	
14	0.00000	123.20	16.99	140.19	0.00	
15	0.00000	123.55	16.06	139.61	0.00	
16	-30.00000	123.50	15.59	139.09	0.00	
17	0.00000	118.20	19.50	137.70	0.00	
18	-60.00000	109.60	26.91	136.51	0.00	
19	0.00000	109.60	26.80	136.40	0.00	
20	0.00000	105.00	30.74	135.74	0.00	
21	0.00000	104.90	30.32	135.22	0.00	
22	0.00000	102.60	32.38	134.98	0.00	
23	0.00000	101.65	32.68	134.33	0.00	
24	-105.00000	101.15	32.73	133.88	0.00	
25	0.00000	95.10	37.90	133.00	0.00	
26	0.00000	91.70	40.90	132.60	0.00	
27	0.00000	91.95	40.20	132.15	0.00	
28	0.00000	90.75	40.99	131.74	0.00	
29	0.00000	89.00	42.51	131.51	0.00	
30	0.00000	86.70	43.98	130.68	0.00	
31	0.00000	84.40	46.21	130.61	0.00	
32	0.00000	86.30	44.24	130.54	0.00	
33	-45.00000	84.70	45.59	130.29	0.00	
34	0.00000	84.05	45.92	129.97	0.00	
35	0.00000	83.75	46.10	129.85	0.00	
36	0.00000	83.45	45.96	129.41	0.00	
37	0.00000	81.40	47.50	128.90	0.00	
38	0.00000	74.80	51.57	126.37	0.00	
39	0.00000	73.45	52.63	126.08	0.00	
40	0.00000	73.45	52.27	125.72	0.00	
41	0.00000	72.55	52.68	125.23	0.00	
42	-45.00000	73.65	51.17	124.82	0.00	
43	0.00000	73.65	50.96	124.61	0.00	
44	0.00000	71.25	52.92	124.17	0.00	
45	0.00000	69.10	54.58	123.68	0.00	
46	0.00000	65.55	57.68	123.23	0.00	
47	0.00000	61.45	61.53	122.98	0.00	
48	0.00000	63.45	59.44	122.89	0.00	
49	0.00000	66.60	56.14	122.74	0.00	
50	0.00000	67.10	55.23	122.33	0.00	

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	55.50	121.95	0.00	
52	0.00000	67.30	54.27	121.57	0.00	
53	-100.00000	66.55	54.69	121.24	0.00	
54	0.00000	66.95	54.14	121.09	0.00	
55	0.00000	63.65	57.26	120.91	0.00	
56	0.00000	63.45	57.23	120.68	0.00	
57	0.00000	62.85	57.71	120.56	0.00	
58	0.00000	62.05	58.43	120.48	0.00	
59	-45.00000	62.10	58.32	120.42	0.00	
60	-275.00000	61.15	59.17	120.32	0.00	m
61	0.00000	92.75	36.48	129.23	0.00	
62	0.00000	103.65	24.59	128.24	0.00	
63	-60.00000	125.30	2.53	127.83	0.00	
64	-960.00000	125.30	2.44	127.74	0.00	
33q34	0.00000	84.70	45.44	130.14	0.00	
34q61	0.00000	84.05	45.75	129.80	0.00	
35q36	0.00000	83.75	46.02	129.77	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1770.00005

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

T = 1 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	465.00001	0.53	0.3	0.03
2	-	3	TR	164	1.1	0.200	0.0	465.00001	0.53	0.2	0.03
3	-	4	TR	406	1.1	0.200	0.0	465.00001	0.53	0.2	0.08
4	-	5	TR	170	1.1	0.200	0.0	465.00001	0.53	0.2	0.03
5	-	6	TR	437	1.1	0.200	0.0	465.00001	0.53	0.2	0.09
6	-	7	TR	56	1.1	0.200	0.0	465.00001	0.53	0.2	0.01
7	-	8	TR	31	1.1	0.200	0.0	465.00001	0.53	0.2	0.01
8	-	9	TR	132	1.1	0.200	0.0	465.00001	0.53	0.2	0.03
9	-	10	TR	258	1.1	0.200	0.0	465.00001	0.53	0.2	0.05
10	-	11	TR	198	1.1	0.200	0.0	465.00001	0.53	0.2	0.04
11	-	12	TR	90	1.1	0.200	0.0	465.00001	0.53	0.2	0.02
12	-	13	TR	85	1.1	0.200	0.0	465.00001	0.53	0.2	0.02
13	-	14	TR	410	1.1	0.200	0.0	465.00001	0.53	0.2	0.08
14	-	15	TR	225	1.1	0.200	0.0	465.00001	0.53	0.2	0.05
15	-	16	TR	202	1.1	0.200	0.0	465.00001	0.53	0.2	0.04
16	-	17	TR	555	1.1	0.200	0.0	465.00001	0.53	0.2	0.11
17	-	18	TR	475	1.1	0.200	0.0	465.00001	0.53	0.2	0.10
18	-	19	TR	47	1.1	0.200	0.0	465.00001	0.53	0.2	0.01
19	-	20	TR	283	1.1	0.200	0.0	465.00001	0.53	0.2	0.06
20	-	21	TR	225	1.1	0.200	0.0	465.00001	0.53	0.2	0.05
21	-	22	TR	100	1.1	0.200	0.0	465.00001	0.53	0.2	0.02
22	-	23	TR	278	1.1	0.200	0.0	465.00001	0.53	0.2	0.06
23	-	24	TR	194	1.1	0.200	0.0	465.00001	0.53	0.2	0.04
24	-	25	TR	433	1.1	0.200	0.0	465.00001	0.53	0.2	0.09
25	-	26	TR	193	1.1	0.200	0.0	465.00001	0.53	0.2	0.04
26	-	27	TR	221	1.1	0.200	0.0	465.00001	0.53	0.2	0.04
27	-	28	TR	200	1.1	0.200	0.0	465.00001	0.53	0.2	0.04
28	-	29	TR	110	1.1	0.200	0.0	465.00001	0.53	0.2	0.02
29	-	30	TR	407	1.1	0.200	0.0	465.00001	0.53	0.2	0.08
30	-	31	TR	35	1.1	0.200	0.0	465.00001	0.53	0.2	0.01
31	-	32	TR	35	1.1	0.200	0.0	465.00001	0.53	0.2	0.01
32	-	33	TR	118	1.1	0.200	0.0	465.00001	0.53	0.2	0.02
33	-	34		89	1.1	0.200	1.1	465.00001	0.53	0.4	0.03

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ADD_TAVO SIM_3A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49	M	2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88		1.0	0.09
34	-	61		294	0.9	0.200	0.0	0.00000	0.00	m	-0.0	-0.00
61	-	62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62	-	63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33
63	-	64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.37	146.97	0.00	
3	0.00000	143.05	3.89	146.94	0.00	
4	0.00000	140.20	6.66	146.86	0.00	
5	0.00000	137.20	9.62	146.82	0.00	
6	0.00000	132.40	14.33	146.73	0.00	
7	0.00000	132.30	14.42	146.72	0.00	
8	0.00000	132.20	14.52	146.72	0.00	
9	0.00000	132.20	14.49	146.69	0.00	
10	0.00000	130.95	15.69	146.64	0.00	
11	0.00000	129.30	17.30	146.60	0.00	
12	0.00000	126.20	20.38	146.58	0.00	
13	0.00000	127.20	19.36	146.56	0.00	
14	0.00000	123.20	23.28	146.48	0.00	
15	0.00000	123.55	22.88	146.43	0.00	
16	0.00000	123.50	22.89	146.39	0.00	
17	0.00000	118.20	28.08	146.28	0.00	
18	0.00000	109.60	36.58	146.18	0.00	
19	0.00000	109.60	36.57	146.17	0.00	
20	0.00000	105.00	41.11	146.11	0.00	
21	0.00000	104.90	41.17	146.07	0.00	
22	0.00000	102.60	43.45	146.05	0.00	
23	0.00000	101.65	44.34	145.99	0.00	
24	0.00000	101.15	44.80	145.95	0.00	
25	0.00000	95.10	50.76	145.86	0.00	
26	0.00000	91.70	54.13	145.83	0.00	
27	0.00000	91.95	53.83	145.78	0.00	
28	0.00000	90.75	54.99	145.74	0.00	
29	0.00000	89.00	56.72	145.72	0.00	
30	0.00000	86.70	58.94	145.64	0.00	
31	0.00000	84.40	61.23	145.63	0.00	
32	0.00000	86.30	59.32	145.62	0.00	
33	0.00000	84.70	60.90	145.60	0.00	
34	0.00000	84.05	61.51	145.56	0.00	^
35	0.00000	83.75	61.69	145.44	0.00	
36	0.00000	83.45	61.55	145.00	0.00	
37	0.00000	81.40	63.10	144.50	0.00	
38	0.00000	74.80	67.16	141.96	0.00	
39	0.00000	73.45	68.23	141.68	0.00	
40	0.00000	73.45	67.87	141.32	0.00	
41	0.00000	72.55	68.28	140.83	0.00	
42	-45.00000	73.65	66.77	140.42	0.00	
43	0.00000	73.65	66.56	140.21	0.00	
44	0.00000	71.25	68.51	139.76	0.00	
45	0.00000	69.10	70.17	139.27	0.00	
46	0.00000	65.55	73.28	138.83	0.00	
47	0.00000	61.45	77.12	138.57	0.00	
48	0.00000	63.45	75.03	138.48	0.00	
49	0.00000	66.60	71.74	138.34	0.00	
50	0.00000	67.10	70.82	137.92	0.00	

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	71.09	137.54	0.00	
52	0.00000	67.30	69.87	137.17	0.00	
53	-100.00000	66.55	70.28	136.83	0.00	
54	0.00000	66.95	69.74	136.69	0.00	
55	0.00000	63.65	72.86	136.51	0.00	
56	0.00000	63.45	72.83	136.28	0.00	
57	0.00000	62.85	73.30	136.15	0.00	
58	0.00000	62.05	74.03	136.08	0.00	
59	-45.00000	62.10	73.91	136.01	0.00	
60	-275.00000	61.15	74.77	135.92	0.00	m
61	0.00000	92.75	52.81	145.56	0.00	
62	0.00000	103.65	41.91	145.56	0.00	
63	0.00000	125.30	20.26	145.56	0.00	
64	0.00000	125.30	20.26	145.56	0.00	
33q34	0.00000	84.70	60.88	145.58	0.00	
34q61	0.00000	84.05	61.51	145.56	0.00	^
35q36	0.00000	83.75	61.61	145.36	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-465.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

T = 2 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	232.50000	0.26	0.1	0.01
2	-	3	TR	164	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
3	-	4	TR	406	1.1	0.200	0.0	232.50000	0.26	0.1	0.02
4	-	5	TR	170	1.1	0.200	0.0	232.50000	0.26	0.1	0.01
5	-	6	TR	437	1.1	0.200	0.0	232.50000	0.26	0.1	0.02
6	-	7	TR	56	1.1	0.200	0.0	232.50001	0.26	0.1	0.00
7	-	8	TR	31	1.1	0.200	0.0	232.50000	0.26	0.1	0.00
8	-	9	TR	132	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
9	-	10	TR	258	1.1	0.200	0.0	232.50000	0.26	0.1	0.01
10	-	11	TR	198	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
11	-	12	TR	90	1.1	0.200	0.0	232.50001	0.26	0.1	0.00
12	-	13	TR	85	1.1	0.200	0.0	232.50001	0.26	0.1	0.00
13	-	14	TR	410	1.1	0.200	0.0	232.50001	0.26	0.1	0.02
14	-	15	TR	225	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
15	-	16	TR	202	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
16	-	17	TR	555	1.1	0.200	0.0	232.50001	0.26	0.1	0.03
17	-	18	TR	475	1.1	0.200	0.0	232.50000	0.26	0.1	0.03
18	-	19	TR	47	1.1	0.200	0.0	232.50001	0.26	0.1	0.00
19	-	20	TR	283	1.1	0.200	0.0	232.50001	0.26	0.1	0.02
20	-	21	TR	225	1.1	0.200	0.0	232.50000	0.26	0.1	0.01
21	-	22	TR	100	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
22	-	23	TR	278	1.1	0.200	0.0	232.50000	0.26	0.1	0.02
23	-	24	TR	194	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
24	-	25	TR	433	1.1	0.200	0.0	232.50001	0.26	0.1	0.02
25	-	26	TR	193	1.1	0.200	0.0	232.50000	0.26	0.1	0.01
26	-	27	TR	221	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
27	-	28	TR	200	1.1	0.200	0.0	232.50000	0.26	0.1	0.01
28	-	29	TR	110	1.1	0.200	0.0	232.50001	0.26	0.1	0.01
29	-	30	TR	407	1.1	0.200	0.0	232.50000	0.26	0.1	0.02
30	-	31	TR	35	1.1	0.200	0.0	232.50002	0.26	0.1	0.00
31	-	32	TR	35	1.1	0.200	0.0	232.50000	0.26	0.1	0.00
32	-	33	TR	118	1.1	0.200	0.0	232.50000	0.26	0.1	0.01
33	-	34		89	1.1	0.200	1.1	232.50001	0.26	0.1	0.01

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ADD_TAVO SIM_3A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	232.50000	0.75		0.7	0.03
35	-	36		126	0.6	0.200	0.7	232.50000	0.75		0.9	0.11
36	-	37	TR	177	0.6	0.200	0.0	232.50001	0.75		0.7	0.13
37	-	38	TR	887	0.6	0.200	0.0	232.50000	0.75		0.7	0.66
38	-	39	TR	100	0.6	0.200	0.0	232.50000	0.75		0.7	0.07
39	-	40	TR	126	0.6	0.200	0.0	232.50000	0.75		0.7	0.09
40	-	41	TR	171	0.6	0.200	0.0	232.50001	0.75	M	0.7	0.13
41	-	42	TR	144	0.6	0.200	0.0	232.50001	0.75		0.7	0.11
42	-	43	TR	89	0.6	0.200	0.0	210.00000	0.67		0.6	0.05
43	-	44	TR	190	0.6	0.200	0.0	210.00001	0.67		0.6	0.12
44	-	45	TR	209	0.6	0.200	0.0	210.00000	0.67		0.6	0.13
45	-	46	TR	191	0.6	0.200	0.0	210.00000	0.67		0.6	0.12
46	-	47	TR	107	0.6	0.200	0.0	210.00001	0.67		0.6	0.07
47	-	48	TR	40	0.6	0.200	0.0	210.00001	0.67		0.6	0.02
48	-	49	TR	62	0.6	0.200	0.0	210.00000	0.67		0.6	0.04
49	-	50	TR	176	0.6	0.200	0.0	210.00000	0.67		0.6	0.11
50	-	51	TR	163	0.6	0.200	0.0	210.00001	0.67		0.6	0.10
51	-	52	TR	159	0.6	0.200	0.0	210.00001	0.67		0.6	0.10
53	-	54	TR	106	0.6	0.200	0.0	160.00000	0.51		0.4	0.04
54	-	55	TR	129	0.6	0.200	0.0	160.00000	0.51		0.4	0.05
55	-	56	TR	170	0.6	0.200	0.0	160.00000	0.51		0.4	0.06
56	-	57	TR	89	0.6	0.200	0.0	160.00000	0.51		0.4	0.03
57	-	58	TR	55	0.6	0.200	0.0	160.00000	0.51		0.4	0.02
58	-	59	TR	47	0.6	0.200	0.0	160.00000	0.51		0.4	0.02
59	-	60	TR	92	0.6	0.200	0.0	137.50000	0.44		0.3	0.03
34	-	61		294	0.9	0.200	0.0	0.00000	0.00	m	-0.0	-0.00
61	-	62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62	-	63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52	-	53	TR	142	0.6	0.200	0.0	210.00000	0.67		0.6	0.09
63	-	64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.39	146.99	0.00	
3	0.00000	143.05	3.93	146.98	0.00	
4	0.00000	140.20	6.76	146.96	0.00	
5	0.00000	137.20	9.75	146.95	0.00	
6	0.00000	132.40	14.53	146.93	0.00	
7	0.00000	132.30	14.63	146.93	0.00	
8	0.00000	132.20	14.72	146.92	0.00	
9	0.00000	132.20	14.72	146.92	0.00	
10	0.00000	130.95	15.95	146.90	0.00	
11	0.00000	129.30	17.59	146.89	0.00	
12	0.00000	126.20	20.69	146.89	0.00	
13	0.00000	127.20	19.68	146.88	0.00	
14	0.00000	123.20	23.66	146.86	0.00	
15	0.00000	123.55	23.30	146.85	0.00	
16	0.00000	123.50	23.34	146.84	0.00	
17	0.00000	118.20	28.61	146.81	0.00	
18	0.00000	109.60	37.18	146.78	0.00	
19	0.00000	109.60	37.18	146.78	0.00	
20	0.00000	105.00	41.76	146.76	0.00	
21	0.00000	104.90	41.85	146.75	0.00	
22	0.00000	102.60	44.14	146.74	0.00	
23	0.00000	101.65	45.08	146.73	0.00	
24	0.00000	101.15	45.57	146.72	0.00	
25	0.00000	95.10	51.60	146.70	0.00	
26	0.00000	91.70	54.99	146.69	0.00	
27	0.00000	91.95	54.72	146.67	0.00	
28	0.00000	90.75	55.91	146.66	0.00	
29	0.00000	89.00	57.66	146.66	0.00	
30	0.00000	86.70	59.93	146.63	0.00	
31	0.00000	84.40	62.23	146.63	0.00	
32	0.00000	86.30	60.33	146.63	0.00	
33	0.00000	84.70	61.92	146.62	0.00	
34	0.00000	84.05	62.57	146.62	0.00	^
35	0.00000	83.75	62.83	146.58	0.00	
36	0.00000	83.45	63.02	146.47	0.00	
37	0.00000	81.40	64.94	146.34	0.00	
38	0.00000	74.80	70.88	145.68	0.00	
39	0.00000	73.45	72.16	145.61	0.00	
40	0.00000	73.45	72.06	145.51	0.00	
41	0.00000	72.55	72.84	145.39	0.00	
42	-22.50000	73.65	71.63	145.28	0.00	
43	0.00000	73.65	71.57	145.22	0.00	
44	0.00000	71.25	73.86	145.11	0.00	
45	0.00000	69.10	75.88	144.98	0.00	
46	0.00000	65.55	79.31	144.86	0.00	
47	0.00000	61.45	83.35	144.80	0.00	
48	0.00000	63.45	81.32	144.77	0.00	
49	0.00000	66.60	78.14	144.74	0.00	
50	0.00000	67.10	77.53	144.63	0.00	

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	78.08	144.53	0.00	
52	0.00000	67.30	77.13	144.43	0.00	
53	-50.00000	66.55	77.80	144.35	0.00	
54	0.00000	66.95	77.36	144.31	0.00	
55	0.00000	63.65	80.61	144.26	0.00	
56	0.00000	63.45	80.75	144.20	0.00	
57	0.00000	62.85	81.32	144.17	0.00	
58	0.00000	62.05	82.10	144.15	0.00	
59	-22.50000	62.10	82.03	144.13	0.00	
60	-137.50000	61.15	82.95	144.10	0.00	m
61	0.00000	92.75	53.87	146.62	0.00	
62	0.00000	103.65	42.97	146.62	0.00	
63	0.00000	125.30	21.32	146.62	0.00	
64	0.00000	125.30	21.32	146.62	0.00	
33q34	0.00000	84.70	61.92	146.62	0.00	
34q61	0.00000	84.05	62.57	146.62	0.00	^
35q36	0.00000	83.75	62.81	146.56	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-232.50000

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 3 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	L	84	1.1	0.200	0.8	-0.00002	-0.00		-0.0	-0.00
2	-	3	L	164	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
3	-	4	L	406	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
4	-	5	L	170	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
5	-	6	L	437	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
6	-	7	L	56	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
7	-	8	L	31	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
8	-	9	L	132	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
9	-	10	L	258	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
10	-	11	L	198	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
11	-	12	L	90	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
12	-	13	L	85	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
13	-	14	L	410	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
14	-	15	L	225	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
15	-	16	L	202	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
16	-	17	L	555	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
17	-	18	L	475	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
18	-	19	L	47	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
19	-	20	L	283	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
20	-	21	L	225	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
21	-	22	L	100	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
22	-	23	L	278	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
23	-	24	L	194	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
24	-	25	L	433	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
25	-	26	L	193	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
26	-	27	L	221	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
27	-	28	L	200	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
28	-	29	L	110	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
29	-	30	L	407	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
30	-	31	L	35	1.1	0.200	0.0	0.00002	0.00	M	0.0	0.00
31	-	32	L	35	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
32	-	33	L	118	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
33	-	34		89	1.1	0.200	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_3A

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34 - 35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35 - 36		126	0.6	0.200	-2831.8	0.00000	0.00		0.0	0.00
36 - 37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37 - 38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38 - 39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39 - 40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40 - 41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41 - 42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42 - 43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43 - 44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44 - 45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45 - 46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46 - 47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47 - 48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48 - 49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49 - 50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50 - 51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51 - 52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53 - 54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54 - 55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55 - 56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56 - 57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57 - 58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58 - 59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59 - 60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34 - 61		294	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
61 - 62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62 - 63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52 - 53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63 - 64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*m
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	^
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	
60	0.00000	61.15	85.85	147.00	0.00	
61	0.00000	92.75	54.25	147.00	0.00	
62	0.00000	103.65	43.35	147.00	0.00	
63	0.00000	125.30	21.70	147.00	0.00	
64	0.00000	125.30	21.70	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
34q61	0.00000	84.05	62.95	147.00	0.00	^
35q36	0.00000	83.75	63.25	147.00	0.00	M

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	0.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_4

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
1	145.20	0.0000	0.0000	0.0000	0.0000
2	144.60	0.0000	0.0000	0.0000	0.0000
3	143.05	0.0000	0.0000	0.0000	-15.0000 1200=0
4	140.20	0.0000	0.0000	0.0000	0.0000
5	137.20	0.0000	0.0000	0.0000	0.0000
6	132.40	0.0000	0.0000	0.0000	-30.0000 1200=0
7	132.30	0.0000	0.0000	0.0000	0.0000
8	132.20	0.0000	0.0000	0.0000	0.0000
9	132.20	0.0000	0.0000	0.0000	0.0000
10	130.95	0.0000	0.0000	0.0000	0.0000
11	129.30	0.0000	0.0000	0.0000	0.0000
12	126.20	0.0000	0.0000	0.0000	0.0000
13	127.20	0.0000	0.0000	0.0000	0.0000
14	123.20	0.0000	0.0000	0.0000	0.0000
15	123.55	0.0000	0.0000	0.0000	0.0000
16	123.50	0.0000	0.0000	0.0000	-30.0000 1200=0
17	118.20	0.0000	0.0000	0.0000	0.0000
18	109.60	0.0000	0.0000	0.0000	-60.0000 1200=0
19	109.60	0.0000	0.0000	0.0000	0.0000
20	105.00	0.0000	0.0000	0.0000	0.0000
21	104.90	0.0000	0.0000	0.0000	0.0000
22	102.60	0.0000	0.0000	0.0000	0.0000
23	101.65	0.0000	0.0000	0.0000	0.0000
24	101.15	0.0000	0.0000	0.0000	-105.0000 1200=0
25	95.10	0.0000	0.0000	0.0000	0.0000
26	91.70	0.0000	0.0000	0.0000	0.0000
27	91.95	0.0000	0.0000	0.0000	0.0000
28	90.75	0.0000	0.0000	0.0000	0.0000
29	89.00	0.0000	0.0000	0.0000	0.0000
30	86.70	0.0000	0.0000	0.0000	0.0000
31	84.40	0.0000	0.0000	0.0000	0.0000
32	86.30	0.0000	0.0000	0.0000	0.0000
33	84.70	0.0000	0.0000	0.0000	-45.0000 1200=0
34	84.05	0.0000	0.0000	0.0000	0.0000
35	83.75	0.0000	0.0000	0.0000	0.0000
36	83.45	0.0000	0.0000	0.0000	0.0000
37	81.40	0.0000	0.0000	0.0000	0.0000
38	74.80	0.0000	0.0000	0.0000	0.0000
39	73.45	0.0000	0.0000	0.0000	0.0000
40	73.45	0.0000	0.0000	0.0000	0.0000
41	72.55	0.0000	0.0000	0.0000	0.0000
42	73.65	0.0000	0.0000	-45.0000 710=0	0.0000
43	73.65	0.0000	0.0000	0.0000	0.0000
44	71.25	0.0000	0.0000	0.0000	0.0000
45	69.10	0.0000	0.0000	0.0000	0.0000
46	65.55	0.0000	0.0000	0.0000	0.0000

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DESCRIZIONE DEI NODI

Nodo	Quota	Q civ. Legge	Q ind. Legge	Q art. Legge	Altre Q Legge
	(m)	(l/s)	(l/s)	(l/s)	(l/s)
47	61.45	0.0000	0.0000	0.0000	0.0000
48	63.45	0.0000	0.0000	0.0000	0.0000
49	66.60	0.0000	0.0000	0.0000	0.0000
50	67.10	0.0000	0.0000	0.0000	0.0000
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 710=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 710=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 710=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 Q=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 Q=0	0.0000	0.0000

Legge di variazione delle portate

1200=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

710=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	35	43.08	0.630	0.00008	10.00
35	36	125.59	0.630	0.00008	10.00
36	37	176.54	0.630	0.00008	10.00
37	38	887.29	0.630	0.00008	10.00
38	39	99.98	0.630	0.00008	10.00
39	40	125.55	0.630	0.00008	10.00
40	41	171.03	0.630	0.00008	10.00
41	42	144.43	0.630	0.00008	10.00
42	43	89.03	0.630	0.00008	10.00
43	44	190.00	0.630	0.00008	10.00
44	45	208.88	0.630	0.00008	10.00
45	46	190.69	0.630	0.00008	10.00
46	47	107.21	0.630	0.00008	10.00
47	48	39.67	0.630	0.00008	10.00
48	49	62.18	0.630	0.00008	10.00
49	50	176.26	0.630	0.00008	10.00
50	51	163.09	0.630	0.00008	10.00
51	52	159.24	0.630	0.00008	10.00
53	54	106.41	0.630	0.00008	10.00
54	55	129.12	0.630	0.00008	10.00
55	56	169.79	0.630	0.00008	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
56	57	88.86	0.630	0.00008	10.00
57	58	55.15	0.630	0.00008	10.00
58	59	47.17	0.630	0.00008	10.00
59	60	92.41	0.630	0.00008	10.00
34	61	293.98	0.920	0.00008	6.00
61	62	517.89	0.920	0.00008	6.00
62	63	214.84	0.920	0.00008	6.00
52	53	142.38	0.630	0.00008	10.00
63	64	55.60	0.920	0.00008	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	1769.99997	2.01 M	4.2	0.36
2	-	3	TR	164	1.1	0.080	0.0	1769.99992	2.01	2.4	0.39
3	-	4	TR	406	1.1	0.080	0.0	1755.00002	1.99	2.3	0.95
4	-	5	TR	170	1.1	0.080	0.0	1754.99997	1.99	2.3	0.40
5	-	6	TR	437	1.1	0.080	0.0	1755.00001	1.99	2.3	1.02
6	-	7	TR	56	1.1	0.080	0.0	1724.99997	1.95	2.3	0.13
7	-	8	TR	31	1.1	0.080	0.0	1724.99999	1.95	2.3	0.07
8	-	9	TR	132	1.1	0.080	0.0	1725.00002	1.95	2.3	0.30
9	-	10	TR	258	1.1	0.080	0.0	1725.00004	1.95	2.3	0.58
10	-	11	TR	198	1.1	0.080	0.0	1724.99996	1.95	2.3	0.45
11	-	12	TR	90	1.1	0.080	0.0	1724.99999	1.95	2.3	0.20
12	-	13	TR	85	1.1	0.080	0.0	1724.99995	1.95	2.3	0.19
13	-	14	TR	410	1.1	0.080	0.0	1724.99995	1.95	2.3	0.93
14	-	15	TR	225	1.1	0.080	0.0	1724.99999	1.95	2.3	0.51
15	-	16	TR	202	1.1	0.080	0.0	1725.00000	1.95	2.3	0.46
16	-	17	TR	555	1.1	0.080	0.0	1694.99999	1.92	2.2	1.22
17	-	18	TR	475	1.1	0.080	0.0	1694.99997	1.92	2.2	1.04
18	-	19	TR	47	1.1	0.080	0.0	1635.00001	1.85	2.0	0.10
19	-	20	TR	283	1.1	0.080	0.0	1634.99995	1.85	2.0	0.58
20	-	21	TR	225	1.1	0.080	0.0	1634.99996	1.85	2.0	0.46
21	-	22	TR	100	1.1	0.080	0.0	1635.00001	1.85	2.0	0.20
22	-	23	TR	278	1.1	0.080	0.0	1635.00002	1.85	2.0	0.57
23	-	24	TR	194	1.1	0.080	0.0	1635.00001	1.85	2.0	0.40
24	-	25	TR	433	1.1	0.080	0.0	1529.99996	1.73	1.8	0.78
25	-	26	TR	193	1.1	0.080	0.0	1529.99997	1.73	1.8	0.35
26	-	27	TR	221	1.1	0.080	0.0	1530.00000	1.73	1.8	0.40
27	-	28	TR	200	1.1	0.080	0.0	1530.00002	1.73	1.8	0.36
28	-	29	TR	110	1.1	0.080	0.0	1529.99997	1.73	1.8	0.20
29	-	30	TR	407	1.1	0.080	0.0	1529.99998	1.73	1.8	0.73
30	-	31	TR	35	1.1	0.080	0.0	1530.00004	1.73	1.8	0.06
31	-	32	TR	35	1.1	0.080	0.0	1530.00001	1.73	1.8	0.06
32	-	33	TR	118	1.1	0.080	0.0	1529.99996	1.73	1.8	0.21
33	Q	34		89	1.1	0.080	1.1	1485.00001	1.68	3.4	0.30

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ADD_TAVO SIM_4

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49		2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88	m	0.9	0.08
34	Q	61		294	0.9	0.080	1.4	1020.00000	1.53		2.3	0.67
61	-	62	TR	518	0.9	0.080	0.0	1019.99998	1.53		1.7	0.87
62	-	63	TR	215	0.9	0.080	0.0	1019.99999	1.53		1.7	0.36
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29
63	-	64	TR	56	0.9	0.080	0.0	959.99997	1.44		1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_4

 * RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.04	146.64	0.00	
3	-15.00000	143.05	3.20	146.25	0.00	
4	0.00000	140.20	5.10	145.30	0.00	
5	0.00000	137.20	7.70	144.90	0.00	
6	-30.00000	132.40	11.48	143.88	0.00	
7	0.00000	132.30	11.45	143.75	0.00	
8	0.00000	132.20	11.48	143.68	0.00	
9	0.00000	132.20	11.18	143.38	0.00	
10	0.00000	130.95	11.85	142.80	0.00	
11	0.00000	129.30	13.05	142.35	0.00	
12	0.00000	126.20	15.94	142.14	0.00	
13	0.00000	127.20	14.75	141.95	0.00	
14	0.00000	123.20	17.82	141.02	0.00	
15	0.00000	123.55	16.97	140.52	0.00	
16	-30.00000	123.50	16.56	140.06	0.00	
17	0.00000	118.20	20.64	138.84	0.00	
18	-60.00000	109.60	28.20	137.80	0.00	
19	0.00000	109.60	28.10	137.70	0.00	
20	0.00000	105.00	32.13	137.13	0.00	
21	0.00000	104.90	31.77	136.67	0.00	
22	0.00000	102.60	33.86	136.46	0.00	
23	0.00000	101.65	34.24	135.89	0.00	
24	-105.00000	101.15	34.35	135.50	0.00	
25	0.00000	95.10	39.62	134.72	0.00	
26	0.00000	91.70	42.67	134.37	0.00	
27	0.00000	91.95	42.03	133.98	0.00	
28	0.00000	90.75	42.87	133.62	0.00	
29	0.00000	89.00	44.42	133.42	0.00	
30	0.00000	86.70	45.99	132.69	0.00	
31	0.00000	84.40	48.23	132.63	0.00	
32	0.00000	86.30	46.26	132.56	0.00	
33	-45.00000	84.70	47.65	132.35	0.00	
34	0.00000	84.05	48.00	132.05	0.00	
35	0.00000	83.75	48.19	131.94	0.00	
36	0.00000	83.45	48.10	131.55	0.00	
37	0.00000	81.40	49.70	131.10	0.00	
38	0.00000	74.80	54.08	128.88	0.00	
39	0.00000	73.45	55.18	128.63	0.00	
40	0.00000	73.45	54.87	128.32	0.00	
41	0.00000	72.55	55.34	127.89	0.00	
42	-45.00000	73.65	53.88	127.53	0.00	
43	0.00000	73.65	53.70	127.35	0.00	
44	0.00000	71.25	55.71	126.96	0.00	
45	0.00000	69.10	57.43	126.53	0.00	
46	0.00000	65.55	60.58	126.13	0.00	
47	0.00000	61.45	64.46	125.91	0.00	
48	0.00000	63.45	62.38	125.83	0.00	
49	0.00000	66.60	59.10	125.70	0.00	
50	0.00000	67.10	58.24	125.34	0.00	

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ADD_TAVO SIM_4

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	58.55	125.00	0.00	
52	0.00000	67.30	57.38	124.68	0.00	
53	-100.00000	66.55	57.83	124.38	0.00	
54	0.00000	66.95	57.30	124.25	0.00	
55	0.00000	63.65	60.44	124.09	0.00	
56	0.00000	63.45	60.44	123.89	0.00	
57	0.00000	62.85	60.93	123.78	0.00	
58	0.00000	62.05	61.66	123.71	0.00	
59	-45.00000	62.10	61.55	123.65	0.00	
60	-275.00000	61.15	62.42	123.57	0.00	m
61	0.00000	92.75	38.63	131.38	0.00	
62	0.00000	103.65	26.86	130.51	0.00	
63	-60.00000	125.30	4.85	130.15	0.00	
64	-960.00000	125.30	4.76	130.06	0.00	
33q34	0.00000	84.70	47.50	132.20	0.00	
34q61	0.00000	84.05	47.82	131.87	0.00	
35q36	0.00000	83.75	48.11	131.86	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1769.99997

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 1 h 18 min

* RISULTATI DI RAMO *

Np - Na	FLOW	L	Di	eps	csi	q	V	sfr	dH

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			TYPE	(m)	(m)	(mm)	(-)	(l/s)	(m/s)	(E-3)	(m)
1	-	2	TR	84	1.1	0.080	0.8	866.99998	0.98	1.1	0.09
2	-	3	TR	164	1.1	0.080	0.0	866.99996	0.98	0.6	0.10
3	-	4	TR	406	1.1	0.080	0.0	867.00000	0.98	0.6	0.25
4	-	5	TR	170	1.1	0.080	0.0	866.99998	0.98	0.6	0.10
5	-	6	TR	437	1.1	0.080	0.0	866.99999	0.98	0.6	0.26
6	-	7	TR	56	1.1	0.080	0.0	866.99998	0.98	0.6	0.03
7	-	8	TR	31	1.1	0.080	0.0	866.99999	0.98	0.6	0.02
8	-	9	TR	132	1.1	0.080	0.0	867.00000	0.98	0.6	0.08
9	-	10	TR	258	1.1	0.080	0.0	867.00000	0.98	0.6	0.16
10	-	11	TR	198	1.1	0.080	0.0	866.99998	0.98	0.6	0.12
11	-	12	TR	90	1.1	0.080	0.0	866.99999	0.98	0.6	0.05
12	-	13	TR	85	1.1	0.080	0.0	866.99997	0.98	0.6	0.05
13	-	14	TR	410	1.1	0.080	0.0	866.99997	0.98	0.6	0.25
14	-	15	TR	225	1.1	0.080	0.0	866.99999	0.98	0.6	0.14
15	-	16	TR	202	1.1	0.080	0.0	866.99999	0.98	0.6	0.12
16	-	17	TR	555	1.1	0.080	0.0	866.99999	0.98	0.6	0.34
17	-	18	TR	475	1.1	0.080	0.0	866.99998	0.98	0.6	0.29
18	-	19	TR	47	1.1	0.080	0.0	866.99999	0.98	0.6	0.03
19	-	20	TR	283	1.1	0.080	0.0	866.99997	0.98	0.6	0.17
20	-	21	TR	225	1.1	0.080	0.0	866.99997	0.98	0.6	0.14
21	-	22	TR	100	1.1	0.080	0.0	866.99999	0.98	0.6	0.06
22	-	23	TR	278	1.1	0.080	0.0	867.00000	0.98	0.6	0.17
23	-	24	TR	194	1.1	0.080	0.0	866.99999	0.98	0.6	0.12
24	-	25	TR	433	1.1	0.080	0.0	866.99997	0.98	0.6	0.26
25	-	26	TR	193	1.1	0.080	0.0	866.99998	0.98	0.6	0.12
26	-	27	TR	221	1.1	0.080	0.0	866.99999	0.98	0.6	0.13
27	-	28	TR	200	1.1	0.080	0.0	867.00000	0.98	0.6	0.12
28	-	29	TR	110	1.1	0.080	0.0	866.99998	0.98	0.6	0.07
29	-	30	TR	407	1.1	0.080	0.0	866.99998	0.98	0.6	0.25
30	-	31	TR	35	1.1	0.080	0.0	867.00000	0.98	0.6	0.02
31	-	32	TR	35	1.1	0.080	0.0	866.99999	0.98	0.6	0.02
32	-	33	TR	118	1.1	0.080	0.0	866.99997	0.98	0.6	0.07
33	-	34		89	1.1	0.080	1.1	866.99999	0.98	1.2	0.11

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ADD_TAVO SIM_4

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
35	-	36		126	0.6	0.080	-54167.9	0.00000	0.00		-0.0	-0.00
36	-	37	L	177	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
37	-	38	L	887	0.6	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
38	-	39	L	100	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
39	-	40	L	126	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
40	-	41	L	171	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
42	-	43	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
43	-	44	L	190	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
44	-	45	L	209	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
45	-	46	L	191	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
46	-	47	L	107	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
48	-	49	L	62	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
49	-	50	L	176	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
50	-	51	L	163	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
51	-	52	L	159	0.6	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
53	-	54	L	106	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
55	-	56	L	170	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
58	-	59	L	47	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
34	-	61		294	0.9	0.080	1.4	867.00000	1.30	M	1.7	0.49
61	-	62	TR	518	0.9	0.080	0.0	866.99999	1.30		1.2	0.64
62	-	63	TR	215	0.9	0.080	0.0	867.00000	1.30		1.2	0.26
52	-	53	L	142	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
63	-	64	TR	56	0.9	0.080	0.0	815.99998	1.23		1.1	0.06

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_4

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.31	146.91	0.00	
3	0.00000	143.05	3.76	146.81	0.00	
4	0.00000	140.20	6.37	146.57	0.00	
5	0.00000	137.20	9.26	146.46	0.00	
6	0.00000	132.40	13.80	146.20	0.00	
7	0.00000	132.30	13.87	146.17	0.00	
8	0.00000	132.20	13.95	146.15	0.00	
9	0.00000	132.20	13.87	146.07	0.00	
10	0.00000	130.95	14.96	145.91	0.00	
11	0.00000	129.30	16.49	145.79	0.00	
12	0.00000	126.20	19.54	145.74	0.00	
13	0.00000	127.20	18.48	145.68	0.00	
14	0.00000	123.20	22.24	145.44	0.00	
15	0.00000	123.55	21.75	145.30	0.00	
16	0.00000	123.50	21.68	145.18	0.00	
17	0.00000	118.20	26.64	144.84	0.00	
18	0.00000	109.60	34.95	144.55	0.00	
19	0.00000	109.60	34.93	144.53	0.00	
20	0.00000	105.00	39.35	144.35	0.00	
21	0.00000	104.90	39.32	144.22	0.00	
22	0.00000	102.60	41.56	144.16	0.00	
23	0.00000	101.65	42.34	143.99	0.00	
24	0.00000	101.15	42.72	143.87	0.00	
25	0.00000	95.10	48.51	143.61	0.00	
26	0.00000	91.70	51.79	143.49	0.00	
27	0.00000	91.95	51.41	143.36	0.00	
28	0.00000	90.75	52.49	143.24	0.00	
29	0.00000	89.00	54.17	143.17	0.00	
30	0.00000	86.70	56.23	142.93	0.00	
31	0.00000	84.40	58.50	142.90	0.00	
32	0.00000	86.30	56.58	142.88	0.00	
33	0.00000	84.70	58.11	142.81	0.00	
34	0.00000	84.05	58.66	142.71	0.00	
35	0.00000	83.75	58.96	142.71	0.00	
36	0.00000	83.45	59.26	142.71	0.00	
37	0.00000	81.40	61.31	142.71	0.00	
38	0.00000	74.80	67.91	142.71	0.00	
39	0.00000	73.45	69.26	142.71	0.00	
40	0.00000	73.45	69.26	142.71	0.00	
41	0.00000	72.55	70.16	142.71	0.00	
42	0.00000	73.65	69.06	142.71	0.00	
43	0.00000	73.65	69.06	142.71	0.00	
44	0.00000	71.25	71.46	142.71	0.00	
45	0.00000	69.10	73.61	142.71	0.00	
46	0.00000	65.55	77.16	142.71	0.00	
47	0.00000	61.45	81.26	142.71	0.00	
48	0.00000	63.45	79.26	142.71	0.00	
49	0.00000	66.60	76.11	142.71	0.00	
50	0.00000	67.10	75.61	142.71	0.00	

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ADD_TAVO SIM_4

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	76.26	142.71	0.00	
52	0.00000	67.30	75.41	142.71	0.00	
53	0.00000	66.55	76.16	142.71	0.00	
54	0.00000	66.95	75.76	142.71	0.00	
55	0.00000	63.65	79.06	142.71	0.00	
56	0.00000	63.45	79.26	142.71	0.00	
57	0.00000	62.85	79.86	142.71	0.00	
58	0.00000	62.05	80.66	142.71	0.00	
59	0.00000	62.10	80.61	142.71	0.00	
60	0.00000	61.15	81.56	142.71	0.00	
61	0.00000	92.75	49.47	142.22	0.00	
62	0.00000	103.65	37.93	141.58	0.00	
63	-51.00000	125.30	16.02	141.32	0.00	
64	-816.00000	125.30	15.96	141.26	0.00	m
33q34	0.00000	84.70	58.06	142.76	0.00	
34q61	0.00000	84.05	58.53	142.58	0.00	
35q36	0.00000	83.75	58.96	142.71	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-866.99998

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 2 h 36 min

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1 - 2	PL	84	1.1	0.080	0.8	204.00001	0.23	0.1	0.01
2 - 3	PL	164	1.1	0.080	0.0	204.00002	0.23	0.0	0.01
3 - 4	PL	406	1.1	0.080	0.0	204.00000	0.23	0.0	0.02
4 - 5	PL	170	1.1	0.080	0.0	204.00001	0.23	0.0	0.01
5 - 6	PL	437	1.1	0.080	0.0	204.00000	0.23	0.0	0.02
6 - 7	PL	56	1.1	0.080	0.0	204.00001	0.23	0.0	0.00
7 - 8	PL	31	1.1	0.080	0.0	204.00000	0.23	0.0	0.00
8 - 9	PL	132	1.1	0.080	0.0	204.00000	0.23	0.0	0.01
9 - 10	PL	258	1.1	0.080	0.0	203.99999	0.23	0.0	0.01
10 - 11	PL	198	1.1	0.080	0.0	204.00001	0.23	0.0	0.01
11 - 12	PL	90	1.1	0.080	0.0	204.00000	0.23	0.0	0.00
12 - 13	PL	85	1.1	0.080	0.0	204.00001	0.23	0.0	0.00
13 - 14	PL	410	1.1	0.080	0.0	204.00001	0.23	0.0	0.02
14 - 15	PL	225	1.1	0.080	0.0	204.00000	0.23	0.0	0.01
15 - 16	PL	202	1.1	0.080	0.0	204.00000	0.23	0.0	0.01
16 - 17	PL	555	1.1	0.080	0.0	204.00000	0.23	0.0	0.02
17 - 18	PL	475	1.1	0.080	0.0	204.00001	0.23	0.0	0.02
18 - 19	PL	47	1.1	0.080	0.0	204.00000	0.23	0.0	0.00
19 - 20	PL	283	1.1	0.080	0.0	204.00001	0.23	0.0	0.01
20 - 21	PL	225	1.1	0.080	0.0	204.00001	0.23	0.0	0.01
21 - 22	PL	100	1.1	0.080	0.0	204.00000	0.23	0.0	0.00
22 - 23	PL	278	1.1	0.080	0.0	204.00000	0.23	0.0	0.01
23 - 24	PL	194	1.1	0.080	0.0	204.00000	0.23	0.0	0.01
24 - 25	PL	433	1.1	0.080	0.0	204.00001	0.23	0.0	0.02
25 - 26	PL	193	1.1	0.080	0.0	204.00001	0.23	0.0	0.01
26 - 27	PL	221	1.1	0.080	0.0	204.00000	0.23	0.0	0.01
27 - 28	PL	200	1.1	0.080	0.0	204.00000	0.23	0.0	0.01
28 - 29	PL	110	1.1	0.080	0.0	204.00001	0.23	0.0	0.00
29 - 30	PL	407	1.1	0.080	0.0	204.00001	0.23	0.0	0.02
30 - 31	PL	35	1.1	0.080	0.0	203.99999	0.23	0.0	0.00
31 - 32	PL	35	1.1	0.080	0.0	204.00000	0.23	0.0	0.00
32 - 33	PL	118	1.1	0.080	0.0	204.00001	0.23	0.0	0.00
33 - 34		89	1.1	0.080	1.1	204.00000	0.23	0.1	0.01

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ADD_TAVO SIM_4

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
35	-	36		126	0.6	0.080	-54167.9	0.00000	0.00		-0.0	-0.00
36	-	37	L	177	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
37	-	38	L	887	0.6	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
38	-	39	L	100	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
39	-	40	L	126	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
40	-	41	L	171	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
42	-	43	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
43	-	44	L	190	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
44	-	45	L	209	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
45	-	46	L	191	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
46	-	47	L	107	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
48	-	49	L	62	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
49	-	50	L	176	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
50	-	51	L	163	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
51	-	52	L	159	0.6	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
53	-	54	L	106	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
55	-	56	L	170	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.080	0.0	0.00001	0.00		0.0	0.00
58	-	59	L	47	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.080	0.0	0.00000	0.00		0.0	0.00
34	-	61		294	0.9	0.080	1.4	204.00000	0.31		0.1	0.03
61	-	62	PL	518	0.9	0.080	0.0	204.00000	0.31	M	0.1	0.04
62	-	63	PL	215	0.9	0.080	0.0	204.00000	0.31		0.1	0.02
52	-	53	L	142	0.6	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
63	-	64	PL	56	0.9	0.080	0.0	192.00001	0.29		0.1	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_4

 * RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.39	146.99	0.00	
3	0.00000	143.05	3.94	146.99	0.00	
4	0.00000	140.20	6.77	146.97	0.00	
5	0.00000	137.20	9.76	146.96	0.00	
6	0.00000	132.40	14.55	146.95	0.00	
7	0.00000	132.30	14.64	146.94	0.00	
8	0.00000	132.20	14.74	146.94	0.00	
9	0.00000	132.20	14.74	146.94	0.00	
10	0.00000	130.95	15.98	146.93	0.00	
11	0.00000	129.30	17.62	146.92	0.00	
12	0.00000	126.20	20.72	146.92	0.00	
13	0.00000	127.20	19.71	146.91	0.00	
14	0.00000	123.20	23.70	146.90	0.00	
15	0.00000	123.55	23.34	146.89	0.00	
16	0.00000	123.50	23.38	146.88	0.00	
17	0.00000	118.20	28.66	146.86	0.00	
18	0.00000	109.60	37.24	146.84	0.00	
19	0.00000	109.60	37.24	146.84	0.00	
20	0.00000	105.00	41.82	146.82	0.00	
21	0.00000	104.90	41.91	146.81	0.00	
22	0.00000	102.60	44.21	146.81	0.00	
23	0.00000	101.65	45.15	146.80	0.00	
24	0.00000	101.15	45.64	146.79	0.00	
25	0.00000	95.10	51.67	146.77	0.00	
26	0.00000	91.70	55.07	146.77	0.00	
27	0.00000	91.95	54.81	146.76	0.00	
28	0.00000	90.75	56.00	146.75	0.00	
29	0.00000	89.00	57.75	146.75	0.00	
30	0.00000	86.70	60.03	146.73	0.00	
31	0.00000	84.40	62.33	146.73	0.00	
32	0.00000	86.30	60.43	146.73	0.00	
33	0.00000	84.70	62.02	146.72	0.00	
34	0.00000	84.05	62.66	146.71	0.00	^
35	0.00000	83.75	62.96	146.71	0.00	
36	0.00000	83.45	63.26	146.71	0.00	
37	0.00000	81.40	65.31	146.71	0.00	
38	0.00000	74.80	71.91	146.71	0.00	
39	0.00000	73.45	73.26	146.71	0.00	
40	0.00000	73.45	73.26	146.71	0.00	
41	0.00000	72.55	74.16	146.71	0.00	
42	0.00000	73.65	73.06	146.71	0.00	
43	0.00000	73.65	73.06	146.71	0.00	
44	0.00000	71.25	75.46	146.71	0.00	
45	0.00000	69.10	77.61	146.71	0.00	
46	0.00000	65.55	81.16	146.71	0.00	
47	0.00000	61.45	85.26	146.71	0.00	
48	0.00000	63.45	83.26	146.71	0.00	
49	0.00000	66.60	80.11	146.71	0.00	
50	0.00000	67.10	79.61	146.71	0.00	

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ADD_TAVO SIM_4

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.26	146.71	0.00	
52	0.00000	67.30	79.41	146.71	0.00	
53	0.00000	66.55	80.16	146.71	0.00	
54	0.00000	66.95	79.76	146.71	0.00	
55	0.00000	63.65	83.06	146.71	0.00	
56	0.00000	63.45	83.26	146.71	0.00	
57	0.00000	62.85	83.86	146.71	0.00	
58	0.00000	62.05	84.66	146.71	0.00	
59	0.00000	62.10	84.61	146.71	0.00	
60	0.00000	61.15	85.56	146.71	0.00	
61	0.00000	92.75	53.93	146.68	0.00	
62	0.00000	103.65	42.99	146.64	0.00	
63	-12.00000	125.30	21.32	146.62	0.00	
64	-192.00000	125.30	21.32	146.62	0.00	m
33q34	0.00000	84.70	62.02	146.72	0.00	
34q61	0.00000	84.05	62.66	146.71	0.00	^
35q36	0.00000	83.75	62.96	146.71	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-204.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_4A

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
1	145.20	0.0000	0.0000	0.0000	0.0000
2	144.60	0.0000	0.0000	0.0000	0.0000
3	143.05	0.0000	0.0000	0.0000	-15.0000 1200=0
4	140.20	0.0000	0.0000	0.0000	0.0000
5	137.20	0.0000	0.0000	0.0000	0.0000
6	132.40	0.0000	0.0000	0.0000	-30.0000 1200=0
7	132.30	0.0000	0.0000	0.0000	0.0000
8	132.20	0.0000	0.0000	0.0000	0.0000
9	132.20	0.0000	0.0000	0.0000	0.0000
10	130.95	0.0000	0.0000	0.0000	0.0000
11	129.30	0.0000	0.0000	0.0000	0.0000
12	126.20	0.0000	0.0000	0.0000	0.0000
13	127.20	0.0000	0.0000	0.0000	0.0000
14	123.20	0.0000	0.0000	0.0000	0.0000
15	123.55	0.0000	0.0000	0.0000	0.0000
16	123.50	0.0000	0.0000	0.0000	-30.0000 1200=0
17	118.20	0.0000	0.0000	0.0000	0.0000
18	109.60	0.0000	0.0000	0.0000	-60.0000 1200=0
19	109.60	0.0000	0.0000	0.0000	0.0000
20	105.00	0.0000	0.0000	0.0000	0.0000
21	104.90	0.0000	0.0000	0.0000	0.0000
22	102.60	0.0000	0.0000	0.0000	0.0000
23	101.65	0.0000	0.0000	0.0000	0.0000
24	101.15	0.0000	0.0000	0.0000	-105.0000 1200=0
25	95.10	0.0000	0.0000	0.0000	0.0000
26	91.70	0.0000	0.0000	0.0000	0.0000
27	91.95	0.0000	0.0000	0.0000	0.0000
28	90.75	0.0000	0.0000	0.0000	0.0000
29	89.00	0.0000	0.0000	0.0000	0.0000
30	86.70	0.0000	0.0000	0.0000	0.0000
31	84.40	0.0000	0.0000	0.0000	0.0000
32	86.30	0.0000	0.0000	0.0000	0.0000
33	84.70	0.0000	0.0000	0.0000	-45.0000 1200=0
34	84.05	0.0000	0.0000	0.0000	0.0000
35	83.75	0.0000	0.0000	0.0000	0.0000
36	83.45	0.0000	0.0000	0.0000	0.0000
37	81.40	0.0000	0.0000	0.0000	0.0000
38	74.80	0.0000	0.0000	0.0000	0.0000
39	73.45	0.0000	0.0000	0.0000	0.0000
40	73.45	0.0000	0.0000	0.0000	0.0000
41	72.55	0.0000	0.0000	0.0000	0.0000
42	73.65	0.0000	0.0000	-45.0000 710=0	0.0000
43	73.65	0.0000	0.0000	0.0000	0.0000
44	71.25	0.0000	0.0000	0.0000	0.0000
45	69.10	0.0000	0.0000	0.0000	0.0000
46	65.55	0.0000	0.0000	0.0000	0.0000
47	61.45	0.0000	0.0000	0.0000	0.0000
48	63.45	0.0000	0.0000	0.0000	0.0000

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DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
49	66.60	0.0000	0.0000	0.0000	0.0000
50	67.10	0.0000	0.0000	0.0000	0.0000
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 710=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 710=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 710=0	0.0000
61	92.75	0.0000	0.0000	0.0000	0.0000
62	103.65	0.0000	0.0000	0.0000	0.0000
63	125.30	0.0000	-60.0000 Q=0	0.0000	0.0000
64	125.30	0.0000	-960.0000 Q=0	0.0000	0.0000

Legge di variazione delle portate

1200=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

710=0

T(h)	Q/Qm
0.00	1.00
1.00	0.00
2.00	0.00
3.00	0.00

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.0002	10.00
2	3	164.07	1.060	0.0002	10.00
3	4	405.92	1.060	0.0002	10.00
4	5	170.13	1.060	0.0002	10.00
5	6	437.03	1.060	0.0002	10.00
6	7	55.65	1.060	0.0002	10.00
7	8	30.91	1.060	0.0002	10.00
8	9	132.24	1.060	0.0002	10.00
9	10	257.54	1.060	0.0002	10.00
10	11	198.34	1.060	0.0002	10.00
11	12	90.43	1.060	0.0002	10.00
12	13	84.54	1.060	0.0002	10.00
13	14	409.70	1.060	0.0002	10.00
14	15	224.61	1.060	0.0002	10.00
15	16	201.97	1.060	0.0002	10.00
16	17	555.36	1.060	0.0002	10.00
17	18	475.37	1.060	0.0002	10.00
18	19	46.87	1.060	0.0002	10.00
19	20	282.54	1.060	0.0002	10.00
20	21	225.00	1.060	0.0002	10.00
21	22	100.18	1.060	0.0002	10.00
22	23	278.08	1.060	0.0002	10.00
23	24	193.51	1.060	0.0002	10.00
24	25	433.46	1.060	0.0002	10.00
25	26	192.87	1.060	0.0002	10.00
26	27	221.13	1.060	0.0002	10.00
27	28	199.79	1.060	0.0002	10.00
28	29	110.19	1.060	0.0002	10.00
29	30	407.00	1.060	0.0002	10.00
30	31	34.81	1.060	0.0002	10.00
31	32	34.82	1.060	0.0002	10.00
32	33	118.46	1.060	0.0002	10.00
33	34	88.50	1.060	0.0002	10.00
34	35	43.08	0.630	0.0002	10.00
35	36	125.59	0.630	0.0002	10.00
36	37	176.54	0.630	0.0002	10.00
37	38	887.29	0.630	0.0002	10.00
38	39	99.98	0.630	0.0002	10.00
39	40	125.55	0.630	0.0002	10.00
40	41	171.03	0.630	0.0002	10.00
41	42	144.43	0.630	0.0002	10.00
42	43	89.03	0.630	0.0002	10.00
43	44	190.00	0.630	0.0002	10.00
44	45	208.88	0.630	0.0002	10.00
45	46	190.69	0.630	0.0002	10.00
46	47	107.21	0.630	0.0002	10.00
47	48	39.67	0.630	0.0002	10.00
48	49	62.18	0.630	0.0002	10.00
49	50	176.26	0.630	0.0002	10.00
50	51	163.09	0.630	0.0002	10.00
51	52	159.24	0.630	0.0002	10.00
53	54	106.41	0.630	0.0002	10.00
54	55	129.12	0.630	0.0002	10.00
55	56	169.79	0.630	0.0002	10.00

DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza	Diametro	Scabrezza	Pressione nominale

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		(m)	(m)	(m)	(bar)
56	57	88.86	0.630	0.0002	10.00
57	58	55.15	0.630	0.0002	10.00
58	59	47.17	0.630	0.0002	10.00
59	60	92.41	0.630	0.0002	10.00
34	61	293.98	0.920	0.0002	6.00
61	62	517.89	0.920	0.0002	6.00
62	63	214.84	0.920	0.0002	6.00
52	53	142.38	0.630	0.0002	10.00
63	64	55.60	0.920	0.0002	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 23
VALVOLA SARACINESCA
Nodo di valle 24
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA SARACINESCA
Nodo di valle 34
Perdita di carico (m) : 0.20

Nodo: 34
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 61
Portata massima a valle (l/s) : 1050.00000
Portata nominale (l/s) : 1100.00000
Perdita di carico (m) : 0.40

Nodo: 35
VALVOLA SARACINESCA
Nodo di valle 36
Perdita di carico (m) : 0.20

Nodo: 45
VALVOLA SARACINESCA + MISURATORE DI PORTATA
Nodo di valle 46
Perdita di carico (m) : 0.30

T = 0 h 0 min

* RISULTATI DI RAMO *

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Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	1770.00005	2.01	M	4.6	0.39
2	-	3	TR	164	1.1	0.200	0.0	1769.99998	2.01		2.7	0.45
3	-	4	TR	406	1.1	0.200	0.0	1755.00002	1.99		2.7	1.09
4	-	5	TR	170	1.1	0.200	0.0	1755.00001	1.99		2.7	0.46
5	-	6	TR	437	1.1	0.200	0.0	1755.00003	1.99		2.7	1.17
6	-	7	TR	56	1.1	0.200	0.0	1724.99997	1.95		2.6	0.14
7	-	8	TR	31	1.1	0.200	0.0	1725.00002	1.95		2.6	0.08
8	-	9	TR	132	1.1	0.200	0.0	1724.99998	1.95		2.6	0.34
9	-	10	TR	258	1.1	0.200	0.0	1725.00003	1.95		2.6	0.67
10	-	11	TR	198	1.1	0.200	0.0	1724.99997	1.95		2.6	0.51
11	-	12	TR	90	1.1	0.200	0.0	1724.99999	1.95		2.6	0.23
12	-	13	TR	85	1.1	0.200	0.0	1724.99998	1.95		2.6	0.22
13	-	14	TR	410	1.1	0.200	0.0	1724.99994	1.95		2.6	1.06
14	-	15	TR	225	1.1	0.200	0.0	1725.00000	1.95		2.6	0.58
15	-	16	TR	202	1.1	0.200	0.0	1725.00000	1.95		2.6	0.52
16	-	17	TR	555	1.1	0.200	0.0	1694.99996	1.92		2.5	1.39
17	-	18	TR	475	1.1	0.200	0.0	1695.00001	1.92		2.5	1.19
18	-	19	TR	47	1.1	0.200	0.0	1635.00000	1.85		2.3	0.11
19	-	20	TR	283	1.1	0.200	0.0	1634.99999	1.85		2.3	0.66
20	-	21	TR	225	1.1	0.200	0.0	1635.00004	1.85		2.3	0.52
21	-	22	TR	100	1.1	0.200	0.0	1635.00000	1.85		2.3	0.23
22	-	23	TR	278	1.1	0.200	0.0	1635.00005	1.85		2.3	0.65
23	-	24	TR	194	1.1	0.200	0.0	1634.99996	1.85		2.3	0.45
24	-	25	TR	433	1.1	0.200	0.0	1529.99999	1.73		2.0	0.89
25	-	26	TR	193	1.1	0.200	0.0	1530.00002	1.73		2.0	0.39
26	-	27	TR	221	1.1	0.200	0.0	1530.00000	1.73		2.0	0.45
27	-	28	TR	200	1.1	0.200	0.0	1530.00001	1.73		2.0	0.41
28	-	29	TR	110	1.1	0.200	0.0	1529.99996	1.73		2.0	0.23
29	-	30	TR	407	1.1	0.200	0.0	1530.00003	1.73		2.0	0.83
30	-	31	TR	35	1.1	0.200	0.0	1529.99994	1.73		2.0	0.07
31	-	32	TR	35	1.1	0.200	0.0	1530.00004	1.73		2.0	0.07
32	-	33	TR	118	1.1	0.200	0.0	1530.00002	1.73		2.0	0.24
33	Q	34		89	1.1	0.200	1.1	1484.99999	1.68		3.7	0.32

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ADD_TAVO SIM_4A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49		2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88	m	1.0	0.09
34	Q	61		294	0.9	0.200	1.4	1020.00001	1.53		2.5	0.73
61	-	62	TR	518	0.9	0.200	0.0	1019.99996	1.53		1.9	0.99
62	-	63	TR	215	0.9	0.200	0.0	1019.99998	1.53		1.9	0.41
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33
63	-	64	TR	56	0.9	0.200	0.0	959.99999	1.44		1.7	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.01	146.61	0.00	
3	-15.00000	143.05	3.12	146.17	0.00	
4	0.00000	140.20	4.88	145.08	0.00	
5	0.00000	137.20	7.42	144.62	0.00	
6	-30.00000	132.40	11.05	143.45	0.00	
7	0.00000	132.30	11.01	143.31	0.00	
8	0.00000	132.20	11.03	143.23	0.00	
9	0.00000	132.20	10.69	142.89	0.00	
10	0.00000	130.95	11.27	142.22	0.00	
11	0.00000	129.30	12.41	141.71	0.00	
12	0.00000	126.20	15.27	141.47	0.00	
13	0.00000	127.20	14.05	141.25	0.00	
14	0.00000	123.20	16.99	140.19	0.00	
15	0.00000	123.55	16.06	139.61	0.00	
16	-30.00000	123.50	15.59	139.09	0.00	
17	0.00000	118.20	19.50	137.70	0.00	
18	-60.00000	109.60	26.91	136.51	0.00	
19	0.00000	109.60	26.80	136.40	0.00	
20	0.00000	105.00	30.74	135.74	0.00	
21	0.00000	104.90	30.32	135.22	0.00	
22	0.00000	102.60	32.38	134.98	0.00	
23	0.00000	101.65	32.68	134.33	0.00	
24	-105.00000	101.15	32.73	133.88	0.00	
25	0.00000	95.10	37.90	133.00	0.00	
26	0.00000	91.70	40.90	132.60	0.00	
27	0.00000	91.95	40.20	132.15	0.00	
28	0.00000	90.75	40.99	131.74	0.00	
29	0.00000	89.00	42.51	131.51	0.00	
30	0.00000	86.70	43.98	130.68	0.00	
31	0.00000	84.40	46.21	130.61	0.00	
32	0.00000	86.30	44.24	130.54	0.00	
33	-45.00000	84.70	45.59	130.29	0.00	
34	0.00000	84.05	45.92	129.97	0.00	
35	0.00000	83.75	46.10	129.85	0.00	
36	0.00000	83.45	45.96	129.41	0.00	
37	0.00000	81.40	47.50	128.90	0.00	
38	0.00000	74.80	51.57	126.37	0.00	
39	0.00000	73.45	52.63	126.08	0.00	
40	0.00000	73.45	52.27	125.72	0.00	
41	0.00000	72.55	52.68	125.23	0.00	
42	-45.00000	73.65	51.17	124.82	0.00	
43	0.00000	73.65	50.96	124.61	0.00	
44	0.00000	71.25	52.92	124.17	0.00	
45	0.00000	69.10	54.58	123.68	0.00	
46	0.00000	65.55	57.68	123.23	0.00	
47	0.00000	61.45	61.53	122.98	0.00	
48	0.00000	63.45	59.44	122.89	0.00	
49	0.00000	66.60	56.14	122.74	0.00	
50	0.00000	67.10	55.23	122.33	0.00	

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	55.50	121.95	0.00	
52	0.00000	67.30	54.27	121.57	0.00	
53	-100.00000	66.55	54.69	121.24	0.00	
54	0.00000	66.95	54.14	121.09	0.00	
55	0.00000	63.65	57.26	120.91	0.00	
56	0.00000	63.45	57.23	120.68	0.00	
57	0.00000	62.85	57.71	120.56	0.00	
58	0.00000	62.05	58.43	120.48	0.00	
59	-45.00000	62.10	58.32	120.42	0.00	
60	-275.00000	61.15	59.17	120.32	0.00	m
61	0.00000	92.75	36.48	129.23	0.00	
62	0.00000	103.65	24.59	128.24	0.00	
63	-60.00000	125.30	2.53	127.83	0.00	
64	-960.00000	125.30	2.44	127.74	0.00	
33q34	0.00000	84.70	45.44	130.14	0.00	
34q61	0.00000	84.05	45.75	129.80	0.00	
35q36	0.00000	83.75	46.02	129.77	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1770.00005

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
34 - 61q	1050.000		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 1 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	1020.00001	1.16	1.5	0.13
2	-	3	TR	164	1.1	0.200	0.0	1019.99998	1.16	0.9	0.15
3	-	4	TR	406	1.1	0.200	0.0	1019.99999	1.16	0.9	0.38
4	-	5	TR	170	1.1	0.200	0.0	1019.99999	1.16	0.9	0.16
5	-	6	TR	437	1.1	0.200	0.0	1020.00000	1.16	0.9	0.40
6	-	7	TR	56	1.1	0.200	0.0	1019.99997	1.16	0.9	0.05
7	-	8	TR	31	1.1	0.200	0.0	1020.00000	1.16	0.9	0.03
8	-	9	TR	132	1.1	0.200	0.0	1019.99998	1.16	0.9	0.12
9	-	10	TR	258	1.1	0.200	0.0	1020.00000	1.16	0.9	0.24
10	-	11	TR	198	1.1	0.200	0.0	1019.99997	1.16	0.9	0.18
11	-	12	TR	90	1.1	0.200	0.0	1019.99998	1.16	0.9	0.08
12	-	13	TR	85	1.1	0.200	0.0	1019.99998	1.16	0.9	0.08
13	-	14	TR	410	1.1	0.200	0.0	1019.99996	1.16	0.9	0.38
14	-	15	TR	225	1.1	0.200	0.0	1019.99998	1.16	0.9	0.21
15	-	16	TR	202	1.1	0.200	0.0	1019.99999	1.16	0.9	0.19
16	-	17	TR	555	1.1	0.200	0.0	1019.99997	1.16	0.9	0.51
17	-	18	TR	475	1.1	0.200	0.0	1019.99999	1.16	0.9	0.44
18	-	19	TR	47	1.1	0.200	0.0	1019.99998	1.16	0.9	0.04
19	-	20	TR	283	1.1	0.200	0.0	1019.99998	1.16	0.9	0.26
20	-	21	TR	225	1.1	0.200	0.0	1020.00000	1.16	0.9	0.21
21	-	22	TR	100	1.1	0.200	0.0	1019.99999	1.16	0.9	0.09
22	-	23	TR	278	1.1	0.200	0.0	1020.00001	1.16	0.9	0.26
23	-	24	TR	194	1.1	0.200	0.0	1019.99996	1.16	0.9	0.18
24	-	25	TR	433	1.1	0.200	0.0	1019.99998	1.16	0.9	0.40
25	-	26	TR	193	1.1	0.200	0.0	1019.99999	1.16	0.9	0.18
26	-	27	TR	221	1.1	0.200	0.0	1019.99998	1.16	0.9	0.20
27	-	28	TR	200	1.1	0.200	0.0	1019.99999	1.16	0.9	0.19
28	-	29	TR	110	1.1	0.200	0.0	1019.99996	1.16	0.9	0.10
29	-	30	TR	407	1.1	0.200	0.0	1020.00000	1.16	0.9	0.38
30	-	31	TR	35	1.1	0.200	0.0	1019.99995	1.16	0.9	0.03
31	-	32	TR	35	1.1	0.200	0.0	1020.00001	1.16	0.9	0.03
32	-	33	TR	118	1.1	0.200	0.0	1019.99999	1.16	0.9	0.11
33	-	34		89	1.1	0.200	1.1	1019.99998	1.16	1.7	0.15

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ADD_TAVO SIM_4A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35	-	36		126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
36	-	37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37	-	38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38	-	39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39	-	40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40	-	41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42	-	43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43	-	44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44	-	45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45	-	46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46	-	47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48	-	49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49	-	50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50	-	51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51	-	52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53	-	54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55	-	56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58	-	59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34	Q	61		294	0.9	0.200	1.4	1020.00001	1.53	M	2.5	0.73
61	-	62	TR	518	0.9	0.200	0.0	1019.99996	1.53		1.9	0.99
62	-	63	TR	215	0.9	0.200	0.0	1019.99998	1.53		1.9	0.41
52	-	53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63	-	64	TR	56	0.9	0.200	0.0	959.99999	1.44		1.7	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.27	146.87	0.00	
3	0.00000	143.05	3.67	146.72	0.00	
4	0.00000	140.20	6.14	146.34	0.00	
5	0.00000	137.20	8.98	146.18	0.00	
6	0.00000	132.40	13.38	145.78	0.00	
7	0.00000	132.30	13.43	145.73	0.00	
8	0.00000	132.20	13.50	145.70	0.00	
9	0.00000	132.20	13.38	145.58	0.00	
10	0.00000	130.95	14.39	145.34	0.00	
11	0.00000	129.30	15.85	145.15	0.00	
12	0.00000	126.20	18.87	145.07	0.00	
13	0.00000	127.20	17.79	144.99	0.00	
14	0.00000	123.20	21.41	144.61	0.00	
15	0.00000	123.55	20.85	144.40	0.00	
16	0.00000	123.50	20.72	144.22	0.00	
17	0.00000	118.20	25.50	143.70	0.00	
18	0.00000	109.60	33.66	143.26	0.00	
19	0.00000	109.60	33.62	143.22	0.00	
20	0.00000	105.00	37.96	142.96	0.00	
21	0.00000	104.90	37.85	142.75	0.00	
22	0.00000	102.60	40.06	142.66	0.00	
23	0.00000	101.65	40.75	142.40	0.00	
24	0.00000	101.15	41.07	142.22	0.00	
25	0.00000	95.10	46.72	141.82	0.00	
26	0.00000	91.70	49.94	141.64	0.00	
27	0.00000	91.95	49.48	141.43	0.00	
28	0.00000	90.75	50.50	141.25	0.00	
29	0.00000	89.00	52.15	141.15	0.00	
30	0.00000	86.70	54.07	140.77	0.00	
31	0.00000	84.40	56.34	140.74	0.00	
32	0.00000	86.30	54.41	140.71	0.00	
33	0.00000	84.70	55.90	140.60	0.00	
34	0.00000	84.05	56.39	140.44	0.00	
35	0.00000	83.75	56.69	140.44	0.00	
36	0.00000	83.45	56.99	140.44	0.00	
37	0.00000	81.40	59.04	140.44	0.00	
38	0.00000	74.80	65.64	140.44	0.00	
39	0.00000	73.45	66.99	140.44	0.00	
40	0.00000	73.45	66.99	140.44	0.00	
41	0.00000	72.55	67.89	140.44	0.00	
42	0.00000	73.65	66.79	140.44	0.00	
43	0.00000	73.65	66.79	140.44	0.00	
44	0.00000	71.25	69.19	140.44	0.00	
45	0.00000	69.10	71.34	140.44	0.00	
46	0.00000	65.55	74.89	140.44	0.00	
47	0.00000	61.45	78.99	140.44	0.00	
48	0.00000	63.45	76.99	140.44	0.00	
49	0.00000	66.60	73.84	140.44	0.00	
50	0.00000	67.10	73.34	140.44	0.00	

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	73.99	140.44	0.00	
52	0.00000	67.30	73.14	140.44	0.00	
53	0.00000	66.55	73.89	140.44	0.00	
54	0.00000	66.95	73.49	140.44	0.00	
55	0.00000	63.65	76.79	140.44	0.00	
56	0.00000	63.45	76.99	140.44	0.00	
57	0.00000	62.85	77.59	140.44	0.00	
58	0.00000	62.05	78.39	140.44	0.00	
59	0.00000	62.10	78.34	140.44	0.00	
60	0.00000	61.15	79.29	140.44	0.00	
61	0.00000	92.75	46.96	139.71	0.00	
62	0.00000	103.65	35.07	138.72	0.00	
63	-60.00000	125.30	13.01	138.31	0.00	
64	-960.00000	125.30	12.91	138.21	0.00	m
33q34	0.00000	84.70	55.82	140.52	0.00	
34q61	0.00000	84.05	56.22	140.27	0.00	
35q36	0.00000	83.75	56.69	140.44	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1020.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

T = 2 h 0 min

* RISULTATI DI RAMO *

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Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	509.99999	0.58	0.4	0.03
2	-	3	TR	164	1.1	0.200	0.0	509.99999	0.58	0.2	0.04
3	-	4	TR	406	1.1	0.200	0.0	509.99999	0.58	0.2	0.10
4	-	5	TR	170	1.1	0.200	0.0	509.99999	0.58	0.2	0.04
5	-	6	TR	437	1.1	0.200	0.0	509.99999	0.58	0.2	0.11
6	-	7	TR	56	1.1	0.200	0.0	509.99999	0.58	0.2	0.01
7	-	8	TR	31	1.1	0.200	0.0	509.99999	0.58	0.2	0.01
8	-	9	TR	132	1.1	0.200	0.0	509.99999	0.58	0.2	0.03
9	-	10	TR	258	1.1	0.200	0.0	509.99999	0.58	0.2	0.06
10	-	11	TR	198	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
11	-	12	TR	90	1.1	0.200	0.0	509.99999	0.58	0.2	0.02
12	-	13	TR	85	1.1	0.200	0.0	509.99999	0.58	0.2	0.02
13	-	14	TR	410	1.1	0.200	0.0	509.99999	0.58	0.2	0.10
14	-	15	TR	225	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
15	-	16	TR	202	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
16	-	17	TR	555	1.1	0.200	0.0	509.99999	0.58	0.2	0.13
17	-	18	TR	475	1.1	0.200	0.0	509.99999	0.58	0.2	0.12
18	-	19	TR	47	1.1	0.200	0.0	509.99999	0.58	0.2	0.01
19	-	20	TR	283	1.1	0.200	0.0	509.99999	0.58	0.2	0.07
20	-	21	TR	225	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
21	-	22	TR	100	1.1	0.200	0.0	509.99999	0.58	0.2	0.02
22	-	23	TR	278	1.1	0.200	0.0	509.99999	0.58	0.2	0.07
23	-	24	TR	194	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
24	-	25	TR	433	1.1	0.200	0.0	509.99999	0.58	0.2	0.11
25	-	26	TR	193	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
26	-	27	TR	221	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
27	-	28	TR	200	1.1	0.200	0.0	509.99999	0.58	0.2	0.05
28	-	29	TR	110	1.1	0.200	0.0	509.99999	0.58	0.2	0.03
29	-	30	TR	407	1.1	0.200	0.0	509.99999	0.58	0.2	0.10
30	-	31	TR	35	1.1	0.200	0.0	509.99999	0.58	0.2	0.01
31	-	32	TR	35	1.1	0.200	0.0	509.99999	0.58	0.2	0.01
32	-	33	TR	118	1.1	0.200	0.0	509.99999	0.58	0.2	0.03
33	-	34		89	1.1	0.200	1.1	509.99999	0.58	0.4	0.04

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ADD_TAVO SIM_4A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35	-	36		126	0.6	0.200	-2831.8	0.00000	0.00		-0.0	-0.00
36	-	37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37	-	38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38	-	39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39	-	40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40	-	41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42	-	43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43	-	44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44	-	45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45	-	46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46	-	47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48	-	49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49	-	50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50	-	51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51	-	52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53	-	54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55	-	56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58	-	59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34	-	61		294	0.9	0.200	1.4	510.00000	0.77	M	0.6	0.19
61	-	62	TR	518	0.9	0.200	0.0	509.99999	0.77		0.5	0.26
62	-	63	TR	215	0.9	0.200	0.0	509.99999	0.77		0.5	0.11
52	-	53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63	-	64	TR	56	0.9	0.200	0.0	479.99999	0.72		0.4	0.02

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.37	146.97	0.00	
3	0.00000	143.05	3.88	146.93	0.00	
4	0.00000	140.20	6.63	146.83	0.00	
5	0.00000	137.20	9.59	146.79	0.00	
6	0.00000	132.40	14.28	146.68	0.00	
7	0.00000	132.30	14.37	146.67	0.00	
8	0.00000	132.20	14.46	146.66	0.00	
9	0.00000	132.20	14.43	146.63	0.00	
10	0.00000	130.95	15.62	146.57	0.00	
11	0.00000	129.30	17.22	146.52	0.00	
12	0.00000	126.20	20.30	146.50	0.00	
13	0.00000	127.20	19.28	146.48	0.00	
14	0.00000	123.20	23.18	146.38	0.00	
15	0.00000	123.55	22.77	146.32	0.00	
16	0.00000	123.50	22.77	146.27	0.00	
17	0.00000	118.20	27.94	146.14	0.00	
18	0.00000	109.60	36.42	146.02	0.00	
19	0.00000	109.60	36.41	146.01	0.00	
20	0.00000	105.00	40.94	145.94	0.00	
21	0.00000	104.90	40.99	145.89	0.00	
22	0.00000	102.60	43.26	145.86	0.00	
23	0.00000	101.65	44.15	145.80	0.00	
24	0.00000	101.15	44.60	145.75	0.00	
25	0.00000	95.10	50.55	145.65	0.00	
26	0.00000	91.70	53.90	145.60	0.00	
27	0.00000	91.95	53.60	145.55	0.00	
28	0.00000	90.75	54.75	145.50	0.00	
29	0.00000	89.00	56.47	145.47	0.00	
30	0.00000	86.70	58.67	145.37	0.00	
31	0.00000	84.40	60.96	145.36	0.00	
32	0.00000	86.30	59.05	145.35	0.00	
33	0.00000	84.70	60.63	145.33	0.00	
34	0.00000	84.05	61.24	145.29	0.00	^
35	0.00000	83.75	61.54	145.29	0.00	
36	0.00000	83.45	61.84	145.29	0.00	
37	0.00000	81.40	63.89	145.29	0.00	
38	0.00000	74.80	70.49	145.29	0.00	
39	0.00000	73.45	71.84	145.29	0.00	
40	0.00000	73.45	71.84	145.29	0.00	
41	0.00000	72.55	72.74	145.29	0.00	
42	0.00000	73.65	71.64	145.29	0.00	
43	0.00000	73.65	71.64	145.29	0.00	
44	0.00000	71.25	74.04	145.29	0.00	
45	0.00000	69.10	76.19	145.29	0.00	
46	0.00000	65.55	79.74	145.29	0.00	
47	0.00000	61.45	83.84	145.29	0.00	
48	0.00000	63.45	81.84	145.29	0.00	
49	0.00000	66.60	78.69	145.29	0.00	
50	0.00000	67.10	78.19	145.29	0.00	

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	78.84	145.29	0.00	
52	0.00000	67.30	77.99	145.29	0.00	
53	0.00000	66.55	78.74	145.29	0.00	
54	0.00000	66.95	78.34	145.29	0.00	
55	0.00000	63.65	81.64	145.29	0.00	
56	0.00000	63.45	81.84	145.29	0.00	
57	0.00000	62.85	82.44	145.29	0.00	
58	0.00000	62.05	83.24	145.29	0.00	
59	0.00000	62.10	83.19	145.29	0.00	
60	0.00000	61.15	84.14	145.29	0.00	
61	0.00000	92.75	52.35	145.10	0.00	
62	0.00000	103.65	41.19	144.84	0.00	
63	-30.00000	125.30	19.43	144.73	0.00	
64	-480.00000	125.30	19.41	144.71	0.00	m
33q34	0.00000	84.70	60.61	145.31	0.00	
34q61	0.00000	84.05	61.19	145.24	0.00	^
35q36	0.00000	83.75	61.54	145.29	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-509.99999

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

T = 3 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	L	84	1.1	0.200	0.8	-0.00002	-0.00		-0.0	-0.00
2	-	3	L	164	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
3	-	4	L	406	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
4	-	5	L	170	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
5	-	6	L	437	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
6	-	7	L	56	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
7	-	8	L	31	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
8	-	9	L	132	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
9	-	10	L	258	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
10	-	11	L	198	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
11	-	12	L	90	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
12	-	13	L	85	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
13	-	14	L	410	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
14	-	15	L	225	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
15	-	16	L	202	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
16	-	17	L	555	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
17	-	18	L	475	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
18	-	19	L	47	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
19	-	20	L	283	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
20	-	21	L	225	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
21	-	22	L	100	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
22	-	23	L	278	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
23	-	24	L	194	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
24	-	25	L	433	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
25	-	26	L	193	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
26	-	27	L	221	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
27	-	28	L	200	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
28	-	29	L	110	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
29	-	30	L	407	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
30	-	31	L	35	1.1	0.200	0.0	0.00002	0.00	M	0.0	0.00
31	-	32	L	35	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
32	-	33	L	118	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
33	-	34		89	1.1	0.200	0.0	0.00000	0.00		0.0	0.00

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ADD_TAVO SIM_4A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
34	-	35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35	-	36		126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
36	-	37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37	-	38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38	-	39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39	-	40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40	-	41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41	-	42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42	-	43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43	-	44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44	-	45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45	-	46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46	-	47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47	-	48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48	-	49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49	-	50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50	-	51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51	-	52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53	-	54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54	-	55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55	-	56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56	-	57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57	-	58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58	-	59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59	-	60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
34	-	61		294	0.9	0.200	0.0	0.00000	0.00		-0.0	-0.00
61	-	62	L	518	0.9	0.200	0.0	0.00001	0.00		0.0	0.00
62	-	63	L	215	0.9	0.200	0.0	0.00000	0.00		0.0	0.00
52	-	53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
63	-	64	L	56	0.9	0.200	0.0	-0.00000	-0.00		-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*m
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	^
35	0.00000	83.75	63.25	147.00	0.00	M
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_4A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	
60	0.00000	61.15	85.85	147.00	0.00	
61	0.00000	92.75	54.25	147.00	0.00	
62	0.00000	103.65	43.35	147.00	0.00	
63	0.00000	125.30	21.70	147.00	0.00	
64	0.00000	125.30	21.70	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
34q61	0.00000	84.05	62.95	147.00	0.00	^
35q36	0.00000	83.75	63.25	147.00	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	0.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-	Valvola completamente aperta	
33 - 34q	-	Valvola completamente aperta	
34 - 61q	1050.000	Valvola completamente aperta	
35 - 36q	-	Valvola completamente aperta	
45 - 46q	-	Valvola completamente aperta	

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_V1

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata (l/s)
1	145.20	0.00000
2	144.60	0.00000
3	143.05	-15.00000
4	140.20	0.00000
5	137.20	0.00000
6	132.40	-30.00000
7	132.30	0.00000
8	132.20	0.00000
9	132.20	0.00000
10	130.95	0.00000
11	129.30	0.00000
12	126.20	0.00000
13	127.20	0.00000
14	123.20	0.00000
15	123.55	0.00000
16	123.50	-30.00000
17	118.20	0.00000
18	109.60	-60.00000
19	109.60	0.00000

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata (l/s)
20	105.00	0.00000
21	104.90	0.00000
22	102.60	0.00000
23	101.65	0.00000
24	101.15	-105.00000
25	95.10	0.00000
26	91.70	0.00000
27	91.95	0.00000
28	90.75	0.00000
29	89.00	0.00000
30	86.70	0.00000
31	84.40	0.00000
32	86.30	0.00000
33	84.70	-45.00000
34	84.05	0.00000
61	92.75	0.00000
62	103.65	0.00000
63	125.30	-60.00000
64	125.30	-960.00000

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 34
Portata massima a valle (l/s) : 1500.00000
Portata nominale (l/s) : 1770.00000
Perdita di carico (m) : 0.20

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	61	293.98	0.920	0.00008	6.00
61	62	517.89	0.920	0.00008	6.00
62	63	214.84	0.920	0.00008	6.00
63	64	55.60	0.920	0.00008	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

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* RISULTATI DI RAMO *

Np - Na	REG MOTO	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	plc (E-3)	dH (m)
1 - 2	TR	84	1.1	0.080	0.8	1304.99996	1.48	2.3	0.20
2 - 3	TR	164	1.1	0.080	0.0	1304.99993	1.48	1.3	0.22
3 - 4	TR	406	1.1	0.080	0.0	1290.00000	1.46	1.3	0.53
4 - 5	TR	170	1.1	0.080	0.0	1289.99996	1.46	1.3	0.22
5 - 6	TR	437	1.1	0.080	0.0	1289.99999	1.46	1.3	0.57
6 - 7	TR	56	1.1	0.080	0.0	1259.99997	1.43	1.2	0.07
7 - 8	TR	31	1.1	0.080	0.0	1259.99998	1.43	1.2	0.04
8 - 9	TR	132	1.1	0.080	0.0	1260.00000	1.43	1.2	0.16
9 - 10	TR	258	1.1	0.080	0.0	1260.00001	1.43	1.2	0.32
10 - 11	TR	198	1.1	0.080	0.0	1259.99996	1.43	1.2	0.25
11 - 12	TR	90	1.1	0.080	0.0	1259.99998	1.43	1.2	0.11
12 - 13	TR	85	1.1	0.080	0.0	1259.99995	1.43	1.2	0.10
13 - 14	TR	410	1.1	0.080	0.0	1259.99995	1.43	1.2	0.51
14 - 15	TR	225	1.1	0.080	0.0	1259.99998	1.43	1.2	0.28
15 - 16	TR	202	1.1	0.080	0.0	1259.99998	1.43	1.2	0.25
16 - 17	TR	555	1.1	0.080	0.0	1229.99998	1.39	1.2	0.66
17 - 18	TR	475	1.1	0.080	0.0	1229.99997	1.39	1.2	0.56
18 - 19	TR	47	1.1	0.080	0.0	1169.99999	1.33	1.1	0.05
19 - 20	TR	283	1.1	0.080	0.0	1169.99995	1.33	1.1	0.30
20 - 21	TR	225	1.1	0.080	0.0	1169.99996	1.33	1.1	0.24
21 - 22	TR	100	1.1	0.080	0.0	1169.99999	1.33	1.1	0.11
22 - 23	TR	278	1.1	0.080	0.0	1169.99999	1.33	1.1	0.30
23 - 24	TR	194	1.1	0.080	0.0	1169.99999	1.33	1.1	0.21
24 - 25	TR	433	1.1	0.080	0.0	1064.99996	1.21	0.9	0.39
25 - 26	TR	193	1.1	0.080	0.0	1064.99997	1.21	0.9	0.17
26 - 27	TR	221	1.1	0.080	0.0	1064.99999	1.21	0.9	0.20
27 - 28	TR	200	1.1	0.080	0.0	1065.00000	1.21	0.9	0.18
28 - 29	TR	110	1.1	0.080	0.0	1064.99997	1.21	0.9	0.10
29 - 30	TR	407	1.1	0.080	0.0	1064.99998	1.21	0.9	0.36
30 - 31	TR	35	1.1	0.080	0.0	1065.00001	1.21	0.9	0.03
31 - 32	TR	35	1.1	0.080	0.0	1064.99999	1.21	0.9	0.03
32 - 33	TR	118	1.1	0.080	0.0	1064.99996	1.21	0.9	0.11
33 - 34		89	1.1	0.080	1.0	1019.99999	1.16 m	1.6	0.14
34 - 61	TR	294	0.9	0.080	0.0	1020.00000	1.53 M	1.7	0.49
61 - 62	TR	518	0.9	0.080	0.0	1019.99998	1.53	1.7	0.87
62 - 63	TR	215	0.9	0.080	0.0	1019.99999	1.53	1.7	0.36
63 - 64	TR	56	0.9	0.080	0.0	959.99997	1.44	1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

ALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
33 - 34q	--	Valvola completamente aperta	

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ADD_TAVO SIM_V1

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.20	146.80	0.00	
3	-15.00000	143.05	3.54	146.59	0.00	
4	0.00000	140.20	5.86	146.06	0.00	
5	0.00000	137.20	8.64	145.84	0.00	
6	-30.00000	132.40	12.87	145.27	0.00	
7	0.00000	132.30	12.91	145.21	0.00	
8	0.00000	132.20	12.97	145.17	0.00	
9	0.00000	132.20	12.80	145.00	0.00	
10	0.00000	130.95	13.73	144.68	0.00	
11	0.00000	129.30	15.14	144.44	0.00	
12	0.00000	126.20	18.13	144.33	0.00	
13	0.00000	127.20	17.02	144.22	0.00	
14	0.00000	123.20	20.52	143.72	0.00	
15	0.00000	123.55	19.89	143.44	0.00	
16	-30.00000	123.50	19.69	143.19	0.00	
17	0.00000	118.20	24.33	142.53	0.00	
18	-60.00000	109.60	32.37	141.97	0.00	
19	0.00000	109.60	32.32	141.92	0.00	
20	0.00000	105.00	36.62	141.62	0.00	
21	0.00000	104.90	36.47	141.37	0.00	
22	0.00000	102.60	38.67	141.27	0.00	
23	0.00000	101.65	39.32	140.97	0.00	
24	-105.00000	101.15	39.61	140.76	0.00	
25	0.00000	95.10	45.27	140.37	0.00	
26	0.00000	91.70	48.50	140.20	0.00	
27	0.00000	91.95	48.05	140.00	0.00	
28	0.00000	90.75	49.07	139.82	0.00	
29	0.00000	89.00	50.72	139.72	0.00	
30	0.00000	86.70	52.66	139.36	0.00	
31	0.00000	84.40	54.93	139.33	0.00	
32	0.00000	86.30	53.00	139.30	0.00	
33	-45.00000	84.70	54.49	139.19	0.00	
34	0.00000	84.05	55.00	139.05	0.00	
61	0.00000	92.75	45.80	138.55	0.00	
62	0.00000	103.65	34.03	137.68	0.00	
63	-60.00000	125.30	12.02	137.32	0.00	
64	-960.00000	125.30	11.94	137.24	0.00	m
33q34	0.00000	84.70	54.42	139.12	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1304.99996

qs>0 se entrante nel serbatoio

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_V2

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata (l/s)
1	145.20	0.00000
2	144.60	0.00000
3	143.05	-15.00000
4	140.20	0.00000
5	137.20	0.00000
6	132.40	-30.00000
7	132.30	0.00000
8	132.20	0.00000
9	132.20	0.00000
10	130.95	0.00000
11	129.30	0.00000
12	126.20	0.00000
13	127.20	0.00000
14	123.20	0.00000
15	123.55	0.00000
16	123.50	-30.00000
17	118.20	0.00000
18	109.60	-60.00000
19	109.60	0.00000

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Portata (l/s)
20	105.00	0.00000
21	104.90	0.00000
22	102.60	0.00000
23	101.65	0.00000
24	101.15	-105.00000
25	95.10	0.00000
26	91.70	0.00000
27	91.95	0.00000
28	90.75	0.00000
29	89.00	0.00000
30	86.70	0.00000
31	84.40	0.00000
32	86.30	0.00000
33	84.70	-45.00000
34	84.05	0.00000
61	92.75	0.00000
62	103.65	0.00000
63	125.30	-60.00000
64	125.30	-960.00000

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.00000
Perdita di carico (m) : 0.20

Nodo: 33
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 34
Portata massima a valle (l/s) : 1500.00000
Portata nominale (l/s) : 1770.00000
Perdita di carico (m) : 0.20

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	61	293.98	0.920	0.00008	6.00
61	62	517.89	0.920	0.00008	6.00
62	63	214.84	0.920	0.00008	6.00
63	64	55.60	0.920	0.00008	6.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

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* RISULTATI DI RAMO *

Np - Na	REG MOTO	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	plc (E-3)	dH (m)
1 - 2	TR	84	1.1	0.080	0.8	1304.99996	1.48	2.3	0.20
2 - 3	TR	164	1.1	0.080	0.0	1304.99993	1.48	1.3	0.22
3 - 4	TR	406	1.1	0.080	0.0	1290.00000	1.46	1.3	0.53
4 - 5	TR	170	1.1	0.080	0.0	1289.99996	1.46	1.3	0.22
5 - 6	TR	437	1.1	0.080	0.0	1289.99999	1.46	1.3	0.57
6 - 7	TR	56	1.1	0.080	0.0	1259.99997	1.43	1.2	0.07
7 - 8	TR	31	1.1	0.080	0.0	1259.99998	1.43	1.2	0.04
8 - 9	TR	132	1.1	0.080	0.0	1260.00000	1.43	1.2	0.16
9 - 10	TR	258	1.1	0.080	0.0	1260.00001	1.43	1.2	0.32
10 - 11	TR	198	1.1	0.080	0.0	1259.99996	1.43	1.2	0.25
11 - 12	TR	90	1.1	0.080	0.0	1259.99998	1.43	1.2	0.11
12 - 13	TR	85	1.1	0.080	0.0	1259.99995	1.43	1.2	0.10
13 - 14	TR	410	1.1	0.080	0.0	1259.99995	1.43	1.2	0.51
14 - 15	TR	225	1.1	0.080	0.0	1259.99998	1.43	1.2	0.28
15 - 16	TR	202	1.1	0.080	0.0	1259.99998	1.43	1.2	0.25
16 - 17	TR	555	1.1	0.080	0.0	1229.99998	1.39	1.2	0.66
17 - 18	TR	475	1.1	0.080	0.0	1229.99997	1.39	1.2	0.56
18 - 19	TR	47	1.1	0.080	0.0	1169.99999	1.33	1.1	0.05
19 - 20	TR	283	1.1	0.080	0.0	1169.99995	1.33	1.1	0.30
20 - 21	TR	225	1.1	0.080	0.0	1169.99996	1.33	1.1	0.24
21 - 22	TR	100	1.1	0.080	0.0	1169.99999	1.33	1.1	0.11
22 - 23	TR	278	1.1	0.080	0.0	1169.99999	1.33	1.1	0.30
23 - 24	TR	194	1.1	0.080	0.0	1169.99999	1.33	1.1	0.21
24 - 25	TR	433	1.1	0.080	0.0	1064.99996	1.21	0.9	0.39
25 - 26	TR	193	1.1	0.080	0.0	1064.99997	1.21	0.9	0.17
26 - 27	TR	221	1.1	0.080	0.0	1064.99999	1.21	0.9	0.20
27 - 28	TR	200	1.1	0.080	0.0	1065.00000	1.21	0.9	0.18
28 - 29	TR	110	1.1	0.080	0.0	1064.99997	1.21	0.9	0.10
29 - 30	TR	407	1.1	0.080	0.0	1064.99998	1.21	0.9	0.36
30 - 31	TR	35	1.1	0.080	0.0	1065.00001	1.21	0.9	0.03
31 - 32	TR	35	1.1	0.080	0.0	1064.99999	1.21	0.9	0.03
32 - 33	TR	118	1.1	0.080	0.0	1064.99996	1.21	0.9	0.11
33 - 34		89	1.1	0.080	1.0	1019.99999	1.16 m	1.6	0.14
34 - 61	TR	294	0.9	0.080	0.0	1020.00000	1.53 M	1.7	0.49
61 - 62	TR	518	0.9	0.080	0.0	1019.99998	1.53	1.7	0.87
62 - 63	TR	215	0.9	0.080	0.0	1019.99999	1.53	1.7	0.36
63 - 64	TR	56	0.9	0.080	0.0	959.99997	1.44	1.5	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
33 - 34q	--	Valvola completamente aperta	

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ADD_TAVO SIM_V2

 * RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.20	146.80	0.00	
3	-15.00000	143.05	3.54	146.59	0.00	
4	0.00000	140.20	5.86	146.06	0.00	
5	0.00000	137.20	8.64	145.84	0.00	
6	-30.00000	132.40	12.87	145.27	0.00	
7	0.00000	132.30	12.91	145.21	0.00	
8	0.00000	132.20	12.97	145.17	0.00	
9	0.00000	132.20	12.80	145.00	0.00	
10	0.00000	130.95	13.73	144.68	0.00	
11	0.00000	129.30	15.14	144.44	0.00	
12	0.00000	126.20	18.13	144.33	0.00	
13	0.00000	127.20	17.02	144.22	0.00	
14	0.00000	123.20	20.52	143.72	0.00	
15	0.00000	123.55	19.89	143.44	0.00	
16	-30.00000	123.50	19.69	143.19	0.00	
17	0.00000	118.20	24.33	142.53	0.00	
18	-60.00000	109.60	32.37	141.97	0.00	
19	0.00000	109.60	32.32	141.92	0.00	
20	0.00000	105.00	36.62	141.62	0.00	
21	0.00000	104.90	36.47	141.37	0.00	
22	0.00000	102.60	38.67	141.27	0.00	
23	0.00000	101.65	39.32	140.97	0.00	
24	-105.00000	101.15	39.61	140.76	0.00	
25	0.00000	95.10	45.27	140.37	0.00	
26	0.00000	91.70	48.50	140.20	0.00	
27	0.00000	91.95	48.05	140.00	0.00	
28	0.00000	90.75	49.07	139.82	0.00	
29	0.00000	89.00	50.72	139.72	0.00	
30	0.00000	86.70	52.66	139.36	0.00	
31	0.00000	84.40	54.93	139.33	0.00	
32	0.00000	86.30	53.00	139.30	0.00	
33	-45.00000	84.70	54.49	139.19	0.00	
34	0.00000	84.05	55.00	139.05	0.00	
61	0.00000	92.75	45.80	138.55	0.00	
62	0.00000	103.65	34.03	137.68	0.00	
63	-60.00000	125.30	12.02	137.32	0.00	
64	-960.00000	125.30	11.94	137.24	0.00	m
33q34	0.00000	84.70	54.42	139.12	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

 * NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-1304.99996

qs>0 se entrante nel serbatoio

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_V3

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q (l/s)	Legge
1	145.20	0.0000	0.0000	0.0000	0.0000	
2	144.60	0.0000	0.0000	0.0000	0.0000	
3	143.05	0.0000	0.0000	0.0000	-15.0000	Q=0
4	140.20	0.0000	0.0000	0.0000	0.0000	
5	137.20	0.0000	0.0000	0.0000	0.0000	
6	132.40	0.0000	0.0000	0.0000	-30.0000	Q=0
7	132.30	0.0000	0.0000	0.0000	0.0000	
8	132.20	0.0000	0.0000	0.0000	0.0000	
9	132.20	0.0000	0.0000	0.0000	0.0000	
10	130.95	0.0000	0.0000	0.0000	0.0000	
11	129.30	0.0000	0.0000	0.0000	0.0000	
12	126.20	0.0000	0.0000	0.0000	0.0000	
13	127.20	0.0000	0.0000	0.0000	0.0000	
14	123.20	0.0000	0.0000	0.0000	0.0000	
15	123.55	0.0000	0.0000	0.0000	0.0000	
16	123.50	0.0000	0.0000	0.0000	-30.0000	Q=0
17	118.20	0.0000	0.0000	0.0000	0.0000	
18	109.60	0.0000	0.0000	0.0000	-60.0000	Q=0
19	109.60	0.0000	0.0000	0.0000	0.0000	
20	105.00	0.0000	0.0000	0.0000	0.0000	
21	104.90	0.0000	0.0000	0.0000	0.0000	
22	102.60	0.0000	0.0000	0.0000	0.0000	
23	101.65	0.0000	0.0000	0.0000	0.0000	
24	101.15	0.0000	0.0000	0.0000	-105.0000	Q=0
25	95.10	0.0000	0.0000	0.0000	0.0000	
26	91.70	0.0000	0.0000	0.0000	0.0000	
27	91.95	0.0000	0.0000	0.0000	0.0000	
28	90.75	0.0000	0.0000	0.0000	0.0000	
29	89.00	0.0000	0.0000	0.0000	0.0000	
30	86.70	0.0000	0.0000	0.0000	0.0000	
31	84.40	0.0000	0.0000	0.0000	0.0000	
32	86.30	0.0000	0.0000	0.0000	0.0000	
33	84.70	0.0000	0.0000	0.0000	-45.0000	Q=0
34	84.05	0.0000	0.0000	0.0000	0.0000	
35	83.75	0.0000	0.0000	0.0000	0.0000	
36	83.45	0.0000	0.0000	0.0000	0.0000	
37	81.40	0.0000	0.0000	0.0000	0.0000	
38	74.80	0.0000	0.0000	0.0000	0.0000	
39	73.45	0.0000	0.0000	0.0000	0.0000	
40	73.45	0.0000	0.0000	0.0000	0.0000	

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DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q Legge (l/s)
41	72.55	0.0000	0.0000	0.0000	0.0000
42	73.65	0.0000	0.0000	-45.0000 Q=0	0.0000
43	73.65	0.0000	0.0000	0.0000	0.0000
44	71.25	0.0000	0.0000	0.0000	0.0000
45	69.10	0.0000	0.0000	0.0000	0.0000
46	65.55	0.0000	0.0000	0.0000	0.0000
47	61.45	0.0000	0.0000	0.0000	0.0000
48	63.45	0.0000	0.0000	0.0000	0.0000
49	66.60	0.0000	0.0000	0.0000	0.0000
50	67.10	0.0000	0.0000	0.0000	0.0000
51	66.45	0.0000	0.0000	0.0000	0.0000
52	67.30	0.0000	0.0000	0.0000	0.0000
53	66.55	0.0000	0.0000	-100.0000 Q=0	0.0000
54	66.95	0.0000	0.0000	0.0000	0.0000
55	63.65	0.0000	0.0000	0.0000	0.0000
56	63.45	0.0000	0.0000	0.0000	0.0000
57	62.85	0.0000	0.0000	0.0000	0.0000
58	62.05	0.0000	0.0000	0.0000	0.0000
59	62.10	0.0000	0.0000	-45.0000 Q=0	0.0000
60	61.15	0.0000	0.0000	-275.0000 Q=0	0.0000

Legge di variazione delle portate

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.00008	10.00
2	3	164.07	1.060	0.00008	10.00
3	4	405.92	1.060	0.00008	10.00
4	5	170.13	1.060	0.00008	10.00
5	6	437.03	1.060	0.00008	10.00
6	7	55.65	1.060	0.00008	10.00
7	8	30.91	1.060	0.00008	10.00
8	9	132.24	1.060	0.00008	10.00
9	10	257.54	1.060	0.00008	10.00
10	11	198.34	1.060	0.00008	10.00
11	12	90.43	1.060	0.00008	10.00
12	13	84.54	1.060	0.00008	10.00
13	14	409.70	1.060	0.00008	10.00
14	15	224.61	1.060	0.00008	10.00
15	16	201.97	1.060	0.00008	10.00
16	17	555.36	1.060	0.00008	10.00
17	18	475.37	1.060	0.00008	10.00
18	19	46.87	1.060	0.00008	10.00
19	20	282.54	1.060	0.00008	10.00
20	21	225.00	1.060	0.00008	10.00
21	22	100.18	1.060	0.00008	10.00
22	23	278.08	1.060	0.00008	10.00
23	24	193.51	1.060	0.00008	10.00
24	25	433.46	1.060	0.00008	10.00
25	26	192.87	1.060	0.00008	10.00
26	27	221.13	1.060	0.00008	10.00
27	28	199.79	1.060	0.00008	10.00
28	29	110.19	1.060	0.00008	10.00
29	30	407.00	1.060	0.00008	10.00
30	31	34.81	1.060	0.00008	10.00
31	32	34.82	1.060	0.00008	10.00
32	33	118.46	1.060	0.00008	10.00
33	34	88.50	1.060	0.00008	10.00
34	35	43.08	0.630	0.00008	10.00
35	36	125.59	0.630	0.00008	10.00
36	37	176.54	0.630	0.00008	10.00
37	38	887.29	0.630	0.00008	10.00
38	39	99.98	0.630	0.00008	10.00
39	40	125.55	0.630	0.00008	10.00
40	41	171.03	0.630	0.00008	10.00
41	42	144.43	0.630	0.00008	10.00
42	43	89.03	0.630	0.00008	10.00
43	44	190.00	0.630	0.00008	10.00
44	45	208.88	0.630	0.00008	10.00
45	46	190.69	0.630	0.00008	10.00
46	47	107.21	0.630	0.00008	10.00
47	48	39.67	0.630	0.00008	10.00
48	49	62.18	0.630	0.00008	10.00
49	50	176.26	0.630	0.00008	10.00
50	51	163.09	0.630	0.00008	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
51	52	159.24	0.630	0.00008	10.00
53	54	106.41	0.630	0.00008	10.00
54	55	129.12	0.630	0.00008	10.00
55	56	169.79	0.630	0.00008	10.00
56	57	88.86	0.630	0.00008	10.00
57	58	55.15	0.630	0.00008	10.00
58	59	47.17	0.630	0.00008	10.00
59	60	92.41	0.630	0.00008	10.00
52	53	142.38	0.630	0.00008	10.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.000
Perdita di carico (m) : 0.20
Area (mq) : 0.00
Livello minimo (m) : 146.50
Livello massimo (m) : 148.50
Eta acqua serbatoio (ore) : 0.00

Nodo: 33
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 34
Portata di riferimento (l/s) : 1700.000
Portata nominale (l/s) : 1550.000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 36
Portata di riferimento (l/s) : 750.000
Portata nominale (l/s) : 500.000
Perdita di carico (m) : 0.20

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	750.00000	0.85	0.8	0.07
2	-	3	TR	164	1.1	0.080	0.0	749.99999	0.85	0.5	0.08
3	-	4	TR	406	1.1	0.080	0.0	735.00002	0.83	0.4	0.18
4	-	5	TR	170	1.1	0.080	0.0	735.00001	0.83	0.4	0.08
5	-	6	TR	437	1.1	0.080	0.0	735.00001	0.83	0.4	0.19
6	-	7	TR	56	1.1	0.080	0.0	705.00001	0.80	0.4	0.02
7	-	8	TR	31	1.1	0.080	0.0	705.00001	0.80	0.4	0.01
8	-	9	TR	132	1.1	0.080	0.0	705.00002	0.80	0.4	0.05
9	-	10	TR	258	1.1	0.080	0.0	705.00002	0.80	0.4	0.11
10	-	11	TR	198	1.1	0.080	0.0	705.00000	0.80	0.4	0.08
11	-	12	TR	90	1.1	0.080	0.0	705.00001	0.80	0.4	0.04
12	-	13	TR	85	1.1	0.080	0.0	705.00000	0.80	0.4	0.03
13	-	14	TR	410	1.1	0.080	0.0	705.00000	0.80	0.4	0.17
14	-	15	TR	225	1.1	0.080	0.0	705.00001	0.80	0.4	0.09
15	-	16	TR	202	1.1	0.080	0.0	705.00001	0.80	0.4	0.08
16	-	17	TR	555	1.1	0.080	0.0	675.00001	0.76	0.4	0.21
17	-	18	TR	475	1.1	0.080	0.0	675.00001	0.76	0.4	0.18
18	-	19	TR	47	1.1	0.080	0.0	615.00001	0.70	0.3	0.01
19	-	20	TR	283	1.1	0.080	0.0	615.00001	0.70	0.3	0.09
20	-	21	TR	225	1.1	0.080	0.0	615.00001	0.70	0.3	0.07
21	-	22	TR	100	1.1	0.080	0.0	615.00002	0.70	0.3	0.03
22	-	23	TR	278	1.1	0.080	0.0	615.00002	0.70	0.3	0.09
23	-	24	TR	194	1.1	0.080	0.0	615.00001	0.70	0.3	0.06
24	-	25	TR	433	1.1	0.080	0.0	510.00001	0.58	0.2	0.10
25	-	26	TR	193	1.1	0.080	0.0	510.00001	0.58	0.2	0.04
26	-	27	TR	221	1.1	0.080	0.0	510.00002	0.58	0.2	0.05
27	-	28	TR	200	1.1	0.080	0.0	510.00002	0.58	0.2	0.04
28	-	29	TR	110	1.1	0.080	0.0	510.00001	0.58	0.2	0.02
29	-	30	TR	407	1.1	0.080	0.0	510.00001	0.58	0.2	0.09
30	-	31	TR	35	1.1	0.080	0.0	510.00002	0.58	0.2	0.01

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ADD_TAVO SIM_V3

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
31	-	32	TR	35	1.1	0.080	0.0	510.00002	0.58		0.2	0.01
32	-	33	TR	118	1.1	0.080	0.0	510.00001	0.58		0.2	0.03
33	-	34		89	1.1	0.080	1.1	465.00001	0.53	m	0.4	0.03
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49	M	2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88		0.9	0.08
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.33	146.93	0.00	
3	-15.00000	143.05	3.81	146.86	0.00	
4	0.00000	140.20	6.48	146.68	0.00	
5	0.00000	137.20	9.40	146.60	0.00	
6	-30.00000	132.40	14.01	146.41	0.00	
7	0.00000	132.30	14.09	146.39	0.00	
8	0.00000	132.20	14.17	146.37	0.00	
9	0.00000	132.20	14.12	146.32	0.00	
10	0.00000	130.95	15.27	146.22	0.00	
11	0.00000	129.30	16.83	146.13	0.00	
12	0.00000	126.20	19.90	146.10	0.00	
13	0.00000	127.20	18.86	146.06	0.00	
14	0.00000	123.20	22.70	145.90	0.00	
15	0.00000	123.55	22.25	145.80	0.00	
16	-30.00000	123.50	22.22	145.72	0.00	
17	0.00000	118.20	27.31	145.51	0.00	
18	-60.00000	109.60	35.73	145.33	0.00	
19	0.00000	109.60	35.72	145.32	0.00	
20	0.00000	105.00	40.23	145.23	0.00	
21	0.00000	104.90	40.26	145.16	0.00	
22	0.00000	102.60	42.53	145.13	0.00	
23	0.00000	101.65	43.39	145.04	0.00	
24	-105.00000	101.15	43.83	144.98	0.00	
25	0.00000	95.10	49.78	144.88	0.00	
26	0.00000	91.70	53.14	144.84	0.00	
27	0.00000	91.95	52.84	144.79	0.00	
28	0.00000	90.75	53.99	144.74	0.00	
29	0.00000	89.00	55.72	144.72	0.00	
30	0.00000	86.70	57.93	144.63	0.00	
31	0.00000	84.40	60.22	144.62	0.00	
32	0.00000	86.30	58.31	144.61	0.00	
33	-45.00000	84.70	59.89	144.59	0.00	
34	0.00000	84.05	60.51	144.56	0.00	
35	0.00000	83.75	60.70	144.45	0.00	
36	0.00000	83.45	60.61	144.06	0.00	
37	0.00000	81.40	62.21	143.61	0.00	
38	0.00000	74.80	66.59	141.39	0.00	
39	0.00000	73.45	67.69	141.14	0.00	
40	0.00000	73.45	67.38	140.83	0.00	
41	0.00000	72.55	67.85	140.40	0.00	
42	-45.00000	73.65	66.39	140.04	0.00	
43	0.00000	73.65	66.21	139.86	0.00	
44	0.00000	71.25	68.22	139.47	0.00	
45	0.00000	69.10	69.94	139.04	0.00	
46	0.00000	65.55	73.09	138.64	0.00	
47	0.00000	61.45	76.97	138.42	0.00	
48	0.00000	63.45	74.89	138.34	0.00	
49	0.00000	66.60	71.61	138.21	0.00	
50	0.00000	67.10	70.75	137.85	0.00	

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	71.06	137.51	0.00	
52	0.00000	67.30	69.89	137.19	0.00	
53	-100.00000	66.55	70.34	136.89	0.00	
54	0.00000	66.95	69.81	136.76	0.00	
55	0.00000	63.65	72.96	136.61	0.00	
56	0.00000	63.45	72.95	136.40	0.00	
57	0.00000	62.85	73.44	136.29	0.00	
58	0.00000	62.05	74.17	136.22	0.00	
59	-45.00000	62.10	74.06	136.16	0.00	
60	-275.00000	61.15	74.93	136.08	0.00	m
33q34	0.00000	84.70	59.87	144.57	0.00	
35q36	0.00000	83.75	60.62	144.37	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-750.00000

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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T = 1 h 0 min

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	750.00000	0.85	0.8	0.07
2	-	3	TR	164	1.1	0.080	0.0	749.99999	0.85	0.5	0.08
3	-	4	TR	406	1.1	0.080	0.0	735.00002	0.83	0.4	0.18
4	-	5	TR	170	1.1	0.080	0.0	735.00001	0.83	0.4	0.08
5	-	6	TR	437	1.1	0.080	0.0	735.00001	0.83	0.4	0.19
6	-	7	TR	56	1.1	0.080	0.0	705.00001	0.80	0.4	0.02
7	-	8	TR	31	1.1	0.080	0.0	705.00001	0.80	0.4	0.01
8	-	9	TR	132	1.1	0.080	0.0	705.00002	0.80	0.4	0.05
9	-	10	TR	258	1.1	0.080	0.0	705.00002	0.80	0.4	0.11
10	-	11	TR	198	1.1	0.080	0.0	705.00000	0.80	0.4	0.08
11	-	12	TR	90	1.1	0.080	0.0	705.00001	0.80	0.4	0.04
12	-	13	TR	85	1.1	0.080	0.0	705.00000	0.80	0.4	0.03
13	-	14	TR	410	1.1	0.080	0.0	705.00000	0.80	0.4	0.17
14	-	15	TR	225	1.1	0.080	0.0	705.00001	0.80	0.4	0.09
15	-	16	TR	202	1.1	0.080	0.0	705.00001	0.80	0.4	0.08
16	-	17	TR	555	1.1	0.080	0.0	675.00001	0.76	0.4	0.21
17	-	18	TR	475	1.1	0.080	0.0	675.00001	0.76	0.4	0.18
18	-	19	TR	47	1.1	0.080	0.0	615.00001	0.70	0.3	0.01
19	-	20	TR	283	1.1	0.080	0.0	615.00001	0.70	0.3	0.09
20	-	21	TR	225	1.1	0.080	0.0	615.00001	0.70	0.3	0.07
21	-	22	TR	100	1.1	0.080	0.0	615.00002	0.70	0.3	0.03
22	-	23	TR	278	1.1	0.080	0.0	615.00002	0.70	0.3	0.09
23	-	24	TR	194	1.1	0.080	0.0	615.00001	0.70	0.3	0.06
24	-	25	TR	433	1.1	0.080	0.0	510.00001	0.58	0.2	0.10
25	-	26	TR	193	1.1	0.080	0.0	510.00001	0.58	0.2	0.04
26	-	27	TR	221	1.1	0.080	0.0	510.00002	0.58	0.2	0.05
27	-	28	TR	200	1.1	0.080	0.0	510.00002	0.58	0.2	0.04
28	-	29	TR	110	1.1	0.080	0.0	510.00001	0.58	0.2	0.02
29	-	30	TR	407	1.1	0.080	0.0	510.00001	0.58	0.2	0.09
30	-	31	TR	35	1.1	0.080	0.0	510.00002	0.58	0.2	0.01

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ADD_TAVO SIM_V3

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
31	-	32	TR	35	1.1	0.080	0.0	510.00002	0.58		0.2	0.01
32	-	33	TR	118	1.1	0.080	0.0	510.00001	0.58		0.2	0.03
33	-	34		89	1.1	0.080	1.1	465.00001	0.53	m	0.4	0.03
34	-	35	TR	43	0.6	0.080	0.0	465.00002	1.49		2.5	0.11
35	Q	36		126	0.6	0.080	0.7	465.00002	1.49		3.1	0.39
36	-	37	TR	177	0.6	0.080	0.0	465.00000	1.49		2.5	0.44
37	-	38	TR	887	0.6	0.080	0.0	465.00003	1.49	M	2.5	2.22
38	-	39	TR	100	0.6	0.080	0.0	465.00002	1.49		2.5	0.25
39	-	40	TR	126	0.6	0.080	0.0	465.00001	1.49		2.5	0.31
40	-	41	TR	171	0.6	0.080	0.0	465.00002	1.49		2.5	0.43
41	-	42	TR	144	0.6	0.080	0.0	465.00002	1.49		2.5	0.36
42	-	43	TR	89	0.6	0.080	0.0	420.00001	1.35		2.1	0.18
43	-	44	TR	190	0.6	0.080	0.0	420.00000	1.35		2.1	0.39
44	-	45	TR	209	0.6	0.080	0.0	420.00000	1.35		2.1	0.43
45	-	46	TR	191	0.6	0.080	0.0	420.00001	1.35		2.1	0.39
46	-	47	TR	107	0.6	0.080	0.0	420.00001	1.35		2.1	0.22
47	-	48	TR	40	0.6	0.080	0.0	420.00001	1.35		2.1	0.08
48	-	49	TR	62	0.6	0.080	0.0	420.00002	1.35		2.1	0.13
49	-	50	TR	176	0.6	0.080	0.0	420.00000	1.35		2.1	0.36
50	-	51	TR	163	0.6	0.080	0.0	420.00001	1.35		2.1	0.34
51	-	52	TR	159	0.6	0.080	0.0	420.00001	1.35		2.1	0.33
53	-	54	TR	106	0.6	0.080	0.0	320.00000	1.03		1.2	0.13
54	-	55	TR	129	0.6	0.080	0.0	320.00001	1.03		1.2	0.16
55	-	56	TR	170	0.6	0.080	0.0	320.00001	1.03		1.2	0.21
56	-	57	TR	89	0.6	0.080	0.0	320.00001	1.03		1.2	0.11
57	-	58	TR	55	0.6	0.080	0.0	320.00000	1.03		1.2	0.07
58	-	59	TR	47	0.6	0.080	0.0	320.00001	1.03		1.2	0.06
59	-	60	TR	92	0.6	0.080	0.0	275.00001	0.88		0.9	0.08
52	-	53	TR	142	0.6	0.080	0.0	420.00002	1.35		2.1	0.29

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.33	146.93	0.00	
3	-15.00000	143.05	3.81	146.86	0.00	
4	0.00000	140.20	6.48	146.68	0.00	
5	0.00000	137.20	9.40	146.60	0.00	
6	-30.00000	132.40	14.01	146.41	0.00	
7	0.00000	132.30	14.09	146.39	0.00	
8	0.00000	132.20	14.17	146.37	0.00	
9	0.00000	132.20	14.12	146.32	0.00	
10	0.00000	130.95	15.27	146.22	0.00	
11	0.00000	129.30	16.83	146.13	0.00	
12	0.00000	126.20	19.90	146.10	0.00	
13	0.00000	127.20	18.86	146.06	0.00	
14	0.00000	123.20	22.70	145.90	0.00	
15	0.00000	123.55	22.25	145.80	0.00	
16	-30.00000	123.50	22.22	145.72	0.00	
17	0.00000	118.20	27.31	145.51	0.00	
18	-60.00000	109.60	35.73	145.33	0.00	
19	0.00000	109.60	35.72	145.32	0.00	
20	0.00000	105.00	40.23	145.23	0.00	
21	0.00000	104.90	40.26	145.16	0.00	
22	0.00000	102.60	42.53	145.13	0.00	
23	0.00000	101.65	43.39	145.04	0.00	
24	-105.00000	101.15	43.83	144.98	0.00	
25	0.00000	95.10	49.78	144.88	0.00	
26	0.00000	91.70	53.14	144.84	0.00	
27	0.00000	91.95	52.84	144.79	0.00	
28	0.00000	90.75	53.99	144.74	0.00	
29	0.00000	89.00	55.72	144.72	0.00	
30	0.00000	86.70	57.93	144.63	0.00	
31	0.00000	84.40	60.22	144.62	0.00	
32	0.00000	86.30	58.31	144.61	0.00	
33	-45.00000	84.70	59.89	144.59	0.00	
34	0.00000	84.05	60.51	144.56	0.00	
35	0.00000	83.75	60.70	144.45	0.00	
36	0.00000	83.45	60.61	144.06	0.00	
37	0.00000	81.40	62.21	143.61	0.00	
38	0.00000	74.80	66.59	141.39	0.00	
39	0.00000	73.45	67.69	141.14	0.00	
40	0.00000	73.45	67.38	140.83	0.00	
41	0.00000	72.55	67.85	140.40	0.00	
42	-45.00000	73.65	66.39	140.04	0.00	
43	0.00000	73.65	66.21	139.86	0.00	
44	0.00000	71.25	68.22	139.47	0.00	
45	0.00000	69.10	69.94	139.04	0.00	
46	0.00000	65.55	73.09	138.64	0.00	
47	0.00000	61.45	76.97	138.42	0.00	
48	0.00000	63.45	74.89	138.34	0.00	
49	0.00000	66.60	71.61	138.21	0.00	
50	0.00000	67.10	70.75	137.85	0.00	

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	71.06	137.51	0.00	
52	0.00000	67.30	69.89	137.19	0.00	
53	-100.00000	66.55	70.34	136.89	0.00	
54	0.00000	66.95	69.81	136.76	0.00	
55	0.00000	63.65	72.96	136.61	0.00	
56	0.00000	63.45	72.95	136.40	0.00	
57	0.00000	62.85	73.44	136.29	0.00	
58	0.00000	62.05	74.17	136.22	0.00	
59	-45.00000	62.10	74.06	136.16	0.00	
60	-275.00000	61.15	74.93	136.08	0.00	m
33q34	0.00000	84.70	59.87	144.57	0.00	
35q36	0.00000	83.75	60.62	144.37	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-750.00000

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 2 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.080	0.8	375.00001	0.42	0.2	0.02
2	-	3	TR	164	1.1	0.080	0.0	375.00001	0.42	0.1	0.02
3	-	4	PL	406	1.1	0.080	0.0	367.50000	0.42	0.1	0.05
4	-	5	PL	170	1.1	0.080	0.0	367.50001	0.42	0.1	0.02
5	-	6	PL	437	1.1	0.080	0.0	367.50000	0.42	0.1	0.05
6	-	7	PL	56	1.1	0.080	0.0	352.50001	0.40	0.1	0.01
7	-	8	PL	31	1.1	0.080	0.0	352.50001	0.40	0.1	0.00
8	-	9	PL	132	1.1	0.080	0.0	352.50000	0.40	0.1	0.01
9	-	10	PL	258	1.1	0.080	0.0	352.50000	0.40	0.1	0.03
10	-	11	PL	198	1.1	0.080	0.0	352.50001	0.40	0.1	0.02
11	-	12	PL	90	1.1	0.080	0.0	352.50001	0.40	0.1	0.01
12	-	13	PL	85	1.1	0.080	0.0	352.50001	0.40	0.1	0.01
13	-	14	PL	410	1.1	0.080	0.0	352.50001	0.40	0.1	0.05
14	-	15	PL	225	1.1	0.080	0.0	352.50001	0.40	0.1	0.02
15	-	16	PL	202	1.1	0.080	0.0	352.50001	0.40	0.1	0.02
16	-	17	PL	555	1.1	0.080	0.0	337.50001	0.38	0.1	0.06
17	-	18	PL	475	1.1	0.080	0.0	337.50001	0.38	0.1	0.05
18	-	19	PL	47	1.1	0.080	0.0	307.50000	0.35	0.1	0.00
19	-	20	PL	283	1.1	0.080	0.0	307.50001	0.35	0.1	0.02
20	-	21	PL	225	1.1	0.080	0.0	307.50001	0.35	0.1	0.02
21	-	22	PL	100	1.1	0.080	0.0	307.50000	0.35	0.1	0.01
22	-	23	PL	278	1.1	0.080	0.0	307.50000	0.35	0.1	0.02
23	-	24	PL	194	1.1	0.080	0.0	307.50000	0.35	0.1	0.02
24	-	25	PL	433	1.1	0.080	0.0	255.00001	0.29	0.1	0.03
25	-	26	PL	193	1.1	0.080	0.0	255.00001	0.29	0.1	0.01
26	-	27	PL	221	1.1	0.080	0.0	255.00001	0.29	0.1	0.01
27	-	28	PL	200	1.1	0.080	0.0	255.00000	0.29	0.1	0.01
28	-	29	PL	110	1.1	0.080	0.0	255.00001	0.29	0.1	0.01
29	-	30	PL	407	1.1	0.080	0.0	255.00001	0.29	0.1	0.02
30	-	31	PL	35	1.1	0.080	0.0	255.00000	0.29	0.1	0.00

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ADD_TAVO SIM_V3

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
31 - 32	PL	35	1.1	0.080	0.0	255.00001	0.29		0.1	0.00
32 - 33	PL	118	1.1	0.080	0.0	255.00001	0.29		0.1	0.01
33 - 34		89	1.1	0.080	1.1	232.50000	0.26	m	0.1	0.01
34 - 35	TR	43	0.6	0.080	0.0	232.50001	0.75		0.7	0.03
35 - 36		126	0.6	0.080	0.7	232.50001	0.75		0.8	0.10
36 - 37	TR	177	0.6	0.080	0.0	232.50000	0.75		0.7	0.12
37 - 38	TR	887	0.6	0.080	0.0	232.50001	0.75	M	0.7	0.59
38 - 39	TR	100	0.6	0.080	0.0	232.50001	0.75		0.7	0.07
39 - 40	TR	126	0.6	0.080	0.0	232.50001	0.75		0.7	0.08
40 - 41	TR	171	0.6	0.080	0.0	232.50001	0.75		0.7	0.11
41 - 42	TR	144	0.6	0.080	0.0	232.50001	0.75		0.7	0.10
42 - 43	TR	89	0.6	0.080	0.0	210.00001	0.67		0.6	0.05
43 - 44	TR	190	0.6	0.080	0.0	210.00000	0.67		0.6	0.10
44 - 45	TR	209	0.6	0.080	0.0	210.00000	0.67		0.6	0.12
45 - 46	TR	191	0.6	0.080	0.0	210.00000	0.67		0.6	0.11
46 - 47	TR	107	0.6	0.080	0.0	210.00001	0.67		0.6	0.06
47 - 48	TR	40	0.6	0.080	0.0	210.00001	0.67		0.6	0.02
48 - 49	TR	62	0.6	0.080	0.0	210.00001	0.67		0.6	0.03
49 - 50	TR	176	0.6	0.080	0.0	210.00000	0.67		0.6	0.10
50 - 51	TR	163	0.6	0.080	0.0	210.00000	0.67		0.6	0.09
51 - 52	TR	159	0.6	0.080	0.0	210.00001	0.67		0.6	0.09
53 - 54	TR	106	0.6	0.080	0.0	160.00000	0.51		0.3	0.04
54 - 55	TR	129	0.6	0.080	0.0	160.00000	0.51		0.3	0.04
55 - 56	TR	170	0.6	0.080	0.0	160.00000	0.51		0.3	0.06
56 - 57	TR	89	0.6	0.080	0.0	160.00000	0.51		0.3	0.03
57 - 58	TR	55	0.6	0.080	0.0	160.00000	0.51		0.3	0.02
58 - 59	TR	47	0.6	0.080	0.0	160.00000	0.51		0.3	0.02
59 - 60	TR	92	0.6	0.080	0.0	137.50000	0.44		0.2	0.02
52 - 53	TR	142	0.6	0.080	0.0	210.00001	0.67		0.6	0.08

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.38	146.98	0.00	
3	-7.50000	143.05	3.91	146.96	0.00	
4	0.00000	140.20	6.71	146.91	0.00	
5	0.00000	137.20	9.69	146.89	0.00	
6	-15.00000	132.40	14.44	146.84	0.00	
7	0.00000	132.30	14.53	146.83	0.00	
8	0.00000	132.20	14.63	146.83	0.00	
9	0.00000	132.20	14.62	146.82	0.00	
10	0.00000	130.95	15.84	146.79	0.00	
11	0.00000	129.30	17.47	146.77	0.00	
12	0.00000	126.20	20.56	146.76	0.00	
13	0.00000	127.20	19.55	146.75	0.00	
14	0.00000	123.20	23.50	146.70	0.00	
15	0.00000	123.55	23.13	146.68	0.00	
16	-15.00000	123.50	23.15	146.65	0.00	
17	0.00000	118.20	28.40	146.60	0.00	
18	-30.00000	109.60	36.95	146.55	0.00	
19	0.00000	109.60	36.94	146.54	0.00	
20	0.00000	105.00	41.52	146.52	0.00	
21	0.00000	104.90	41.60	146.50	0.00	
22	0.00000	102.60	43.89	146.49	0.00	
23	0.00000	101.65	44.82	146.47	0.00	
24	-52.50000	101.15	45.30	146.45	0.00	
25	0.00000	95.10	51.32	146.42	0.00	
26	0.00000	91.70	54.71	146.41	0.00	
27	0.00000	91.95	54.45	146.40	0.00	
28	0.00000	90.75	55.64	146.39	0.00	
29	0.00000	89.00	57.38	146.38	0.00	
30	0.00000	86.70	59.65	146.35	0.00	
31	0.00000	84.40	61.95	146.35	0.00	
32	0.00000	86.30	60.05	146.35	0.00	
33	-22.50000	84.70	61.64	146.34	0.00	
34	0.00000	84.05	62.29	146.34	0.00	
35	0.00000	83.75	62.56	146.31	0.00	
36	0.00000	83.45	62.75	146.20	0.00	
37	0.00000	81.40	64.68	146.08	0.00	
38	0.00000	74.80	70.69	145.49	0.00	
39	0.00000	73.45	71.98	145.43	0.00	
40	0.00000	73.45	71.89	145.34	0.00	
41	0.00000	72.55	72.68	145.23	0.00	
42	-22.50000	73.65	71.48	145.13	0.00	
43	0.00000	73.65	71.43	145.08	0.00	
44	0.00000	71.25	73.73	144.98	0.00	
45	0.00000	69.10	75.76	144.86	0.00	
46	0.00000	65.55	79.21	144.76	0.00	
47	0.00000	61.45	83.25	144.70	0.00	
48	0.00000	63.45	81.23	144.68	0.00	
49	0.00000	66.60	78.04	144.64	0.00	
50	0.00000	67.10	77.44	144.54	0.00	

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	78.00	144.45	0.00	
52	0.00000	67.30	77.07	144.37	0.00	
53	-50.00000	66.55	77.74	144.29	0.00	
54	0.00000	66.95	77.30	144.25	0.00	
55	0.00000	63.65	80.56	144.21	0.00	
56	0.00000	63.45	80.70	144.15	0.00	
57	0.00000	62.85	81.27	144.12	0.00	
58	0.00000	62.05	82.06	144.11	0.00	
59	-22.50000	62.10	81.99	144.09	0.00	
60	-137.50000	61.15	82.92	144.07	0.00	m
33q34	0.00000	84.70	61.64	146.34	0.00	
35q36	0.00000	83.75	62.54	146.29	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-375.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 3 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	L	84	1.1	0.080	0.8	0.00001	0.00		0.0	0.00
2	-	3	L	164	1.1	0.080	0.0	0.00002	0.00	M	0.0	0.00
3	-	4	L	406	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
4	-	5	L	170	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
5	-	6	L	437	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
6	-	7	L	56	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
7	-	8	L	31	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
8	-	9	L	132	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
9	-	10	L	258	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00
10	-	11	L	198	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
11	-	12	L	90	1.1	0.080	0.0	-0.00000	-0.00	m	-0.0	-0.00
12	-	13	L	85	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
13	-	14	L	410	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
14	-	15	L	225	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
15	-	16	L	202	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
16	-	17	L	555	1.1	0.080	0.0	0.00000	0.00		0.0	0.00
17	-	18	L	475	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
18	-	19	L	47	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
19	-	20	L	283	1.1	0.080	0.0	0.00002	0.00		0.0	0.00
20	-	21	L	225	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
21	-	22	L	100	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
22	-	23	L	278	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
23	-	24	L	194	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
24	-	25	L	433	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
25	-	26	L	193	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
26	-	27	L	221	1.1	0.080	0.0	-0.00000	-0.00		-0.0	-0.00
27	-	28	L	200	1.1	0.080	0.0	-0.00001	-0.00		-0.0	-0.00
28	-	29	L	110	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
29	-	30	L	407	1.1	0.080	0.0	0.00001	0.00		0.0	0.00
30	-	31	L	35	1.1	0.080	0.0	-0.00002	-0.00		-0.0	-0.00

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ADD_TAVO SIM_V3

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
31	-	32	L	35	1.1	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
32	-	33	L	118	1.1	0.080	0.0	0.00001	0.00	0.0	0.00
33	-	34		89	1.1	0.080	0.0	0.00000	0.00	-0.0	-0.00
34	-	35	L	43	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
35	-	36		126	0.6	0.080	0.0	0.00000	0.00	-0.0	-0.00
36	-	37	L	177	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
37	-	38	L	887	0.6	0.080	0.0	-0.00001	-0.00	-0.0	-0.00
38	-	39	L	100	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
39	-	40	L	126	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
40	-	41	L	171	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
41	-	42	L	144	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
42	-	43	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
43	-	44	L	190	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
44	-	45	L	209	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
45	-	46	L	191	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
46	-	47	L	107	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
47	-	48	L	40	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
48	-	49	L	62	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
49	-	50	L	176	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
50	-	51	L	163	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
51	-	52	L	159	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
53	-	54	L	106	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
54	-	55	L	129	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
55	-	56	L	170	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
56	-	57	L	89	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
57	-	58	L	55	0.6	0.080	0.0	0.00001	0.00	0.0	0.00
58	-	59	L	47	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00
59	-	60	L	92	0.6	0.080	0.0	0.00000	0.00	0.0	0.00
52	-	53	L	142	0.6	0.080	0.0	-0.00000	-0.00	-0.0	-0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	m
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_V3

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	M
60	0.00000	61.15	85.85	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
35q36	0.00000	83.75	63.25	147.00	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-0.00001

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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RETE : ADD_TAVO SIMULAZIONE : ADD_TAVO SIM_V3A

DESCRIZIONE DEI NODI

Nodo	Quota (m)	Q civ. Legge (l/s)	Q ind. Legge (l/s)	Q art. Legge (l/s)	Altre Q (l/s)	Legge
1	145.20	0.0000	0.0000	0.0000	0.0000	
2	144.60	0.0000	0.0000	0.0000	0.0000	
3	143.05	0.0000	0.0000	0.0000	-15.0000	Q=0
4	140.20	0.0000	0.0000	0.0000	0.0000	
5	137.20	0.0000	0.0000	0.0000	0.0000	
6	132.40	0.0000	0.0000	0.0000	-30.0000	Q=0
7	132.30	0.0000	0.0000	0.0000	0.0000	
8	132.20	0.0000	0.0000	0.0000	0.0000	
9	132.20	0.0000	0.0000	0.0000	0.0000	
10	130.95	0.0000	0.0000	0.0000	0.0000	
11	129.30	0.0000	0.0000	0.0000	0.0000	
12	126.20	0.0000	0.0000	0.0000	0.0000	
13	127.20	0.0000	0.0000	0.0000	0.0000	
14	123.20	0.0000	0.0000	0.0000	0.0000	
15	123.55	0.0000	0.0000	0.0000	0.0000	
16	123.50	0.0000	0.0000	0.0000	-30.0000	Q=0
17	118.20	0.0000	0.0000	0.0000	0.0000	
18	109.60	0.0000	0.0000	0.0000	-60.0000	Q=0
19	109.60	0.0000	0.0000	0.0000	0.0000	
20	105.00	0.0000	0.0000	0.0000	0.0000	
21	104.90	0.0000	0.0000	0.0000	0.0000	
22	102.60	0.0000	0.0000	0.0000	0.0000	
23	101.65	0.0000	0.0000	0.0000	0.0000	
24	101.15	0.0000	0.0000	0.0000	-105.0000	Q=0
25	95.10	0.0000	0.0000	0.0000	0.0000	
26	91.70	0.0000	0.0000	0.0000	0.0000	
27	91.95	0.0000	0.0000	0.0000	0.0000	
28	90.75	0.0000	0.0000	0.0000	0.0000	
29	89.00	0.0000	0.0000	0.0000	0.0000	
30	86.70	0.0000	0.0000	0.0000	0.0000	
31	84.40	0.0000	0.0000	0.0000	0.0000	
32	86.30	0.0000	0.0000	0.0000	0.0000	
33	84.70	0.0000	0.0000	0.0000	-45.0000	Q=0
34	84.05	0.0000	0.0000	0.0000	0.0000	
35	83.75	0.0000	0.0000	0.0000	0.0000	
36	83.45	0.0000	0.0000	0.0000	0.0000	
37	81.40	0.0000	0.0000	0.0000	0.0000	
38	74.80	0.0000	0.0000	0.0000	0.0000	
39	73.45	0.0000	0.0000	0.0000	0.0000	
40	73.45	0.0000	0.0000	0.0000	0.0000	

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DESCRIZIONE DEI NODI

Nodo	Quota	Q civ. Legge	Q ind. Legge	Q art. Legge		Altre Q Legge
	(m)	(l/s)	(l/s)	(l/s)		(l/s)
41	72.55	0.0000	0.0000	0.0000		0.0000
42	73.65	0.0000	0.0000	-45.0000	Q=0	0.0000
43	73.65	0.0000	0.0000	0.0000		0.0000
44	71.25	0.0000	0.0000	0.0000		0.0000
45	69.10	0.0000	0.0000	0.0000		0.0000
46	65.55	0.0000	0.0000	0.0000		0.0000
47	61.45	0.0000	0.0000	0.0000		0.0000
48	63.45	0.0000	0.0000	0.0000		0.0000
49	66.60	0.0000	0.0000	0.0000		0.0000
50	67.10	0.0000	0.0000	0.0000		0.0000
51	66.45	0.0000	0.0000	0.0000		0.0000
52	67.30	0.0000	0.0000	0.0000		0.0000
53	66.55	0.0000	0.0000	-100.0000	Q=0	0.0000
54	66.95	0.0000	0.0000	0.0000		0.0000
55	63.65	0.0000	0.0000	0.0000		0.0000
56	63.45	0.0000	0.0000	0.0000		0.0000
57	62.85	0.0000	0.0000	0.0000		0.0000
58	62.05	0.0000	0.0000	0.0000		0.0000
59	62.10	0.0000	0.0000	-45.0000	Q=0	0.0000
60	61.15	0.0000	0.0000	-275.0000	Q=0	0.0000

Legge di variazione delle portate

COSTANTE

T(h)	Q/Qm
0.00	1.00

Q=0

T(h)	Q/Qm
0.00	1.00
1.00	1.00
2.00	0.50
3.00	0.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
1	2	84.25	1.060	0.0002	10.00
2	3	164.07	1.060	0.0002	10.00
3	4	405.92	1.060	0.0002	10.00
4	5	170.13	1.060	0.0002	10.00
5	6	437.03	1.060	0.0002	10.00
6	7	55.65	1.060	0.0002	10.00
7	8	30.91	1.060	0.0002	10.00
8	9	132.24	1.060	0.0002	10.00
9	10	257.54	1.060	0.0002	10.00
10	11	198.34	1.060	0.0002	10.00
11	12	90.43	1.060	0.0002	10.00
12	13	84.54	1.060	0.0002	10.00
13	14	409.70	1.060	0.0002	10.00
14	15	224.61	1.060	0.0002	10.00
15	16	201.97	1.060	0.0002	10.00
16	17	555.36	1.060	0.0002	10.00
17	18	475.37	1.060	0.0002	10.00
18	19	46.87	1.060	0.0002	10.00
19	20	282.54	1.060	0.0002	10.00
20	21	225.00	1.060	0.0002	10.00
21	22	100.18	1.060	0.0002	10.00
22	23	278.08	1.060	0.0002	10.00
23	24	193.51	1.060	0.0002	10.00
24	25	433.46	1.060	0.0002	10.00
25	26	192.87	1.060	0.0002	10.00
26	27	221.13	1.060	0.0002	10.00
27	28	199.79	1.060	0.0002	10.00
28	29	110.19	1.060	0.0002	10.00
29	30	407.00	1.060	0.0002	10.00
30	31	34.81	1.060	0.0002	10.00
31	32	34.82	1.060	0.0002	10.00
32	33	118.46	1.060	0.0002	10.00
33	34	88.50	1.060	0.0002	10.00
34	35	43.08	0.630	0.0002	10.00
35	36	125.59	0.630	0.0002	10.00
36	37	176.54	0.630	0.0002	10.00
37	38	887.29	0.630	0.0002	10.00
38	39	99.98	0.630	0.0002	10.00
39	40	125.55	0.630	0.0002	10.00
40	41	171.03	0.630	0.0002	10.00
41	42	144.43	0.630	0.0002	10.00
42	43	89.03	0.630	0.0002	10.00
43	44	190.00	0.630	0.0002	10.00
44	45	208.88	0.630	0.0002	10.00
45	46	190.69	0.630	0.0002	10.00
46	47	107.21	0.630	0.0002	10.00
47	48	39.67	0.630	0.0002	10.00
48	49	62.18	0.630	0.0002	10.00
49	50	176.26	0.630	0.0002	10.00
50	51	163.09	0.630	0.0002	10.00

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DESCRIZIONE DEI TRONCHI

Np	Na	Lunghezza (m)	Diametro (m)	Scabrezza (m)	Pressione nominale (bar)
51	52	159.24	0.630	0.0002	10.00
53	54	106.41	0.630	0.0002	10.00
54	55	129.12	0.630	0.0002	10.00
55	56	169.79	0.630	0.0002	10.00
56	57	88.86	0.630	0.0002	10.00
57	58	55.15	0.630	0.0002	10.00
58	59	47.17	0.630	0.0002	10.00
59	60	92.41	0.630	0.0002	10.00
52	53	142.38	0.630	0.0002	10.00

Se i materiali hanno scabrezza diversa da quella omogenea equivalente,
i valori forniti sono il risultato di una conversione.

DESCRIZIONE DEI NODI SPECIALI

Nodo: 1
SERBATOIO
Carico iniziale (m) : 147.00
Portata di riferimento (l/s) : 2000.000
Perdita di carico (m) : 0.20
Area (mq) : 0.00
Livello minimo (m) : 146.50
Livello massimo (m) : 148.50
Eta acqua serbatoio (ore) : 0.00

Nodo: 33
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 34
Portata di riferimento (l/s) : 1700.000
Portata nominale (l/s) : 1550.000
Perdita di carico (m) : 0.20

Nodo: 35
VALVOLA LIMITATRICE DI PORTATA
Nodo di valle 36
Portata di riferimento (l/s) : 750.000
Portata nominale (l/s) : 500.000
Perdita di carico (m) : 0.20

T = 0 h 0 min

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* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1 - 2	TR	84	1.1	0.200	0.8	750.00002	0.85	0.8	0.07
2 - 3	TR	164	1.1	0.200	0.0	750.00001	0.85	0.5	0.08
3 - 4	TR	406	1.1	0.200	0.0	735.00002	0.83	0.5	0.20
4 - 5	TR	170	1.1	0.200	0.0	735.00001	0.83	0.5	0.08
5 - 6	TR	437	1.1	0.200	0.0	735.00002	0.83	0.5	0.21
6 - 7	TR	56	1.1	0.200	0.0	705.00001	0.80	0.5	0.03
7 - 8	TR	31	1.1	0.200	0.0	705.00002	0.80	0.5	0.01
8 - 9	TR	132	1.1	0.200	0.0	705.00001	0.80	0.5	0.06
9 - 10	TR	258	1.1	0.200	0.0	705.00002	0.80	0.5	0.12
10 - 11	TR	198	1.1	0.200	0.0	705.00001	0.80	0.5	0.09
11 - 12	TR	90	1.1	0.200	0.0	705.00001	0.80	0.5	0.04
12 - 13	TR	85	1.1	0.200	0.0	705.00001	0.80	0.5	0.04
13 - 14	TR	410	1.1	0.200	0.0	705.00000	0.80	0.5	0.19
14 - 15	TR	225	1.1	0.200	0.0	705.00001	0.80	0.5	0.10
15 - 16	TR	202	1.1	0.200	0.0	705.00001	0.80	0.5	0.09
16 - 17	TR	555	1.1	0.200	0.0	675.00001	0.76	0.4	0.23
17 - 18	TR	475	1.1	0.200	0.0	675.00001	0.76	0.4	0.20
18 - 19	TR	47	1.1	0.200	0.0	615.00001	0.70	0.3	0.02
19 - 20	TR	283	1.1	0.200	0.0	615.00001	0.70	0.3	0.10
20 - 21	TR	225	1.1	0.200	0.0	615.00002	0.70	0.3	0.08
21 - 22	TR	100	1.1	0.200	0.0	615.00001	0.70	0.3	0.03
22 - 23	TR	278	1.1	0.200	0.0	615.00002	0.70	0.3	0.10
23 - 24	TR	194	1.1	0.200	0.0	615.00001	0.70	0.3	0.07
24 - 25	TR	433	1.1	0.200	0.0	510.00001	0.58	0.2	0.11
25 - 26	TR	193	1.1	0.200	0.0	510.00002	0.58	0.2	0.05
26 - 27	TR	221	1.1	0.200	0.0	510.00002	0.58	0.2	0.05
27 - 28	TR	200	1.1	0.200	0.0	510.00002	0.58	0.2	0.05
28 - 29	TR	110	1.1	0.200	0.0	510.00001	0.58	0.2	0.03
29 - 30	TR	407	1.1	0.200	0.0	510.00002	0.58	0.2	0.10
30 - 31	TR	35	1.1	0.200	0.0	510.00001	0.58	0.2	0.01

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ADD_TAVO SIM_V3A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
31	-	32	TR	35	1.1	0.200	0.0	510.00002	0.58		0.2	0.01
32	-	33	TR	118	1.1	0.200	0.0	510.00002	0.58		0.2	0.03
33	-	34		89	1.1	0.200	1.1	465.00001	0.53	m	0.4	0.03
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49	M	2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88		1.0	0.09
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.33	146.93	0.00	
3	-15.00000	143.05	3.80	146.85	0.00	
4	0.00000	140.20	6.45	146.65	0.00	
5	0.00000	137.20	9.36	146.56	0.00	
6	-30.00000	132.40	13.95	146.35	0.00	
7	0.00000	132.30	14.02	146.32	0.00	
8	0.00000	132.20	14.11	146.31	0.00	
9	0.00000	132.20	14.05	146.25	0.00	
10	0.00000	130.95	15.18	146.13	0.00	
11	0.00000	129.30	16.74	146.04	0.00	
12	0.00000	126.20	19.80	146.00	0.00	
13	0.00000	127.20	18.76	145.96	0.00	
14	0.00000	123.20	22.58	145.78	0.00	
15	0.00000	123.55	22.13	145.68	0.00	
16	-30.00000	123.50	22.09	145.59	0.00	
17	0.00000	118.20	27.16	145.36	0.00	
18	-60.00000	109.60	35.56	145.16	0.00	
19	0.00000	109.60	35.54	145.14	0.00	
20	0.00000	105.00	40.04	145.04	0.00	
21	0.00000	104.90	40.07	144.97	0.00	
22	0.00000	102.60	42.33	144.93	0.00	
23	0.00000	101.65	43.18	144.83	0.00	
24	-105.00000	101.15	43.62	144.77	0.00	
25	0.00000	95.10	49.56	144.66	0.00	
26	0.00000	91.70	52.92	144.62	0.00	
27	0.00000	91.95	52.61	144.56	0.00	
28	0.00000	90.75	53.76	144.51	0.00	
29	0.00000	89.00	55.49	144.49	0.00	
30	0.00000	86.70	57.69	144.39	0.00	
31	0.00000	84.40	59.98	144.38	0.00	
32	0.00000	86.30	58.07	144.37	0.00	
33	-45.00000	84.70	59.64	144.34	0.00	
34	0.00000	84.05	60.26	144.31	0.00	
35	0.00000	83.75	60.44	144.19	0.00	
36	0.00000	83.45	60.30	143.75	0.00	
37	0.00000	81.40	61.84	143.24	0.00	
38	0.00000	74.80	65.91	140.71	0.00	
39	0.00000	73.45	66.97	140.42	0.00	
40	0.00000	73.45	66.61	140.06	0.00	
41	0.00000	72.55	67.02	139.57	0.00	
42	-45.00000	73.65	65.51	139.16	0.00	
43	0.00000	73.65	65.30	138.95	0.00	
44	0.00000	71.25	67.26	138.51	0.00	
45	0.00000	69.10	68.92	138.02	0.00	
46	0.00000	65.55	72.02	137.57	0.00	
47	0.00000	61.45	75.87	137.32	0.00	
48	0.00000	63.45	73.78	137.23	0.00	
49	0.00000	66.60	70.48	137.08	0.00	
50	0.00000	67.10	69.57	136.67	0.00	

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	69.84	136.29	0.00	
52	0.00000	67.30	68.61	135.91	0.00	
53	-100.00000	66.55	69.03	135.58	0.00	
54	0.00000	66.95	68.48	135.43	0.00	
55	0.00000	63.65	71.60	135.25	0.00	
56	0.00000	63.45	71.57	135.02	0.00	
57	0.00000	62.85	72.05	134.90	0.00	
58	0.00000	62.05	72.77	134.82	0.00	
59	-45.00000	62.10	72.66	134.76	0.00	
60	-275.00000	61.15	73.51	134.66	0.00	m
33q34	0.00000	84.70	59.63	144.33	0.00	
35q36	0.00000	83.75	60.36	144.11	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-750.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 1 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	750.00002	0.85	0.8	0.07
2	-	3	TR	164	1.1	0.200	0.0	750.00001	0.85	0.5	0.08
3	-	4	TR	406	1.1	0.200	0.0	735.00002	0.83	0.5	0.20
4	-	5	TR	170	1.1	0.200	0.0	735.00001	0.83	0.5	0.08
5	-	6	TR	437	1.1	0.200	0.0	735.00002	0.83	0.5	0.21
6	-	7	TR	56	1.1	0.200	0.0	705.00001	0.80	0.5	0.03
7	-	8	TR	31	1.1	0.200	0.0	705.00002	0.80	0.5	0.01
8	-	9	TR	132	1.1	0.200	0.0	705.00001	0.80	0.5	0.06
9	-	10	TR	258	1.1	0.200	0.0	705.00002	0.80	0.5	0.12
10	-	11	TR	198	1.1	0.200	0.0	705.00001	0.80	0.5	0.09
11	-	12	TR	90	1.1	0.200	0.0	705.00001	0.80	0.5	0.04
12	-	13	TR	85	1.1	0.200	0.0	705.00001	0.80	0.5	0.04
13	-	14	TR	410	1.1	0.200	0.0	705.00000	0.80	0.5	0.19
14	-	15	TR	225	1.1	0.200	0.0	705.00001	0.80	0.5	0.10
15	-	16	TR	202	1.1	0.200	0.0	705.00001	0.80	0.5	0.09
16	-	17	TR	555	1.1	0.200	0.0	675.00001	0.76	0.4	0.23
17	-	18	TR	475	1.1	0.200	0.0	675.00001	0.76	0.4	0.20
18	-	19	TR	47	1.1	0.200	0.0	615.00001	0.70	0.3	0.02
19	-	20	TR	283	1.1	0.200	0.0	615.00001	0.70	0.3	0.10
20	-	21	TR	225	1.1	0.200	0.0	615.00002	0.70	0.3	0.08
21	-	22	TR	100	1.1	0.200	0.0	615.00001	0.70	0.3	0.03
22	-	23	TR	278	1.1	0.200	0.0	615.00002	0.70	0.3	0.10
23	-	24	TR	194	1.1	0.200	0.0	615.00001	0.70	0.3	0.07
24	-	25	TR	433	1.1	0.200	0.0	510.00001	0.58	0.2	0.11
25	-	26	TR	193	1.1	0.200	0.0	510.00002	0.58	0.2	0.05
26	-	27	TR	221	1.1	0.200	0.0	510.00002	0.58	0.2	0.05
27	-	28	TR	200	1.1	0.200	0.0	510.00002	0.58	0.2	0.05
28	-	29	TR	110	1.1	0.200	0.0	510.00001	0.58	0.2	0.03
29	-	30	TR	407	1.1	0.200	0.0	510.00002	0.58	0.2	0.10
30	-	31	TR	35	1.1	0.200	0.0	510.00001	0.58	0.2	0.01

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ADD_TAVO SIM_V3A

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
31	-	32	TR	35	1.1	0.200	0.0	510.00002	0.58		0.2	0.01
32	-	33	TR	118	1.1	0.200	0.0	510.00002	0.58		0.2	0.03
33	-	34		89	1.1	0.200	1.1	465.00001	0.53	m	0.4	0.03
34	-	35	TR	43	0.6	0.200	0.0	465.00000	1.49		2.9	0.12
35	Q	36		126	0.6	0.200	0.7	465.00000	1.49		3.5	0.44
36	-	37	TR	177	0.6	0.200	0.0	465.00001	1.49		2.9	0.50
37	-	38	TR	887	0.6	0.200	0.0	465.00001	1.49		2.9	2.54
38	-	39	TR	100	0.6	0.200	0.0	465.00001	1.49		2.9	0.29
39	-	40	TR	126	0.6	0.200	0.0	465.00001	1.49		2.9	0.36
40	-	41	TR	171	0.6	0.200	0.0	465.00002	1.49	M	2.9	0.49
41	-	42	TR	144	0.6	0.200	0.0	465.00001	1.49		2.9	0.41
42	-	43	TR	89	0.6	0.200	0.0	420.00000	1.35		2.3	0.21
43	-	44	TR	190	0.6	0.200	0.0	420.00002	1.35		2.3	0.45
44	-	45	TR	209	0.6	0.200	0.0	420.00000	1.35		2.3	0.49
45	-	46	TR	191	0.6	0.200	0.0	420.00000	1.35		2.3	0.45
46	-	47	TR	107	0.6	0.200	0.0	420.00002	1.35		2.3	0.25
47	-	48	TR	40	0.6	0.200	0.0	420.00001	1.35		2.3	0.09
48	-	49	TR	62	0.6	0.200	0.0	420.00001	1.35		2.3	0.15
49	-	50	TR	176	0.6	0.200	0.0	420.00001	1.35		2.3	0.41
50	-	51	TR	163	0.6	0.200	0.0	420.00002	1.35		2.3	0.38
51	-	52	TR	159	0.6	0.200	0.0	420.00001	1.35		2.3	0.37
53	-	54	TR	106	0.6	0.200	0.0	320.00000	1.03		1.4	0.15
54	-	55	TR	129	0.6	0.200	0.0	320.00000	1.03		1.4	0.18
55	-	56	TR	170	0.6	0.200	0.0	320.00001	1.03		1.4	0.23
56	-	57	TR	89	0.6	0.200	0.0	320.00001	1.03		1.4	0.12
57	-	58	TR	55	0.6	0.200	0.0	320.00001	1.03		1.4	0.08
58	-	59	TR	47	0.6	0.200	0.0	320.00001	1.03		1.4	0.07
59	-	60	TR	92	0.6	0.200	0.0	275.00001	0.88		1.0	0.09
52	-	53	TR	142	0.6	0.200	0.0	420.00000	1.35		2.3	0.33

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.33	146.93	0.00	
3	-15.00000	143.05	3.80	146.85	0.00	
4	0.00000	140.20	6.45	146.65	0.00	
5	0.00000	137.20	9.36	146.56	0.00	
6	-30.00000	132.40	13.95	146.35	0.00	
7	0.00000	132.30	14.02	146.32	0.00	
8	0.00000	132.20	14.11	146.31	0.00	
9	0.00000	132.20	14.05	146.25	0.00	
10	0.00000	130.95	15.18	146.13	0.00	
11	0.00000	129.30	16.74	146.04	0.00	
12	0.00000	126.20	19.80	146.00	0.00	
13	0.00000	127.20	18.76	145.96	0.00	
14	0.00000	123.20	22.58	145.78	0.00	
15	0.00000	123.55	22.13	145.68	0.00	
16	-30.00000	123.50	22.09	145.59	0.00	
17	0.00000	118.20	27.16	145.36	0.00	
18	-60.00000	109.60	35.56	145.16	0.00	
19	0.00000	109.60	35.54	145.14	0.00	
20	0.00000	105.00	40.04	145.04	0.00	
21	0.00000	104.90	40.07	144.97	0.00	
22	0.00000	102.60	42.33	144.93	0.00	
23	0.00000	101.65	43.18	144.83	0.00	
24	-105.00000	101.15	43.62	144.77	0.00	
25	0.00000	95.10	49.56	144.66	0.00	
26	0.00000	91.70	52.92	144.62	0.00	
27	0.00000	91.95	52.61	144.56	0.00	
28	0.00000	90.75	53.76	144.51	0.00	
29	0.00000	89.00	55.49	144.49	0.00	
30	0.00000	86.70	57.69	144.39	0.00	
31	0.00000	84.40	59.98	144.38	0.00	
32	0.00000	86.30	58.07	144.37	0.00	
33	-45.00000	84.70	59.64	144.34	0.00	
34	0.00000	84.05	60.26	144.31	0.00	
35	0.00000	83.75	60.44	144.19	0.00	
36	0.00000	83.45	60.30	143.75	0.00	
37	0.00000	81.40	61.84	143.24	0.00	
38	0.00000	74.80	65.91	140.71	0.00	
39	0.00000	73.45	66.97	140.42	0.00	
40	0.00000	73.45	66.61	140.06	0.00	
41	0.00000	72.55	67.02	139.57	0.00	
42	-45.00000	73.65	65.51	139.16	0.00	
43	0.00000	73.65	65.30	138.95	0.00	
44	0.00000	71.25	67.26	138.51	0.00	
45	0.00000	69.10	68.92	138.02	0.00	
46	0.00000	65.55	72.02	137.57	0.00	
47	0.00000	61.45	75.87	137.32	0.00	
48	0.00000	63.45	73.78	137.23	0.00	
49	0.00000	66.60	70.48	137.08	0.00	
50	0.00000	67.10	69.57	136.67	0.00	

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	69.84	136.29	0.00	
52	0.00000	67.30	68.61	135.91	0.00	
53	-100.00000	66.55	69.03	135.58	0.00	
54	0.00000	66.95	68.48	135.43	0.00	
55	0.00000	63.65	71.60	135.25	0.00	
56	0.00000	63.45	71.57	135.02	0.00	
57	0.00000	62.85	72.05	134.90	0.00	
58	0.00000	62.05	72.77	134.82	0.00	
59	-45.00000	62.10	72.66	134.76	0.00	
60	-275.00000	61.15	73.51	134.66	0.00	m
33q34	0.00000	84.70	59.63	144.33	0.00	
35q36	0.00000	83.75	60.36	144.11	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-750.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

T = 2 h 0 min

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* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
1	-	2	TR	84	1.1	0.200	0.8	375.00000	0.42	0.2	0.02
2	-	3	TR	164	1.1	0.200	0.0	375.00001	0.42	0.1	0.02
3	-	4	TR	406	1.1	0.200	0.0	367.50000	0.42	0.1	0.05
4	-	5	TR	170	1.1	0.200	0.0	367.50000	0.42	0.1	0.02
5	-	6	TR	437	1.1	0.200	0.0	367.50000	0.42	0.1	0.06
6	-	7	TR	56	1.1	0.200	0.0	352.50001	0.40	0.1	0.01
7	-	8	TR	31	1.1	0.200	0.0	352.50000	0.40	0.1	0.00
8	-	9	TR	132	1.1	0.200	0.0	352.50001	0.40	0.1	0.02
9	-	10	TR	258	1.1	0.200	0.0	352.50000	0.40	0.1	0.03
10	-	11	TR	198	1.1	0.200	0.0	352.50001	0.40	0.1	0.02
11	-	12	TR	90	1.1	0.200	0.0	352.50001	0.40	0.1	0.01
12	-	13	TR	85	1.1	0.200	0.0	352.50001	0.40	0.1	0.01
13	-	14	TR	410	1.1	0.200	0.0	352.50001	0.40	0.1	0.05
14	-	15	TR	225	1.1	0.200	0.0	352.50001	0.40	0.1	0.03
15	-	16	TR	202	1.1	0.200	0.0	352.50000	0.40	0.1	0.02
16	-	17	TR	555	1.1	0.200	0.0	337.50001	0.38	0.1	0.06
17	-	18	TR	475	1.1	0.200	0.0	337.50000	0.38	0.1	0.05
18	-	19	TR	47	1.1	0.200	0.0	307.50001	0.35	0.1	0.00
19	-	20	TR	283	1.1	0.200	0.0	307.50001	0.35	0.1	0.03
20	-	21	TR	225	1.1	0.200	0.0	307.50000	0.35	0.1	0.02
21	-	22	TR	100	1.1	0.200	0.0	307.50001	0.35	0.1	0.01
22	-	23	TR	278	1.1	0.200	0.0	307.50000	0.35	0.1	0.03
23	-	24	TR	194	1.1	0.200	0.0	307.50001	0.35	0.1	0.02
24	-	25	TR	433	1.1	0.200	0.0	255.00001	0.29	0.1	0.03
25	-	26	TR	193	1.1	0.200	0.0	255.00000	0.29	0.1	0.01
26	-	27	TR	221	1.1	0.200	0.0	255.00001	0.29	0.1	0.01
27	-	28	TR	200	1.1	0.200	0.0	255.00001	0.29	0.1	0.01
28	-	29	TR	110	1.1	0.200	0.0	255.00001	0.29	0.1	0.01
29	-	30	TR	407	1.1	0.200	0.0	255.00000	0.29	0.1	0.03
30	-	31	TR	35	1.1	0.200	0.0	255.00002	0.29	0.1	0.00

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ADD_TAVO SIM_V3A

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)	sfr (E-3)	dH (m)
31 - 32	TR	35	1.1	0.200	0.0	255.00000	0.29	0.1	0.00
32 - 33	TR	118	1.1	0.200	0.0	255.00000	0.29	0.1	0.01
33 - 34		89	1.1	0.200	1.1	232.50001	0.26 m	0.1	0.01
34 - 35	TR	43	0.6	0.200	0.0	232.50000	0.75	0.7	0.03
35 - 36		126	0.6	0.200	0.7	232.50000	0.75	0.9	0.11
36 - 37	TR	177	0.6	0.200	0.0	232.50001	0.75	0.7	0.13
37 - 38	TR	887	0.6	0.200	0.0	232.50000	0.75	0.7	0.66
38 - 39	TR	100	0.6	0.200	0.0	232.50000	0.75	0.7	0.07
39 - 40	TR	126	0.6	0.200	0.0	232.50000	0.75	0.7	0.09
40 - 41	TR	171	0.6	0.200	0.0	232.50001	0.75 M	0.7	0.13
41 - 42	TR	144	0.6	0.200	0.0	232.50001	0.75	0.7	0.11
42 - 43	TR	89	0.6	0.200	0.0	210.00000	0.67	0.6	0.05
43 - 44	TR	190	0.6	0.200	0.0	210.00001	0.67	0.6	0.12
44 - 45	TR	209	0.6	0.200	0.0	210.00000	0.67	0.6	0.13
45 - 46	TR	191	0.6	0.200	0.0	210.00000	0.67	0.6	0.12
46 - 47	TR	107	0.6	0.200	0.0	210.00001	0.67	0.6	0.07
47 - 48	TR	40	0.6	0.200	0.0	210.00001	0.67	0.6	0.02
48 - 49	TR	62	0.6	0.200	0.0	210.00000	0.67	0.6	0.04
49 - 50	TR	176	0.6	0.200	0.0	210.00000	0.67	0.6	0.11
50 - 51	TR	163	0.6	0.200	0.0	210.00001	0.67	0.6	0.10
51 - 52	TR	159	0.6	0.200	0.0	210.00001	0.67	0.6	0.10
53 - 54	TR	106	0.6	0.200	0.0	160.00000	0.51	0.4	0.04
54 - 55	TR	129	0.6	0.200	0.0	160.00000	0.51	0.4	0.05
55 - 56	TR	170	0.6	0.200	0.0	160.00000	0.51	0.4	0.06
56 - 57	TR	89	0.6	0.200	0.0	160.00000	0.51	0.4	0.03
57 - 58	TR	55	0.6	0.200	0.0	160.00000	0.51	0.4	0.02
58 - 59	TR	47	0.6	0.200	0.0	160.00000	0.51	0.4	0.02
59 - 60	TR	92	0.6	0.200	0.0	137.50000	0.44	0.3	0.03
52 - 53	TR	142	0.6	0.200	0.0	210.00000	0.67	0.6	0.09

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*M
2	0.00000	144.60	2.38	146.98	0.00	
3	-7.50000	143.05	3.91	146.96	0.00	
4	0.00000	140.20	6.71	146.91	0.00	
5	0.00000	137.20	9.68	146.88	0.00	
6	-15.00000	132.40	14.43	146.83	0.00	
7	0.00000	132.30	14.52	146.82	0.00	
8	0.00000	132.20	14.62	146.82	0.00	
9	0.00000	132.20	14.60	146.80	0.00	
10	0.00000	130.95	15.82	146.77	0.00	
11	0.00000	129.30	17.45	146.75	0.00	
12	0.00000	126.20	20.54	146.74	0.00	
13	0.00000	127.20	19.53	146.73	0.00	
14	0.00000	123.20	23.48	146.68	0.00	
15	0.00000	123.55	23.10	146.65	0.00	
16	-15.00000	123.50	23.13	146.63	0.00	
17	0.00000	118.20	28.37	146.57	0.00	
18	-30.00000	109.60	36.91	146.51	0.00	
19	0.00000	109.60	36.91	146.51	0.00	
20	0.00000	105.00	41.48	146.48	0.00	
21	0.00000	104.90	41.56	146.46	0.00	
22	0.00000	102.60	43.85	146.45	0.00	
23	0.00000	101.65	44.78	146.43	0.00	
24	-52.50000	101.15	45.26	146.41	0.00	
25	0.00000	95.10	51.28	146.38	0.00	
26	0.00000	91.70	54.67	146.37	0.00	
27	0.00000	91.95	54.40	146.35	0.00	
28	0.00000	90.75	55.59	146.34	0.00	
29	0.00000	89.00	57.33	146.33	0.00	
30	0.00000	86.70	59.61	146.31	0.00	
31	0.00000	84.40	61.91	146.31	0.00	
32	0.00000	86.30	60.00	146.30	0.00	
33	-22.50000	84.70	61.60	146.30	0.00	
34	0.00000	84.05	62.24	146.29	0.00	
35	0.00000	83.75	62.50	146.25	0.00	
36	0.00000	83.45	62.69	146.14	0.00	
37	0.00000	81.40	64.61	146.01	0.00	
38	0.00000	74.80	70.55	145.35	0.00	
39	0.00000	73.45	71.83	145.28	0.00	
40	0.00000	73.45	71.73	145.18	0.00	
41	0.00000	72.55	72.51	145.06	0.00	
42	-22.50000	73.65	71.30	144.95	0.00	
43	0.00000	73.65	71.25	144.90	0.00	
44	0.00000	71.25	73.53	144.78	0.00	
45	0.00000	69.10	75.55	144.65	0.00	
46	0.00000	65.55	78.99	144.54	0.00	
47	0.00000	61.45	83.02	144.47	0.00	
48	0.00000	63.45	81.00	144.45	0.00	
49	0.00000	66.60	77.81	144.41	0.00	
50	0.00000	67.10	77.20	144.30	0.00	

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	77.75	144.20	0.00	
52	0.00000	67.30	76.80	144.10	0.00	
53	-50.00000	66.55	77.47	144.02	0.00	
54	0.00000	66.95	77.03	143.98	0.00	
55	0.00000	63.65	80.28	143.93	0.00	
56	0.00000	63.45	80.42	143.87	0.00	
57	0.00000	62.85	80.99	143.84	0.00	
58	0.00000	62.05	81.77	143.82	0.00	
59	-22.50000	62.10	81.70	143.80	0.00	
60	-137.50000	61.15	82.63	143.78	0.00	m
33q34	0.00000	84.70	61.59	146.29	0.00	
35q36	0.00000	83.75	62.49	146.24	0.00	

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	-375.00000

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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T = 3 h 0 min

* RISULTATI DI RAMO *

Np	-	Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
1	-	2	L	84	1.1	0.200	0.8	-0.00002	-0.00		-0.0	-0.00
2	-	3	L	164	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
3	-	4	L	406	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
4	-	5	L	170	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
5	-	6	L	437	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
6	-	7	L	56	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
7	-	8	L	31	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
8	-	9	L	132	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
9	-	10	L	258	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
10	-	11	L	198	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
11	-	12	L	90	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
12	-	13	L	85	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
13	-	14	L	410	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
14	-	15	L	225	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
15	-	16	L	202	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
16	-	17	L	555	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
17	-	18	L	475	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
18	-	19	L	47	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
19	-	20	L	283	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
20	-	21	L	225	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
21	-	22	L	100	1.1	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
22	-	23	L	278	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
23	-	24	L	194	1.1	0.200	0.0	0.00001	0.00		0.0	0.00
24	-	25	L	433	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
25	-	26	L	193	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
26	-	27	L	221	1.1	0.200	0.0	0.00000	0.00		0.0	0.00
27	-	28	L	200	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
28	-	29	L	110	1.1	0.200	0.0	0.00002	0.00		0.0	0.00
29	-	30	L	407	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
30	-	31	L	35	1.1	0.200	0.0	0.00002	0.00	M	0.0	0.00

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ADD_TAVO SIM_V3A

* RISULTATI DI RAMO *

Np - Na	FLOW TYPE	L (m)	Di (m)	eps (mm)	csi (-)	q (l/s)	V (m/s)		sfr (E-3)	dH (m)
31 - 32	L	35	1.1	0.200	0.0	-0.00002	-0.00		-0.0	-0.00
32 - 33	L	118	1.1	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
33 - 34		89	1.1	0.200	0.0	0.00000	0.00		-0.0	-0.00
34 - 35	L	43	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
35 - 36		126	0.6	0.200	-2831.8	0.00000	0.00		0.0	0.00
36 - 37	L	177	0.6	0.200	0.0	-0.00000	-0.00	m	-0.0	-0.00
37 - 38	L	887	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
38 - 39	L	100	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
39 - 40	L	126	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
40 - 41	L	171	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
41 - 42	L	144	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
42 - 43	L	89	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
43 - 44	L	190	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
44 - 45	L	209	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
45 - 46	L	191	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
46 - 47	L	107	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
47 - 48	L	40	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
48 - 49	L	62	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
49 - 50	L	176	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
50 - 51	L	163	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
51 - 52	L	159	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
53 - 54	L	106	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
54 - 55	L	129	0.6	0.200	0.0	0.00001	0.00		0.0	0.00
55 - 56	L	170	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
56 - 57	L	89	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
57 - 58	L	55	0.6	0.200	0.0	0.00000	0.00		0.0	0.00
58 - 59	L	47	0.6	0.200	0.0	-0.00001	-0.00		-0.0	-0.00
59 - 60	L	92	0.6	0.200	0.0	-0.00000	-0.00		-0.0	-0.00
52 - 53	L	142	0.6	0.200	0.0	0.00001	0.00		0.0	0.00

(> \) = clapet aperto/chiuso
(L PL TR AT) = regime: Laminare/Par. liscia/TRansiz./Ass. Turb.
P limitatore di pressione
Q limitatore di portata

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
1	0.00000	145.20	1.80	147.00	0.00	*m
2	0.00000	144.60	2.40	147.00	0.00	
3	0.00000	143.05	3.95	147.00	0.00	
4	0.00000	140.20	6.80	147.00	0.00	
5	0.00000	137.20	9.80	147.00	0.00	
6	0.00000	132.40	14.60	147.00	0.00	
7	0.00000	132.30	14.70	147.00	0.00	
8	0.00000	132.20	14.80	147.00	0.00	
9	0.00000	132.20	14.80	147.00	0.00	
10	0.00000	130.95	16.05	147.00	0.00	
11	0.00000	129.30	17.70	147.00	0.00	
12	0.00000	126.20	20.80	147.00	0.00	
13	0.00000	127.20	19.80	147.00	0.00	
14	0.00000	123.20	23.80	147.00	0.00	
15	0.00000	123.55	23.45	147.00	0.00	
16	0.00000	123.50	23.50	147.00	0.00	
17	0.00000	118.20	28.80	147.00	0.00	
18	0.00000	109.60	37.40	147.00	0.00	
19	0.00000	109.60	37.40	147.00	0.00	
20	0.00000	105.00	42.00	147.00	0.00	
21	0.00000	104.90	42.10	147.00	0.00	
22	0.00000	102.60	44.40	147.00	0.00	
23	0.00000	101.65	45.35	147.00	0.00	
24	0.00000	101.15	45.85	147.00	0.00	
25	0.00000	95.10	51.90	147.00	0.00	
26	0.00000	91.70	55.30	147.00	0.00	
27	0.00000	91.95	55.05	147.00	0.00	
28	0.00000	90.75	56.25	147.00	0.00	
29	0.00000	89.00	58.00	147.00	0.00	
30	0.00000	86.70	60.30	147.00	0.00	
31	0.00000	84.40	62.60	147.00	0.00	
32	0.00000	86.30	60.70	147.00	0.00	
33	0.00000	84.70	62.30	147.00	0.00	
34	0.00000	84.05	62.95	147.00	0.00	
35	0.00000	83.75	63.25	147.00	0.00	
36	0.00000	83.45	63.55	147.00	0.00	
37	0.00000	81.40	65.60	147.00	0.00	
38	0.00000	74.80	72.20	147.00	0.00	
39	0.00000	73.45	73.55	147.00	0.00	
40	0.00000	73.45	73.55	147.00	0.00	
41	0.00000	72.55	74.45	147.00	0.00	
42	0.00000	73.65	73.35	147.00	0.00	
43	0.00000	73.65	73.35	147.00	0.00	
44	0.00000	71.25	75.75	147.00	0.00	
45	0.00000	69.10	77.90	147.00	0.00	
46	0.00000	65.55	81.45	147.00	0.00	
47	0.00000	61.45	85.55	147.00	0.00	
48	0.00000	63.45	83.55	147.00	0.00	
49	0.00000	66.60	80.40	147.00	0.00	
50	0.00000	67.10	79.90	147.00	0.00	

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ADD_TAVO SIM_V3A

* RISULTATI DI NODO *

nodo	qe (l/s)	z (m)	p (m)	h (m)	perdite (l/s)*1000	
51	0.00000	66.45	80.55	147.00	0.00	
52	0.00000	67.30	79.70	147.00	0.00	
53	0.00000	66.55	80.45	147.00	0.00	
54	0.00000	66.95	80.05	147.00	0.00	
55	0.00000	63.65	83.35	147.00	0.00	
56	0.00000	63.45	83.55	147.00	0.00	
57	0.00000	62.85	84.15	147.00	0.00	
58	0.00000	62.05	84.95	147.00	0.00	
59	0.00000	62.10	84.90	147.00	0.00	
60	0.00000	61.15	85.85	147.00	0.00	
33q34	0.00000	84.70	62.30	147.00	0.00	
35q36	0.00000	83.75	63.25	147.00	0.00	M

^ = p>pn * = carico imposto
M = carico massimo m = carico minimo
qe>0 se entrante nel nodo

* NODI A CARICO IMPOSTO *

nodo	hs (m)	qs (l/s)
1	147.00	0.00002

qs>0 se entrante nel serbatoio

* VALVOLA SARACINESCA – VALVOLA LIMITATRICE DI PORTATA*

nodi	q imposta (l/s)	q raggiunta (l/s)	perdita concentrata (x altezza cinetica)
23 - 44q	-		Valvola completamente aperta
33 - 34q	-		Valvola completamente aperta
35 - 36q	-		Valvola completamente aperta
45 - 46q	-		Valvola completamente aperta

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