

operator:		Mode of operation :		HC :			
		Kind of system : ☒ wet system ☐ dry system ☐ dry system with accelerator ☐ dry system with pilot control ☐ tail-end sprinkler system		Active area: ☒ favourable ☐ least favourable Demand : ☒ pressure at sprinkler ☐ pump pressure			
Operator : Irina Kerõis		Roughness of pipe (C-value)		Use of pipes according to DIN			
		Supply of hydrants with water :		l/min at node No. Branch line no. : 0 ; Sprinkler no. : 0			
Project-No.: FRT 711	Operating company : Maardu			Ceiling protec. Rack protec.			
		Height of storage (m)					
		min. water admission (mm/min)					
Person in charge :		real active area (ea) (m ²)					
		max. protection area/sprinkler in aa (m ²)					
		No. of sprinklers / active area					
		No. of additional sprinkler / active area					
Date : 27.10.23	Object : Tööstushoone	hydraulic considered no.of sprinkler					
		No. of protected decks					
		biggest distance of sprinkler (m)					

Pressure at feed-In point / Pump / Reserve	[bar]	6,342	according Hazen-Williams
Water rate at point To feed In / Pump / Reserve	[l/min]	150,10	
hydraulic unfavorable sprinkler in the active area			
No. of pipe / Sprinkler-No.		R 6- S5 / 1	
Minimum pressure / Required density	[bar]	5,500	150,100
geodetic difference in height sprinkler - point to feed	[m]	1,50	
geodetic difference in height lowest sprinkler - point to feed	[m]	1,50	
max. sprinkler pressure in the active area	[bar]	5,500	
min. sprinkler pressure in the active area	[bar]	5,500	
Max. water speed in the active area	[m/s]	2,23	
No. of sprinklers in the active area/ no. of the active area		1 / 1	

Name	Beg.- node	End.- node	Pbeg	K- factor	QSprinkler	QBranch	dia- meter	C-Value	length of pipe	Fittings B/W/T/S/V/K	hydraulic total length	Δ p friction	difference in height	Δ p total	Pend	v	remarks
			[bar]		[l/min]	[l/min]	DN		[m]	kind and no	[m]	[bar/m]	[m]	[bar]	[bar]	[m/s]	
V 30- 4	16	15	6,342			150,1	65	120	1,00	1K	6,20	0,0009		0,0055	6,337	0,63	
V 30- 3	14	15	5,782			-150,1	65	120	5,60	1B	6,48	-0,0009	-5,60	-0,5551	6,337	0,63	
V 30- 2	13	14	5,780			-150,1	65	120	0,60	1B	1,48	-0,0009		-0,0013	5,782	0,63	
V 30- 1	9	13	5,779			-150,1	65	120	0,30	1B	1,18	-0,0009		-0,0010	5,780	0,63	
R 9- 1	1	2	5,779				50	120	4,20		4,20	-0,0000	-4,20	-0,4120	6,191	0,00	
R 8- 4	12	1	5,779				50	120	1,42		1,42				5,779		
R 8- 3	11	12	5,779				50	120	8,60		8,60	0,0000		0,0000	5,779	0,00	
R 8- 2	10	11	5,779				50	120	2,70		2,70				5,779		
R 8- 1	9	10	5,779				50	120	0,20		0,20	0,0000		0,0000	5,779	0,00	
R 7- 1	6	9	5,727			-150,1	50	120	15,30	1T	18,21	-0,0029		-0,0524	5,779	1,03	
R 6- 5	7	8	5,727				50	120	4,10		4,10	-0,0000	-4,10	-0,4022	6,129	0,00	
R 6- 4	6	7	5,727				50	120	0,34		0,34				5,727		
R 6- 3	5	6	5,690			-150,1	50	120	12,80		12,80	-0,0029		-0,0369	5,727	1,03	
R 6- 2	4	5	5,685			-150,1	50	120	0,34	1W	1,80	-0,0029		-0,0052	5,690	1,03	
R 6- 1	3	4	6,071			-150,1	50	120	4,10	1W	5,56	-0,0029	4,10	0,3862	5,685	1,03	
R 6- S5	3	19	6,071	64	150,1	150,1	32	120	30,00		30,00	0,0190		0,5706	5,500	2,23	

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Table of equivalent length VDS;DIN EN 10220/10255 geschw.

Project: FRT 711

No.	DN-value	Dia-meter [mm]	Tee	Elbow welded	Elbow	Gate valve	Non-return valve	Wet pipe alarm valve	Dry pipe alarm valve	Deluge- valve
1	15	16,00	0,98	0,24	0,49	0,00	0,00	0,00	0,00	0,00
2	20	21,60	1,25	0,30	0,63	0,00	0,00	0,00	0,00	0,00
3	25	27,20	1,54	0,36	0,77	0,00	0,00	0,00	0,00	0,00
4	32	37,80	2,13	0,49	1,04	0,00	0,00	0,00	0,00	0,00
5	40	43,70	2,44	0,56	1,22	0,00	0,00	0,00	0,00	0,00
6	50	55,70	2,91	0,69	1,46	0,38	2,42	8,50	0,00	3,10
7	65	70,90	3,81	0,88	1,89	0,51	5,20	4,00	10,70	4,00
8	80	83,10	4,75	1,10	2,37	0,63	8,00	4,60	5,00	7,10
9	100	107,90	6,10	1,43	3,04	0,81	5,90	5,40	8,00	12,00
10	125	132,50	7,36	1,72	3,67	0,97	7,10	0,00	0,00	0,00
11	150	160,30	8,61	2,00	4,30	1,13	9,80	9,60	11,60	26,90
12	200	210,10	11,34	2,64	5,67	1,50	10,50	11,20	0,00	0,00
13	250	263,00	14,85	3,35	7,42	1,97	12,30	0,00	0,00	0,00
14	300	312,70	18,30	4,90	8,30	2,10	19,80	0,00	0,00	0,00
15	350	344,40	21,70	6,40	10,70	2,40	23,20	0,00	0,00	0,00
16	400	393,80	24,40	7,30	12,20	2,70	26,50	0,00	0,00	0,00
17	450	444,40	27,10	8,20	0,00	3,00	32,60	0,00	0,00	0,00
18	500	495,40	30,20	9,10	0,00	3,70	44,00	0,00	0,00	0,00
19	600	597,40	36,60	10,70	0,00	4,60	50,00	0,00	0,00	0,00
20	750	733,60	44,20	13,70	0,00	5,50	68,00	0,00	0,00	0,00
21	900	868,00	53,30	16,80	0,00	6,50	83,00	0,00	0,00	0,00

Company:

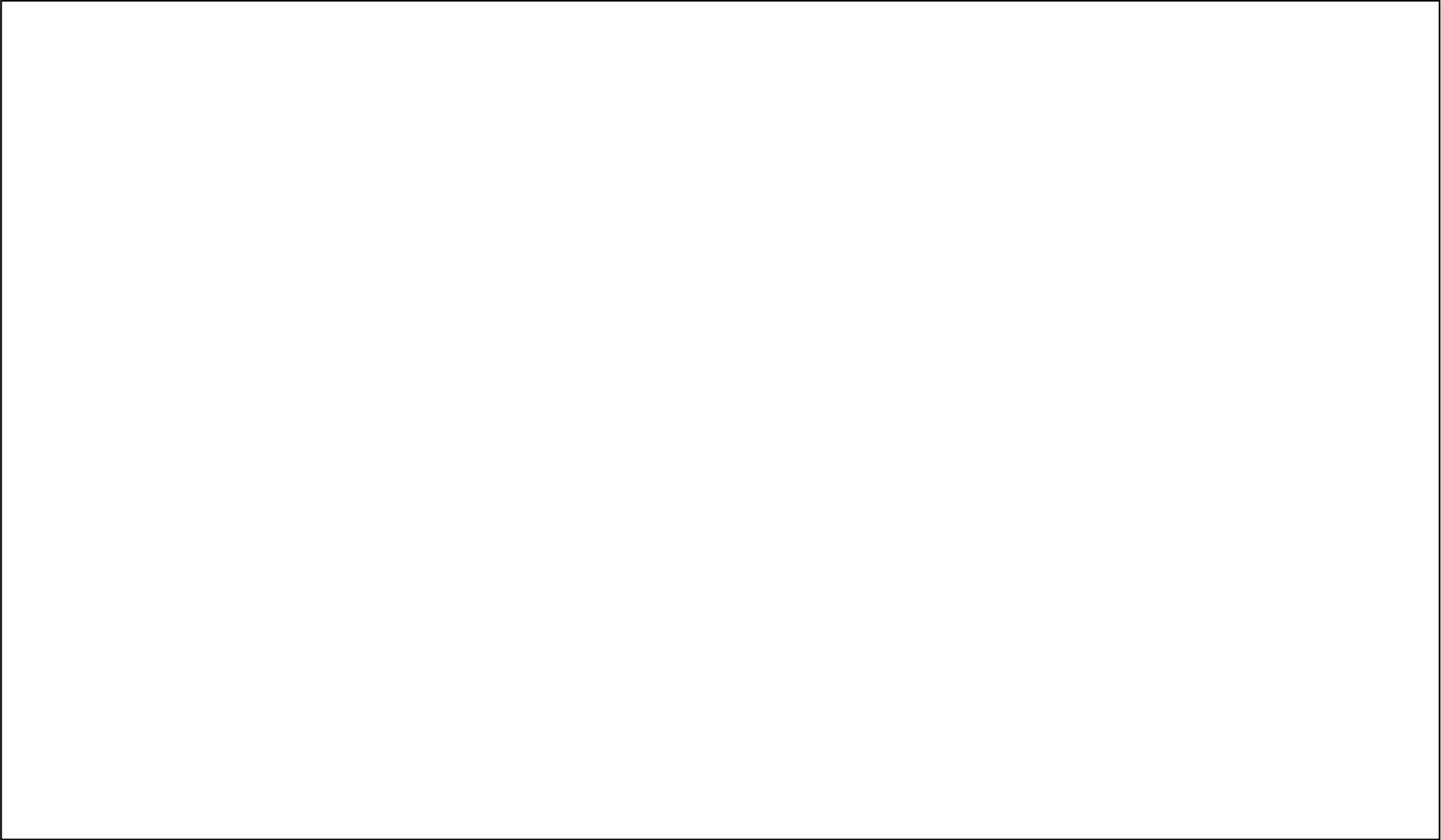
No. of project: FRT 711

Type of pump:

Object: Tööstushoone

Floor: Vaardu

No. of active area: 1



P hydr = 6,342 bar
P nominal = 0,000 bar

Q hydr = 150,1 l/min
Q nominal = 0,0 l/min

Hint : Division = $Q^{1.85}$

Fittings list

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Number	Type	1. DN-Value	2. DN-Value	3. DN-Value	4. DN-Value
1					
7	Elbow	50	50		
3	Arc	65	65		
1	Tee	50	50	50	
1	Tee	65	50	50	
1	Ceek valve				

List of pipes

DN-Value	Branch pipes		Supply pipes	
	Length [m]	Total volume [l]	Length [m]	Total volume [l]
32	30,00	33,67		
50	54,10	131,82		
65	0,00	0,00	7,50	29,61

Name of project: FRT 711

Pipe list

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DN-Value	Length [m]	Identifier	Beg- node	End- node
65	5,60	V 30-3	14	15
65	1,00	V 30-4	15	16
65	0,60	V 30-2	13	14
65	0,30	V 30-1	9	13
50	30,00	S 7-1	8	18
50	15,30	R 7-1	6	9
50	12,80	R 6-3	5	6
50	8,60	R 8-3	11	12
50	4,20	R 9-1	1	2
50	4,10	R 6-1	3	4
		R 6-5	7	8
50	2,70	R 8-2	10	11
50	1,42	R 8-4	12	1
50	0,34	R 6-2	4	5
		R 6-4	6	7
50	0,20	R 8-1	9	10
32	30,00	S 5-1	3	19
		S 6-1	2	17