

Project ref/no = UPOL OLOMOUC LF
Client ref/no = ATELIER VELEHRADSKY
Address/notes 1 =
Address/notes 2 =
Address/notes 3 =
Building ref/no =
Hazard classification =
System/design ref (MR/MF) = [MR] [Selected 12 most remotest heads]
Installation ref/no = MOKRA SOUSTAVA 1NP-4NP
Drawing(s) ref/no =
Drawing(s) dates/issues =
Reviewer/Insurance/Fire =
Designer/Dept = Ing. Ondrej Krupka
Comments 1 = Sprinkplan s.r.o.
Comments 2 = projekty pozarnich sprinkleru
Start X Y + building DXF = www.sprinkplan.cz
Design area sq.m = 72
Elbows welded above mm = 50
Specific gravity = 1.00
Node no for zero datum = 0
Design authority = EN12845 Rules (latest) using Hazen-Williams formula

Installer/designer = Program provided free by Alan Ashfield

The user name and contact details are stored
in the file USERINFO.TXT which you can either
delete and re-enter OR amend with NOTEPAD.

Telephone no(s) =
FAX no(s) =
Registration = 13116 from 01 květen 2013 [4E1AA65A]
Reference = krupk on DESKTOP-J9TFB1M to Bullzip PDF Printer
Data file = [From UPOL HV.dxf] last amended

All pages checked by

Sprinklers operating = 12 out of 32 entered
Area of operation = 75.55 sq.m
Max area per head = 9.000 sq.m
Min head density = 6.850 mm/min at node 223
Min head pressure = 0.350 bars at node 214
Max head pressure = 0.594 bars at node 223
Max head height = 19.720 m
Pipes = 54 + 70 with zero flow
Min pipe size = 25 mm
Max pressure drop = 0.865 bars in pipe 189 190
Max pressure drop/metre = 96.25 mbar/m in pipe 193 194
Max velocity = 4.35 m/s in pipe 193 194
Hydrants / hoses reels = 0 L/min
Volume of pipework = 1.120 cu.m
Actual density of discharge = 8.35 mm/min over 5.760 sq.m
Four most remote heads = 203 204 212 214

SOURCE DUTY = 628.2 L/min at 4.277 bars [node 100]

OPERATING SPRINKLER HEADS AND HYDRANTS

Node no	Size mm	"K" factor	Flows Min	in L/min Actual	L/min %	Area sq.m	Density Min	mm/min Actual	Pipe mm	MRH #	Height m	Pressures Min	Normal	Vel	bars Total
195	15.0	80.00	47.3	54.5	15	5.760	5.00	9.47	25		19.720	0.35	0.465		0.465
197	15.0	80.00	47.3	49.1	4	5.622	5.00	8.73	25		19.720	0.35	0.376		0.376
199	15.0	80.00	47.3	48.0	1	5.483	5.00	8.76	25		19.720	0.35	0.361		0.361
203	15.0	80.00	47.3	47.7	1	5.760	5.00	8.28	25	1	19.720	0.35	0.356		0.356
204	15.0	80.00	47.3	48.8	3	5.760	5.00	8.47	25	2	19.720	0.35	0.372		0.372
205	15.0	80.00	47.3	54.2	15	5.760	5.00	9.41	25		19.720	0.35	0.459		0.459
210	15.0	80.00	47.3	53.8	14	6.480	5.00	8.31	25		19.720	0.35	0.453		0.453
212	15.0	80.00	47.3	48.4	2	6.480	5.00	7.47	25	3	19.720	0.35	0.366		0.366
214	15.0	80.00	47.3	47.3	0	6.481	5.00	7.30	25	4	19.720	0.35	0.350		0.350
218	15.0	80.00	47.3	56.7	20	6.480	5.00	8.75	25		19.720	0.35	0.502		0.502
219	15.0	80.00	47.3	57.9	22	6.480	5.00	8.94	25		19.720	0.35	0.525		0.525
223	15.0	80.00	47.3	61.6	30	9.000	5.00	6.85	25		19.720	0.35	0.594		0.594

HYDRAULICALLY SIGNIFICANT PIPES

N o d e s	Start	End	Size mm	ref	Flow L/min	Length m	Direction <~>slope	Fittings +options	Equiv len m	Vel m/s	Static m	Height end m	Pressures Start	Frict	Vel	bars End
100	110	100	DIN		628.2	0.200	West			1.15		0.000	4.277	0.000		4.277
110	111	100	DIN		628.2	3.100	Up	W	1.40	1.15	3.100	3.100	4.277	0.007		3.966
111	112	100	DIN		628.2	6.088	West	W	1.40	1.15		3.100	3.966	0.012		3.954
112	113	100	DIN		628.2	2.019	North	W	1.40	1.15		3.100	3.954	0.006		3.948
113	114	100	DIN		628.2	6.720	Up	W	1.40	1.15	6.720	9.820	3.948	0.013		3.277
114	115	100	DIN		628.2	0.520	North	W	1.40	1.15		9.820	3.277	0.003		3.273
115	116	100	DIN		628.2	0.584	East	WSV	6.50	1.15		9.820	3.273	0.012		3.262
116	117	100	DIN		628.2	0.116	North	W	1.40	1.15		9.820	3.262	0.002		3.259
117	118	100	DIN		628.2	1.200	Down	WBV	6.00	1.15	-1.200	8.620	3.259	0.012		3.365
118	119	100	DIN		628.2	1.484	West	W	1.40	1.15		8.620	3.365	0.005		3.361

HYDRAULICALLY SIGNIFICANT PIPES

N o d e s Start	e n d	S i z e mm	r e f	F l o w L/min	Length m	Direction <~>slope	Fittings +options	Equiv len m	Vel m/s	Static m	Height end m	P r e s s u r e s Start Frict v e l	b a r E n d
119	120	80	DIN	628.2	1.200	Up	WSVBV	8.60	1.93	1.200	9.820	3.361 0.057	3.186
120	187	80	DIN	628.2	0.636	North	T	4.80	1.93	9.900	9.820	3.186 0.032	3.155
187	188	65	DIN	628.2	9.900	Up	W	0.88	2.65		19.720	3.155 0.135	2.049
188	189	65	DIN	628.2	1.158	North	W	0.88	2.65		19.720	2.049 0.026	2.023
189	190	50	DIN	339.1	49.301	West	T	2.90	2.56		19.720	2.023 0.865	1.159
190	191	50	DIN	339.1	12.390	North	E	1.50	2.56		19.720	1.159 0.230	0.928
191	192	50	DIN	13.3	0.250	East	T	2.90	0.10		19.720	0.928 0.000	0.928
192	193	50	DIN	-137.4	2.100	East			1.04		19.720	0.928 0.007	0.935
193	194	25	DIN	151.6	2.640	North	T	1.50	4.35		19.720	0.935 0.398	0.536
194	195	25	DIN	54.5	0.360	West	4ET	4.58	1.56		19.720	0.536 0.072	0.465
194	196	25	DIN	97.1	2.400	North			2.79		19.720	0.536 0.101	0.435
196	197	25	DIN	49.1	0.360	West	4ET	4.58	1.41		19.720	0.435 0.059	0.376
196	198	25	DIN	48.0	2.285	North			1.38		19.720	0.435 0.026	0.409
198	199	25	DIN	48.0	0.360	West	5E	3.85	1.38		19.720	0.409 0.048	0.361
192	200	25	DIN	150.7	2.640	North	T	1.50	4.32		19.720	0.928 0.394	0.534
200	201	25	DIN	96.5	2.400	North			2.77		19.720	0.534 0.100	0.434
201	202	25	DIN	47.7	2.400	North			1.37		19.720	0.434 0.027	0.407
202	203	25	DIN	47.7	0.660	West	5E	3.85	1.37		19.720	0.407 0.051	0.356
201	204	25	DIN	48.8	0.660	West	4ET	4.58	1.40		19.720	0.434 0.062	0.372
200	205	25	DIN	54.2	0.660	West	4ET	4.58	1.55		19.720	0.534 0.075	0.459
191	206	50	DIN	325.9	0.900	West	T	2.90	2.46		19.720	0.928 0.058	0.870
206	207	50	DIN	325.9	1.500	North	E	1.50	2.46		19.720	0.870 0.046	0.824
207	208	50	DIN	325.9	2.100	West	E	1.50	2.46		19.720	0.824 0.055	0.768
208	209	25	DIN	149.6	1.140	North	T	1.50	4.29		19.720	0.768 0.248	0.521
209	210	25	DIN	53.8	0.190	East	4ET	4.58	1.54		19.720	0.521 0.068	0.453
209	211	25	DIN	95.7	2.400	North			2.75		19.720	0.521 0.099	0.422
211	212	25	DIN	48.4	0.190	East	4ET	4.58	1.39		19.720	0.422 0.056	0.366
211	213	25	DIN	47.3	2.400	North			1.36		19.720	0.422 0.027	0.395
213	214	25	DIN	47.3	0.190	East	5E	3.85	1.36		19.720	0.395 0.045	0.350
208	215	50	DIN	176.3	3.000	West			1.33		19.720	0.768 0.015	0.754
215	216	25	DIN	114.6	1.140	North	T	1.50	3.29		19.720	0.754 0.151	0.602
216	217	25	DIN	56.7	2.400	North			1.63		19.720	0.602 0.037	0.565
217	218	25	DIN	56.7	0.190	East	5E	3.85	1.63		19.720	0.565 0.063	0.502
216	219	25	DIN	57.9	0.190	East	4ET	4.58	1.66		19.720	0.602 0.077	0.525
215	220	50	DIN	61.6	0.200	West			0.47		19.720	0.754 0.000	0.753
220	221	25	DIN	61.6	1.140	North	E	0.77	1.77		19.720	0.753 0.035	0.719
221	222	25	DIN	61.6	2.010	West	E	0.77	1.77		19.720	0.719 0.051	0.668
222	223	25	DIN	61.6	0.224	North	5E	3.85	1.77		19.720	0.668 0.074	0.594
193	229	50	DIN	-289.1	25.576	East			2.18		19.720	0.935 0.315	1.250
229	230	50	DIN	-289.1	0.800	South	E	1.50	2.18		19.720	1.250 0.028	1.278
230	231	50	DIN	-289.1	31.404	East	E	1.50	2.18		19.720	1.278 0.406	1.684
231	232	50	DIN	-289.1	11.590	South	E	1.50	2.18		19.720	1.684 0.161	1.846
232	233	50	DIN	-289.1	5.015	West	E	1.50	2.18		19.720	1.846 0.080	1.926
189	233	50	DIN	289.1	5.015	East	T	2.90	2.18		19.720	2.023 0.098	1.926

KEY TO FITTINGS AND PIPEWORK QUANTITIES (Above pipes only)

E = Screwed elbow, W = welded elbow, H = 45deg elbow, T = Branch tee/cross, J = Through tee
GV = Gate valve, SV = Swinging valve, MV = Mushroom valve, BV = Butterfly valve, GL = Globe valve

DIN = DIN 2440/2458 "C"wet=120 "C"dry=100(d) "C"nfpa=120 Total = 217.70 m
 Sizes = 25 50 65 80 100 mm
 Bores = 27.20 53.00 70.90 83.10 107.90 mm
 Lengths = 31.63 151.14 11.06 1.84 22.03 m

AACALC7 [130114] by Alan Ashfield, 9 Hyde Gardens, Langtoft, Peterborough PE6 9LT, UK
For more information about AACALC7, please visit www.freehc.net