

THE ACADS-BSG PROGRAM

HYENA

VERSION 6.00.2

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DESIGN PROGRAM FOR SPRINKLER, HOSE REEL AND HYDRANT SYSTEMS
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Calculation build number 6.00.2AF
#FIRST FLOOR NEW EXTENSION
#MOST UNFAVOURABLE 4 RESIDENTIAL SPRINKLERS
#TYCO LFII MIN DISCHARGE 75.7 l/min @ 115 kPa

#

DESIGN DATA AND SUMMARY RESULTS

Job No.

Designer :	N.SALT	DATE :	14 MAY 2012
Client :	RAPID FIRE PREVENTION	TIME :	10:07
Project :	ASSISI AGED CARE		

Maximum unbalanced head loss= 0.00019 kPa

Maximum unbalanced flow is = 0.00324 l/m and occurs in Pipe Loop 1

FIRST FLOOR NEW EXTENSION
MOST UNFAVOURABLE 4 RESIDENTIAL SPRINKLERS
TYCO LFII MIN DISCHARGE 75.7 l/min @ 115 kPa

Fittings Specified as AS2118
Design Point Calculation With Min Flow
Occupancy Classification : Residential
Number of Sprinklers Operating : 4

Total water flow for Sprinklers : 312 l/m
Average Flow : 77.9 l/m
Minimum Flow : 75.7 l/m

Required Flow & Pressure, Input Node 99 : 312 l/m at 252 kPa

Specified available pressure at input node 99: 438 kPa
Available pressure minus required pressure is : 186 kPa

Calculated Total Pipe Volume is : 971 Litres

Authourising Company :
Certification Number :

Input data file name : C:/ARDENT/PROJECTS/ASSISI/CALCS/FIRST.DAT
Results file name : C:/ARDENT/PROJECTS/ASSISI/CALCS/FIRST.OUT

PIPE CHARACTERISTICS

Page 1 of 1 - Job No.

Designer : N.SALT
Client : RAPID FIRE PREVENTION
Project : ASSISI AGED CARE

DATE :14 MAY 2012
TIME : 10:07

Pipe No.	Pipe Numbers	node	Flow (l/m)	Pipe Nom (mm)	diam. Actual (mm)	Pipe CODE #	& Ftg. Length (m)	TOTAL Length (m)	Loss Per m (KPa)	Loss Over pipe (KPa)	Static Loss (KPa)	TOTAL Loss (KPa)	H&W Co-eff	Water Vel. (m/s)	Vel. Press (KPa)
100	50	1	75.75	25	27	ASAM	3.3	4.5	2.573	11.579	-4.898	6.682	120	2.14	2.287
				25		2SE	1.2								
101	50	2	77.09	25	27	ASAM	0.7	2.8	2.658	7.444	-4.898	2.546	120	2.18	2.369
				25		1SE	0.6								
				25		1TT	1.5								
102	51	50	152.84	32	36	ASAM	9.8	11.6	2.470	28.651	0.000	28.651	120	2.49	3.095
				32		1TT	1.8								
103	52	3	79.01	25	27	ASAM	0.8	2.9	2.782	8.068	-4.898	3.170	120	2.23	2.488
				25		1SE	0.6								
				25		1TT	1.5								
104	53	52	79.01	32	36	ASAM	4.0	4.0	0.728	2.911	0.000	2.911	120	1.29	0.827
105	53	4	79.87	25	27	ASAM	0.8	2.9	2.838	8.231	-4.898	3.333	120	2.26	2.542
				25		1SE	0.6								
				25		1TT	1.5								
106	54	53	158.87	32	36	ASAM	5.4	7.2	2.653	19.105	0.000	19.105	120	2.59	3.344
				32		1TT	1.8								
107	54	51	3.90	50	53	ASAM	4.6	4.6	0.000422	0.00194	0.000	0.00194	120	0.029	0.00043
108	55	54	162.77	50	53	ASAM	42.1	43.6	0.423	18.441	0.000	18.441	120	1.22	0.749
				50		1SE	1.5								
109	55	51	148.94	50	53	ASAM	48.4	51.4	0.359	18.443	0.000	18.443	120	1.12	0.627
				50		2SE	3.0								
110	56	55	311.71	65	69	ASAM	13.8	19.2	0.399	7.664	0.000	7.664	120	1.40	0.975
				65		3SE	5.4								
111	57	56	311.71	65	69	ASAM	3.8	3.8	0.399	1.517	37.222	38.739	120	1.40	0.975
112	58	57	311.71	80	81	ASAM	50.0	69.9	0.183	12.761	18.611	31.372	120	1.01	0.513
				80		7SE	14.7								
				80		1GV	0.3								
				80		1AV	4.9								
113	99	58	311.71	80	81	ASAM	81.0	105.8	0.183	19.315	-14.693	4.622	120	1.01	0.513
				80		7SE	14.7								
				80		1TT	4.6								
				80		2GV	0.6								
				80		1CV	4.9								

LEGEND - Fittings and USER Pipe Materials used in this run

SE = 90 Degree Elbow

TT = Tee Branch

GV = Gate Valve

CV = Check Valve

AV = Alarm Valve (Straightway)

Maximum unbalanced head loss= 0.00019 kPa

Maximum unbalanced flow is = 0.00324 l/m and occurs in Pipe Loop 1

NODE CHARACTERISTICS

Page 1 of 1 - Job No.

Designer : N.SALT
 Client : RAPID FIRE PREVENTION
 Project : ASSISI AGED CARE

DATE :14 MAY 2012
 TIME : 10:07

SPRINKLER/NOZZLE (N) POINTS			REFERENCE POINTS			INPUT POINTS			Node	Entered	K-Factor
No.	Dischg. l/m	kPa	No.	Dischg. l/m	kPa	No.	Demand l/m	kPa	Elevation (m)	Discharge (l/m)	l/m & kPa
1	75.75	115.436							73.700	75.70	7.050
2	77.09	119.572							73.700	75.70	7.050
3	79.01	125.584							73.700	75.70	7.050
4	79.87	128.332							73.700	75.70	7.050
			50		122.117				74.200		
			51		150.768				74.200		
			52		128.754				74.200		
			53		131.665				74.200		
			54		150.770				74.200		
			55		169.211				74.200		
			56		176.874				74.200		
			57		215.613				70.400		
			58		246.985				68.500		
						99	311.71	251.607	70.000		

Input Data

LABL1=Authourising Company
TEXT1=
LABL2=Certification Number
TEXT2=
OCC=Residential
DENS=
AREA=
ORIF=
COVER=
NOPLOT
PLEN=M
PDIAM=MM
PRESSURE=KPA
FLOW=L/MIN
ELEV=M
FITTING=AS2118
REPORT
EQ
FDESPT
Fitting Type =Comm
Defaults for Elbows=SE
Defaults for Tees=TT

Pipes

Pipes Mtr and Coef: Defaults= MCASAM HW120

P 100 1 50 3.3 25 ASAM120 2SE
P 101 2 50 0.7 25 ASAM120 1SE 1TT
P 102 50 51 9.8 32 ASAM120 1TT
P 103 3 52 0.8 25 ASAM120 1SE 1TT
P 104 52 53 4 32 ASAM120
PS 103 105 4 53
P 106 53 54 5.4 32 ASAM120 1TT
P 107 51 54 4.6 50 ASAM120
P 108 54 55 42.1 50 ASAM120 1SE
P 109 51 55 48.4 50 ASAM120 2SE
P 110 55 56 13.8 65 ASAM120 3SE
P 111 56 57 3.8 65 ASAM120
P 112 57 58 50 80 ASAM120 7SE GV AV
P 113 58 99 81 80 ASAM120 7SE 1TT 2GV CV
Default= ED73.7 DI75.7 KF7.05

Sprinklers

S	1	73.7	75.7	7.05
S	2	73.7	75.7	7.05
S	3	73.7	75.7	7.05
S	4	73.7	75.7	7.05

Reference Points
Point Default= ED74.2

R	50	74.2
R	51	74.2
R	52	74.2
R	53	74.2
R	54	74.2
R	55	74.2
R	56	74.2
R	57	70.4
R	58	68.5

InputPoints

IC 99 70 4.4302E+02 1.2209E-02 -1.5440E-05 -9.3528E-11
(1-4):I 99 0 443 300 438 600 430 900 420
(5-8):1200 406 1500 390 1800 372 2100 350
END

	LENGTH	DIAMETER	FLOW	HEAD	ELEVATION	PRESSURE
UNITS BEING USED:	METERS	MM	l/m	CM	METERS	KPA

HAZEN-WILLIAMS FORMULA USED

FITTINGS SPECIFIED AS AS2118

ITERATION STOPS WHEN GREATEST FLOW CHANGE IS 0.0303 IN ANY PIPE

DEFAULT ROUGHNESS COEFFICIENT - C=120

THERE ARE 4 SPRINKLERS AND 0 BOOSTER PUMPS

THERE ARE 14 PIPES AND 9 REFERENCE POINTS

THE NUMBER OF INPUT POINTS IN SYSTEM IS 1

NODE	NO. OF PUMPS	PUMP	INPUT	PUMP PARAMETERS
NO.	IN PARALLEL	ELEVATION	FRACTION	OR X-Y COORDINATES
99	1	70.00	1.00	794.11 0.1221E-01 -0.1544E-04 -0.9353E-10

DESIGN POINT CALCULATION WITH MIN FLOW

Initial estimate of demand on the system is 302.80

NET UNBALANCED DEMAND ON THE SYSTEM IS 0