

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
#GROUND 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
Client : RAPID FIRE PREVENTION
Project : ASSISI AGED CARE

DATE :27 APR 2012
TIME : 7:51

Maximum unbalanced head loss= 0.00019 kPa

Maximum unbalanced flow is = 0.00229 l/m and occurs in Pipe Loop 1

GROUND 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 : 323 l/m
Average Flow : 80.8 l/m
Minimum Flow : 75.7 l/m

Required Flow & Pressure, Input Node 99 : 323 l/m at 272 kPa

Specified available pressure at input node 99: 437 kPa
Available pressure minus required pressure is : 166 kPa

Calculated Total Pipe Volume is : 815 Litres

Authourising Company :
Certification Number :

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

PIPE CHARACTERISTICS

Page 1 of 1 - Job No.

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Pipe No.	Pipe node Numbers		Flow (l/m)	Pipe diam.		Pipe & Ftg.		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)
				Nom (mm)	Actual (mm)	CODE #	Length (m)								
100	50	1	75.75	25	27	ASAM	5.0	6.2	2.573	15.953	-7.836	8.117	120	2.14	2.287
				25		2SE	1.2								
101	50	2	78.17	25	27	ASAM	1.0	3.1	2.727	8.455	-7.836	0.619	120	2.21	2.435
				25		1SE	0.6								
				25		1TT	1.5								
102	51	50	153.91	25	27	ASAM	2.0	2.6	9.564	24.867	0.000	24.867	120	4.35	9.442
				25		1SE	0.6								
103	52	51	153.91	50	53	ASAM	4.0	4.0	0.381	1.525	0.000	1.525	120	1.16	0.669
104	52	3	83.90	25	27	ASAM	2.5	5.2	3.109	16.168	-7.836	8.331	120	2.37	2.805
				25		2SE	1.2								
				25		1TT	1.5								
105	53	52	237.81	50	53	ASAM	1.2	1.2	0.853	1.024	0.000	1.024	120	1.79	1.598
106	53	4	85.45	25	27	ASAM	1.0	3.7	3.217	11.901	-7.836	4.065	120	2.41	2.910
				25		2SE	1.2								
				25		1TT	1.5								
107	54	53	323.25	50	53	ASAM	34.0	43.0	1.507	64.794	0.000	64.794	120	2.43	2.953
				50		4SE	6.0								
				50		1TT	3.0								
108	55	54	323.25	80	81	ASAM	17.0	27.5	0.195	5.370	34.284	39.654	120	1.05	0.551
				80		5SE	10.5								
109	56	55	323.25	80	75	VINI	50.0	69.9	0.288	20.134	-9.795	10.339	120	1.23	0.759
				80		7SE	14.7								
				80		1GV	0.3								
				80		1AV	4.9								
110	99	56	323.25	80	81	ASAM	81.0	105.8	0.195	20.661	-14.693	5.968	120	1.05	0.551
				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)

The following special material codes have been used:

VINI VINIDEX PVC(Class 18) to AS1477

Maximum unbalanced head loss= 0.00019 kPa

Maximum unbalanced flow is = 0.00229 l/m and occurs in Pipe Loop 1

NODE CHARACTERISTICS

Page 1 of 1 - Job No.

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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	115.433							70.200	75.70	7.050
2	78.17	122.931							70.200	75.70	7.050
3	83.90	141.611							70.200	75.70	7.050
4	85.45	146.901							70.200	75.70	7.050
			50		123.550				71.000		
			51		148.417				71.000		
			52		149.942				71.000		
			53		150.967				71.000		
			54		215.761				71.000		
			55		255.415				67.500		
			56		265.754				68.500		
						99	323.25	271.722	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 5 25 ASAM120 2SE
P 101 2 50 1 25 ASAM120 1SE 1TT
P 102 50 51 2 25 ASAM120 1SE
P 103 51 52 4 50 ASAM120
P 104 3 52 2.5 25 ASAM120 2SE 1TT
P 105 52 53 1.2 50 ASAM120
P 106 4 53 1 25 ASAM120 2SE 1TT
P 107 53 54 34 50 ASAM120 4SE 1TT
P 108 54 55 17 80 ASAM120 5SE
P 109 55 56 50 80 VINI120 7SE GV AV
P 110 56 99 81 80 ASAM120 7SE 1TT 2GV CV
Default= ED70.2 DI75.7 KF7.05

Sprinklers

S	1	70.2	75.7	7.05
S	2	70.2	75.7	7.05
S	3	70.2	75.7	7.05
S	4	70.2	75.7	7.05

Reference Points
Point Default= ED71

R	50	71
R	51	71
R	52	71
R	53	71
R	54	71
R	55	67.5
R	56	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 11 PIPES AND 7 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	756.39 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