



AGIS Fire & Security

Palisadowa 20/22
01-940 Warszawa
Phone: (022)4308301
TFS & BP FM-200 FLOW CALCULATION TSP3.12b
Project: PROMERANIA TECHNOPARK
File Name: Serw A017_3.FLC

Consolidated Report

Customer Information

Company Name: Przedsiębiorstwo Usług Specjalistycznych MVB
Address: Widuchowska 19
71-718 Szczecin

Phone:
Contact:
Title:

Project Data

Project Name: PROMERANIA TECHNOPARK
Designer: Krzysztof Majcher
Number:
Account:
Location:
Description:

Consolidated Report Enclosure Information

Elevation: 0 m (relative to sea level)
Atmospheric Correction Factor: 1

Enclosure Number:	1
Name:	Podłoga techniczna
Enclosure Temperature...	
Minimum:	20,0 C
Maximum:	25,0 C
Maximum Concentration:	8,887 %
Design Concentration...	
Adjusted:	8,741 %
Minimum:	8,500 %
Minimum Agent Required:	35,9 kg
Width:	0,00 m
Length:	0,00 m
Height:	0,00 m
Volume:	52,88 cubic m
Non-permeable:	0,00 cubic m
Total Volume:	52,88 cubic m
Adjusted Agent Required:	37,0 kg
Number of Nozzles:	2

Consolidated Report Agent Information

Agent: FM-200 / Propellant N2
(FM-200 is a Trademark of DuPont)

Adjusted Agent Required: 37,0 kg
 Container Name: 52L TPED Container Assy
 Container Part Number: 303.205.012
 Number of Main Containers: 1
 Number of Reserve Containers: 0
 Manifold: No Manifold

 Pipe Take Off Direction: Horizontal
 Agent Per Container: 37,0 kg
 Fill Density: 0,712 kg / l
 Container Empty Weight: 63,7 kg
 Weight, All Containers + Agent: 100,7 kg
 Floor Area Per Container: 0,13 square m
 Floor Loading Per Container: 778 kg /square m

Pipe Network

Part 1 - Pipe			Pipe			
Description	Start	End	Type	Diameter	Length	Elevation
Main Cyl. X 1	0	1		50 mm	0,59 m	0,59 m
Pipe	1	2	DIN244 0	40 mm	0,70 m	-0,70 m
Pipe	2	3	DIN244 0	40 mm	1,00 m	0,00 m
Pipe	3	4	DIN244 0	20 mm	3,70 m	0,00 m
Pipe	4	5	DIN244 0	20 mm	2,20 m	0,00 m
Pipe/E1-N1	5	6	DIN244 0	20 mm	0,10 m	-0,10 m
Pipe	3	7	DIN244 0	20 mm	0,50 m	0,00 m
Pipe	7	8	DIN244 0	20 mm	2,20 m	0,00 m
Pipe/E1-N2	8	9	DIN244 0	20 mm	0,10 m	-0,10 m

Page: 3 of 7

Calculation Date/Time: 22 październik 2013, 14:20:12

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Part 2 - Equivalent Length

Start	End	90	45	Thru	Side	Union	Other	Added	Total
0	1	0	0	0	0	0		0,00 m	10,67 m
1	2	1	0	0	0	0		0,00 m	2,01 m
2	3	1	0	0	0	0		0,00 m	2,32 m
3	4	0	0	0	1	0		0,00 m	5,06 m
4	5	1	0	0	0	0		0,00 m	2,87 m
5	6	1	0	0	0	0		0,00 m	0,76 m
3	7	0	0	0	1	0		0,00 m	1,86 m
7	8	1	0	0	0	0		0,00 m	2,87 m
8	9	1	0	0	0	0		0,00 m	0,76 m

Part 3 - Nozzles

Start	End	Flow	Name	Size	Type	Nozzle Area
0	1	37,0 kg				
1	2	37,0 kg				
2	3	37,0 kg				
3	4	18,6 kg				
4	5	18,6 kg				
5	6	18,6 kg	E1-N1	20 mm	360-AL (BSP)	127,23 square mm
3	7	18,4 kg				
7	8	18,4 kg				
8	9	18,4 kg	E1-N2	20 mm	360-AL (BSP)	121,64 square mm

Parts Information

Total Agent Required: 37,0 kg

Container Name: 52L TPED Container Assy (Part: 303.205.012)

Number Of Containers: 1

Nozzle	Type	Diameter	Nozzle Area	Part Number
E1-N1	360-AL (BSP)	20 mm	127,23 square mm	310.205.106
E1-N2	360-AL (BSP)	20 mm	121,64 square mm	310.205.106

Nozzle	Drill Diameter	Drill Size
E1-N1	4,5000 mm	4.5 mm

Consolidated Report

Nozzle	Drill Diameter	Drill Size
E1-N2	4,4000 mm	4.4 mm

Pipe:	Type	Diameter	Length
	DIN2440	20 mm	8,80 m
	DIN2440	40 mm	1,70 m

List of 90 degree elbows:

4 - 20 mm

2 - 40 mm

List of Tees:

1 - 40 mm

System Acceptance

System Discharge Time: 8,1 seconds

Percent Agent In Pipe: 26,0%

Percent Agent Before First Tee: 13,7%

Enclosure Number: 1

Enclosure Name: Podłoga techniczna

Minimum Design Concentration: 8,500%

Adjusted Design Concentration: 8,741%

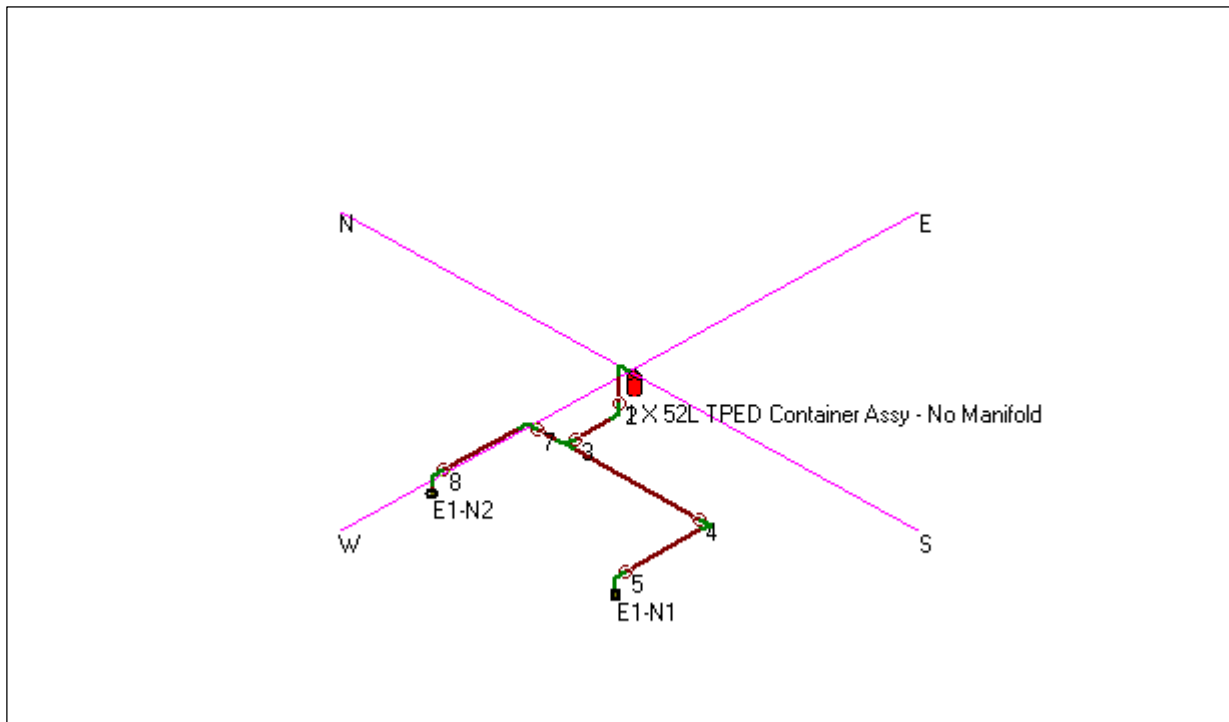
Predicted Concentration: 8,742%

Maximum Expected Agent Concentration: 8,887% (At 25,0 C)

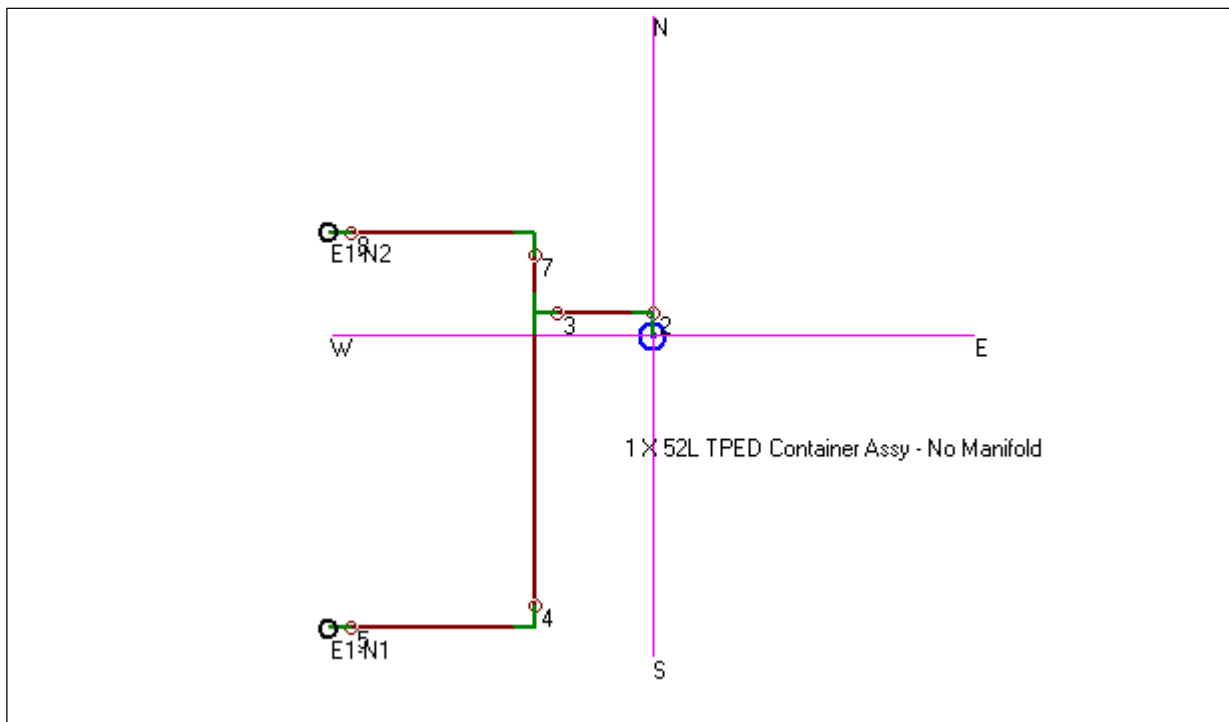
Nozzle	Minimum Agent Required	Adjusted Agent Required	Predicted Agent Delivered	Nozzle Pressure (Average)
E1-N1	18,0 kg	18,6 kg	18,4 kg	11,061 bar
E1-N2	17,9 kg	18,4 kg	18,6 kg	12,230 bar

Consolidated Report

Standard Isometric View



Standard Plan View



Consolidated Report Standard Elevation View

