



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 A013_3.FLC

Consolidated Report

Customer Information

Company Name: Przedsiębiorstwo Usług Specjalistycznych
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:	8,703 %
Design Concentration...	
Adjusted:	8,560 %
Minimum:	8,500 %
Minimum Agent Required:	43,7 kg
Width:	0,00 m
Length:	0,00 m
Height:	0,00 m
<hr/>	
Volume:	64,34 cubic m
Non-permeable:	0,00 cubic m
<hr/>	
Total Volume:	64,34 cubic m
Adjusted Agent Required:	44,0 kg
Number of Nozzles:	2

Consolidated Report Agent Information

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

Adjusted Agent Required: 44,0 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: 44,0 kg
Fill Density: 0,846 kg / l
Container Empty Weight: 63,7 kg
Weight, All Containers + Agent: 107,7 kg
Floor Area Per Container: 0,13 square m
Floor Loading Per Container: 832 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	32 mm	0,70 m	-0,70 m
Pipe	2	3	DIN244 0	32 mm	3,30 m	0,00 m
Pipe	3	4	DIN244 0	32 mm	0,60 m	0,00 m
Pipe	4	5	DIN244 0	25 mm	5,30 m	0,00 m
Pipe	5	6	DIN244 0	25 mm	2,50 m	0,00 m
Pipe/E1-N1	6	7	DIN244 0	25 mm	0,10 m	-0,10 m
Pipe	4	8	DIN244 0	25 mm	2,50 m	0,00 m
Pipe	8	9	DIN244 0	25 mm	2,50 m	0,00 m

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Calculation Date/Time: 22 październik 2013, 14:09:52

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Part 1 - Pipe

Description	Start	End	Type	Diameter	Pipe Length	Elevation
Pipe/E1-N2	9	10	DIN244 0	25 mm	0,10 m	-0,10 m

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	1,83 m
2	3	1	0	0	0	0		0,00 m	4,42 m
3	4	1	0	0	0	0		0,00 m	1,74 m
4	5	0	0	0	1	0		0,00 m	7,04 m
5	6	1	0	0	0	0		0,00 m	3,35 m
6	7	1	0	0	0	0		0,00 m	0,94 m
4	8	0	0	0	1	0		0,00 m	4,24 m
8	9	1	0	0	0	0		0,00 m	3,35 m
9	10	1	0	0	0	0		0,00 m	0,94 m

Part 3 - Nozzles

Start	End	Flow	Name	Size	Type	Nozzle Area
0	1	44,0 kg				
1	2	44,0 kg				
2	3	44,0 kg				
3	4	44,0 kg				
4	5	22,1 kg				
5	6	22,1 kg				
6	7	22,1 kg	E1-N1	25 mm	360-AL (BSP)	211,37 square mm
4	8	21,9 kg				
8	9	21,9 kg				
9	10	21,9 kg	E1-N2	25 mm	360-AL (BSP)	197,04 square mm

Parts Information

Total Agent Required: 44,0 kg

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

Number Of Containers: 1

Nozzle	Type	Diameter	Nozzle Area	Part Number
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Nozzle	Type	Diameter	Nozzle Area	Part Number
E1-N1	360-AL (BSP)	25 mm	211,37 square mm	310.205.108
E1-N2	360-AL (BSP)	25 mm	197,04 square mm	310.205.108

Nozzle	Drill Diameter	Drill Size
E1-N1	5,8000 mm	5.8 mm
E1-N2	5,6000 mm	5.6 mm

Pipe:	Type	Diameter	Length
	DIN2440	25 mm	13,00 m
	DIN2440	32 mm	4,60 m

List of 90 degree elbows:

4 - 25 mm

3 - 32 mm

List of Tees:

1 - 32 mm

System Acceptance

*** WARNING - The data in this project may have been changed after the calculations were performed.**

System Discharge Time: 9,4 seconds

Percent Agent In Pipe: 43,0%

Percent Agent Before First Tee: 19,0%

Enclosure Number: 1

Enclosure Name: Podłoga techniczna

Minimum Design Concentration: 8,500%

Adjusted Design Concentration: 8,560%

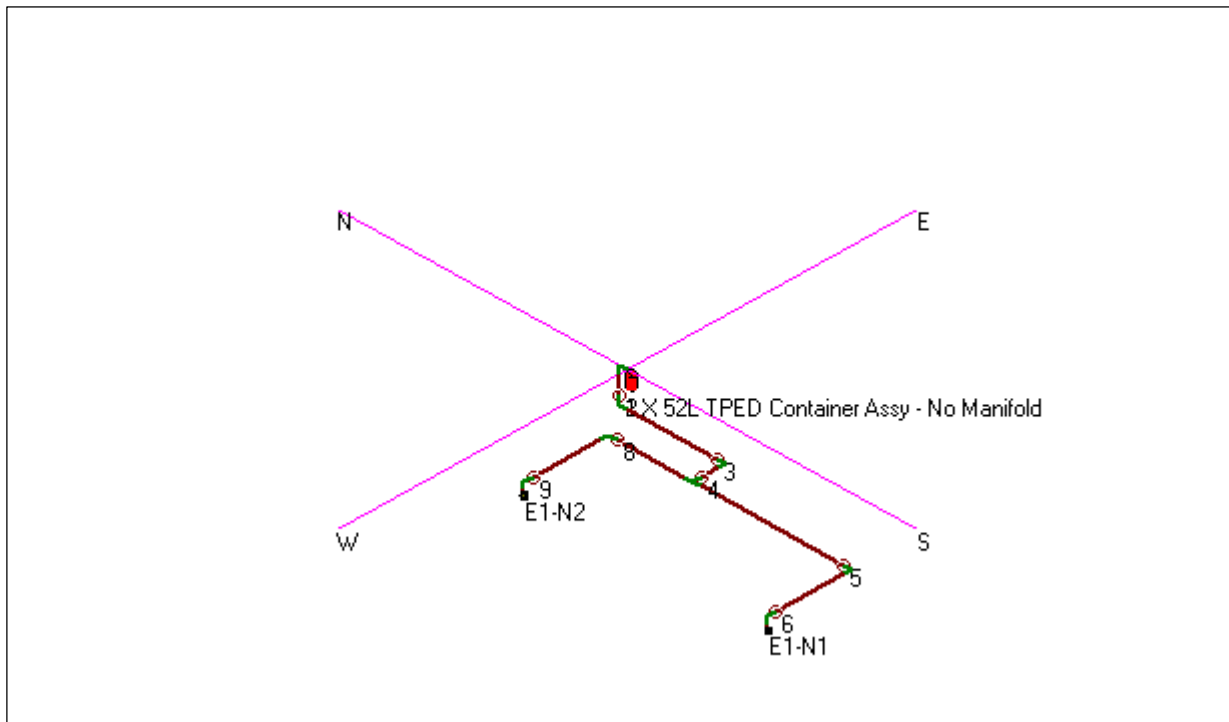
Predicted Concentration: 8,561%

Maximum Expected Agent Concentration: 8,703% (At 25,0 C)

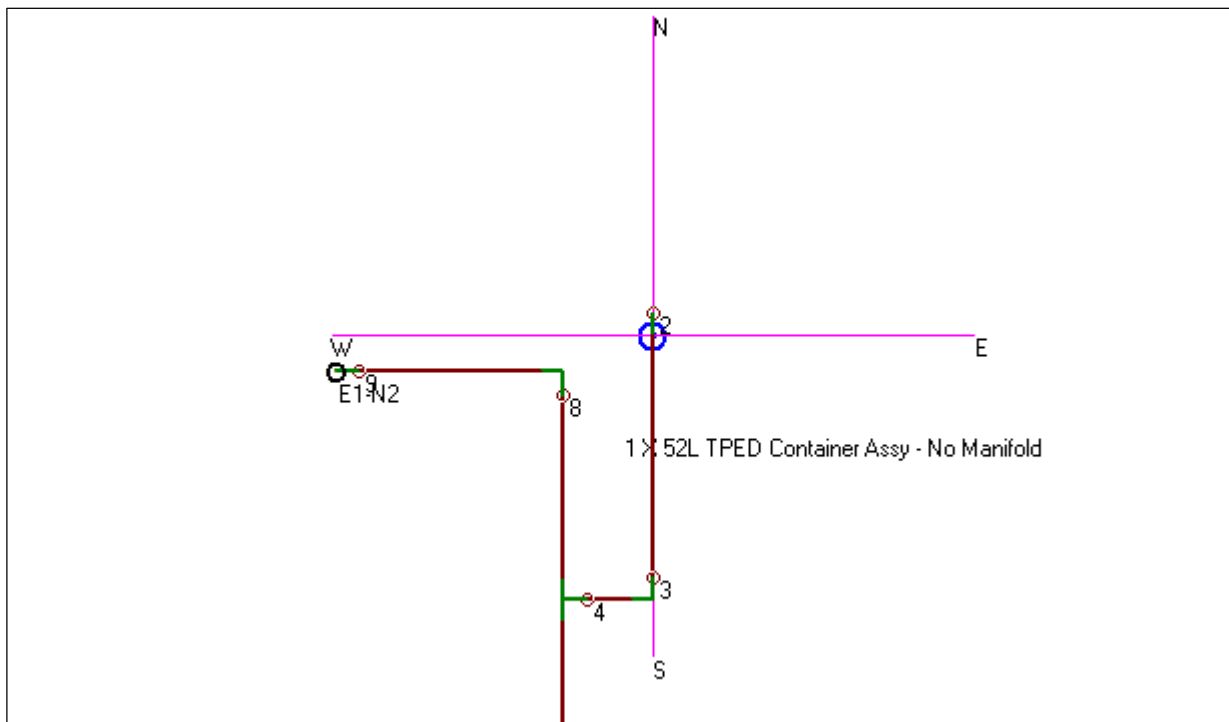
Nozzle	Minimum Agent Required	Adjusted Agent Required	Predicted Agent Delivered	Nozzle Pressure (Average)
E1-N1	21,9 kg	22,1 kg	22,3 kg	8,555 bar
E1-N2	21,8 kg	21,9 kg	21,7 kg	9,263 bar

Consolidated Report

Standard Isometric View



Standard Plan View



Consolidated Report Standard Elevation View

