



## **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\_1.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

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Enclosure Number:	1
Name:	Przestrzeń właściwa
Enclosure Temperature...	
Minimum:	20,0 C
Maximum:	25,0 C
Maximum Concentration:	8,642 %
Design Concentration...	
Adjusted:	8,500 %
Minimum:	8,500 %
Minimum Agent Required:	140,0 kg
Width:	0,00 m
Length:	0,00 m
Height:	0,00 m
Volume:	206,31 cubic m
Non-permeable:	0,00 cubic m
Total Volume:	206,31 cubic m
Adjusted Agent Required:	140,0 kg
Number of Nozzles:	2

## Consolidated Report Agent Information

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

Adjusted Agent Required: 140,0 kg  
Container Name: 180L TPED Container Assy  
Container Part Number: 303.205.005  
Number of Main Containers: 1  
Number of Reserve Containers: 0  
Manifold: No Manifold  
  
Pipe Take Off Direction: Horizontal  
Agent Per Container: 140,0 kg  
Fill Density: 0,778 kg / l  
Container Empty Weight: 127,7 kg  
Weight, All Containers + Agent: 267,7 kg  
Floor Area Per Container: 0,13 square m  
Floor Loading Per Container: 2068 kg /square m

### Pipe Network

Part 1 - Pipe			Pipe			
Description	Start	End	Type	Diameter	Length	Elevation
Main Cyl. X 1	0	1		50 mm	1,63 m	1,63 m
Pipe	1	2	DIN244 0	65 mm	3,15 m	3,15 m
Pipe	2	3	DIN244 0	65 mm	2,70 m	0,00 m
Pipe	3	4	DIN244 0	65 mm	2,50 m	0,00 m
Pipe	4	5	DIN244 0	65 mm	0,65 m	0,00 m
Pipe	5	6	DIN244 0	40 mm	1,20 m	0,00 m
Pipe/E1-N1	6	7	DIN244 0	40 mm	0,10 m	0,10 m
Pipe	5	8	DIN244 0	40 mm	1,20 m	0,00 m
Pipe/E1-N2	8	9	DIN244 0	40 mm	0,10 m	0,10 m

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Calculation Date/Time: 22 październik 2013, 14:13:27

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## Consolidated Report

### 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	5,15 m
2	3	1	0	0	0	0		0,00 m	4,72 m
3	4	1	0	0	0	0		0,00 m	4,51 m
4	5	1	0	0	0	0		0,00 m	2,65 m
5	6	0	0	0	1	0		0,00 m	3,84 m
6	7	1	0	0	0	0		0,00 m	1,40 m
5	8	0	0	0	1	0		0,00 m	3,84 m
8	9	1	0	0	0	0		0,00 m	1,40 m

### Part 3 - Nozzles

Start	End	Flow	Name	Size	Type	Nozzle Area
0	1	140,0 kg				
1	2	140,0 kg				
2	3	140,0 kg				
3	4	140,0 kg				
4	5	140,0 kg				
5	6	70,0 kg				
6	7	70,0 kg	E1-N1	40 mm	360-AL (BSP)	760,27 square mm
5	8	70,0 kg				
8	9	70,0 kg	E1-N2	40 mm	360-AL (BSP)	760,27 square mm

### Parts Information

Total Agent Required: 140,0 kg

Container Name: 180L TPED Container Assy (Part: 303.205.005)

Number Of Containers: 1

Nozzle	Type	Diameter	Nozzle Area	Part Number
E1-N1	360-AL (BSP)	40 mm	760,27 square mm	310.205.112
E1-N2	360-AL (BSP)	40 mm	760,27 square mm	310.205.112

Nozzle	Drill Diameter	Drill Size
E1-N1	11,0000 mm	11 mm

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Nozzle	Drill Diameter	Drill Size
E1-N2	11,0000 mm	11 mm

Pipe:	Type	Diameter	Length
	DIN2440	40 mm	2,60 m
	DIN2440	65 mm	9,00 m

List of 90 degree elbows:

2 - 40 mm

4 - 65 mm

List of Tees:

1 - 65 mm

## System Acceptance

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

System Discharge Time: 7,7 seconds

Percent Agent In Pipe: 40,7%

Percent Agent Before First Tee: 37,1%

Enclosure Number: 1

Enclosure Name: Przestrzeń właściwa

Minimum Design Concentration: 8,500%

Adjusted Design Concentration: 8,500%

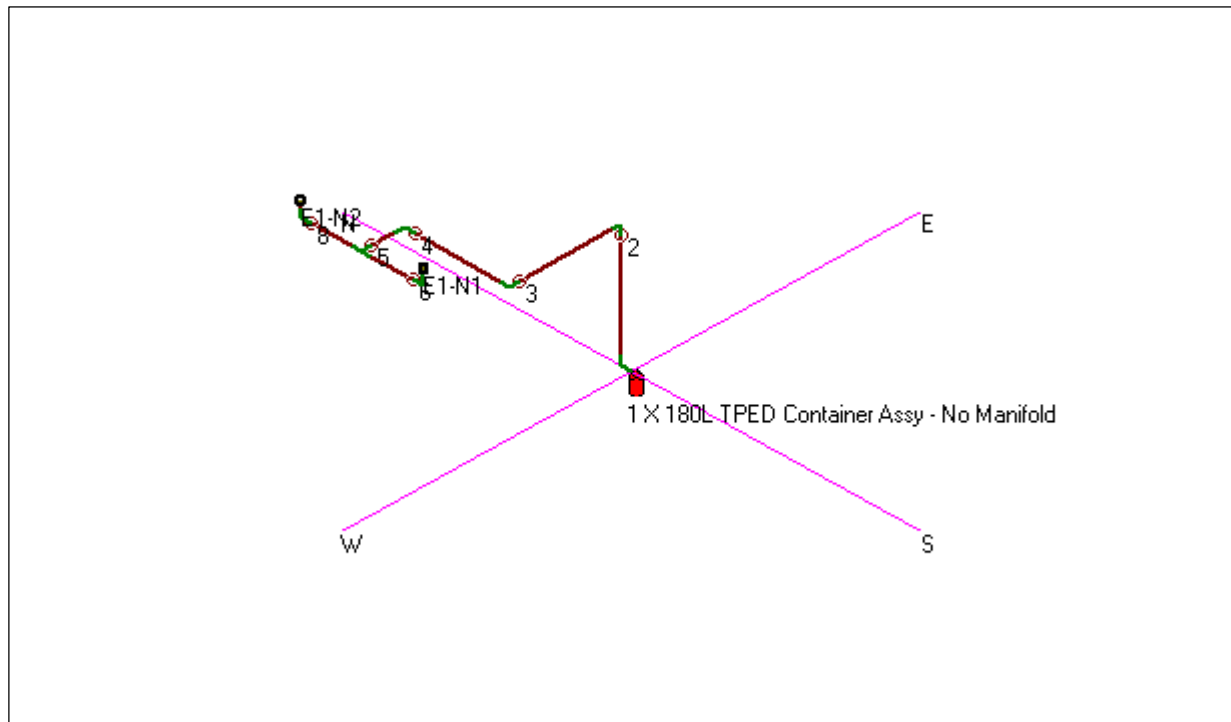
Predicted Concentration: 8,500%

Maximum Expected Agent Concentration: 8,642% (At 25,0 C)

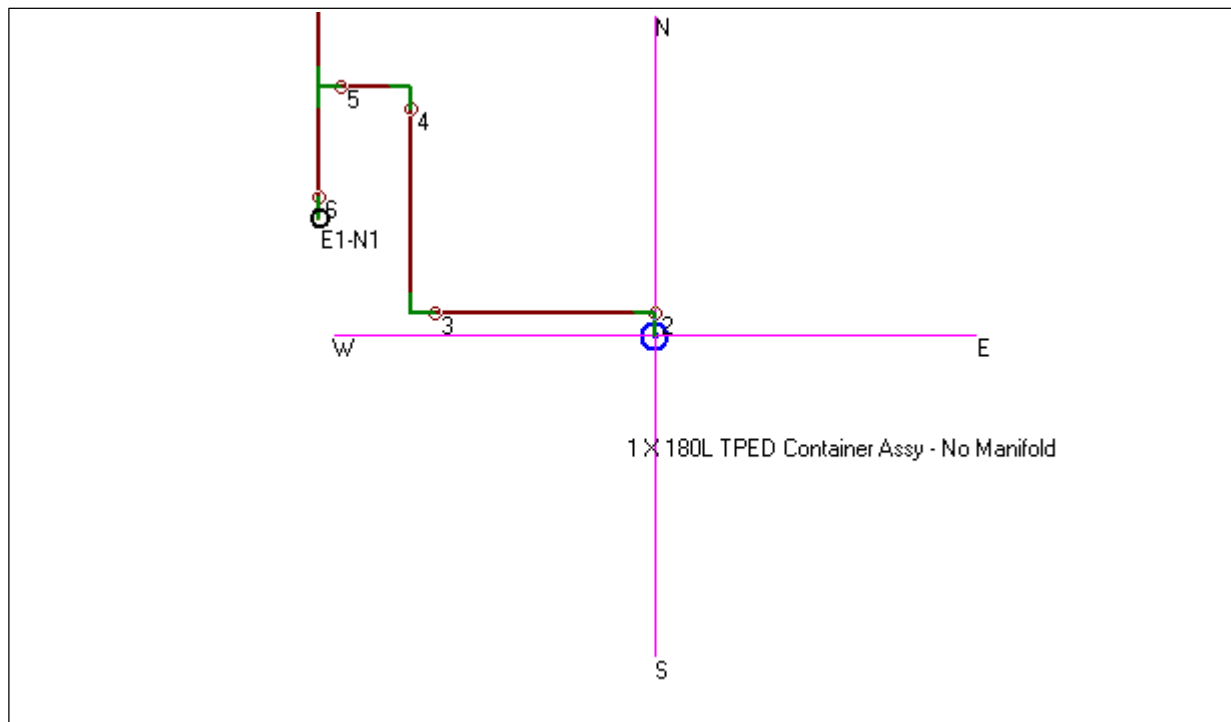
Nozzle	Minimum Agent Required	Adjusted Agent Required	Predicted Agent Delivered	Nozzle Pressure (Average)
E1-N1	70,0 kg	70,0 kg	70,0 kg	8,258 bar
E1-N2	70,0 kg	70,0 kg	70,0 kg	8,258 bar

## Consolidated Report

### Standard Isometric View



### Standard Plan View



## Consolidated Report Standard Elevation View

