

IMT V.2.2.3

Filename	2P_03 serwerownia.imt
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Inergen System Data

Fire Hazard		Flame ext	
Tee Design factor			
Safety factor applied			EN 15004
Minimum design conc.	41.5 %		

Cylinder Type	Inergen 50L steel cylinder		
Cylinder fill	15.0 C°		300.0 bar
Cylinder Storage	20.0 C°		308.7 bar
Temperature (Room)	20.0 C°		
Atmospheric pressure (Room)	1013.0 mbar		
Pressure relief resistance	0.3		

Room	1	2	3	Total
Name	Główna	Podlogowa		
Volume of room [m ³]	39.0	7.2		46.2
Actual conc. [%]	47.0	47.0		
Flooding [%]	63.5	63.5		
INERGEN [kg]	34.98	6.46		41.44
Final O ₂ [%]	11.1	11.1		
Final CO ₂ [%]	3.8	3.8		
Max flowrate [kg/sec]	0.56	0.11		0.67
Structural strength [Pa]	100	100		
Pressure relief [cm ²]	129.0	25.2		154.2

Cylinder quantity	2	pcs.
Pipe to Cylinder volume	0.8	%

Discharge time	120.0	Sec. to target
Target type	Inergen conc.	
Target	39.4 %	
Pipe type	FE galvanized welded steel pipe EN10220/10217-1 P235TR1.	

Pipe system

No	N1	N2	Elev	Start	End	Elb	Con	Usr	Noz	Room	L	vol	T	N/P	Dn	Pres	Dia	M
MT_no 1															15	303.2	3.7	
Pipe																60.7		
1	1	2		pP	pB						0.1	46.2	100.0	29.3	15			0.137
2	2	3	1.29	pR	pP	2	1		IN-15	1	1.8	39.0	84.4	24.7	15	57.8	7.3	0.121
3	2	4	-2.3	pR	pP	2			IN-15	2	2.8	7.2	15.6	4.6	15	61.3	3.2	0.022

Volume of pipe system 8.0E-4 m³
Min. Pipe working pressure. 60.0 bar

Description

MT: Manifold

Pipe: Pipe system inlet

N1, N2 : Nodes start & end

Elev: Elevation m

Start: Which kind of fitting is the pipe START connected to

End: Which kind of fitting is the pipe END connected to

pP: Plain pipe

pB: Branch Tee

pR: Run Tee

Elb: Fitting Elbow Qty

Con: Fitting Connector Qty

Usr: Fitting user defined Qty

Noz: Nozzle type (IN-15, IN-20, ...)

Room: Room number 1-3

L: Length of pipe in meters m

Vol: Volume of room protected by this pipe. m³

T: Tee split ratio (pipe inlet/upstream pipe mass flow ratio) %

N/P: Nozzle to pipe Area ratio %

Dn: Nominial pipe size

Pres: Max pressure in pipe section at outlet bar

Dia: Diameter of orifice (Nozzle / Manifold) mm

M: Mach number of gas in pipe

Nozzle calibration

Nozzle family : Mono orifice nozzle, maximum working pressure 125 bar.

Thread type : ISO

Node no.	Nozzle name	Nozzle type	Orifice mm ²	Orifice diameter (1 hole)	Drill 6*	Oxygen level	Max nozzle flow rate	total IG-541 mass
			mm ²	mm	mm	O ₂ %	kg/s	kg
3	Nozzle1	IN-15	42.2	7.3	3.0	11.1	0.6	35.0
4	Nozzle2	IN-15	7.8	3.2	1.3	11.1	0.1	6.5

Orifice

Thread type : ISO

Orifice name	Orifice connections	Orifice diameter (mm)	Orifice type	Hose type
MT_no1	2	3.7	Ci-MTX manifold	Hose DN10-400 0.5m to 2.0m

Calculation report

Hand wheel valve type: HWV Ø8mm type

Discharge valve type: Ci-IV8 type

Calculation method: Calculated pipe & orifices

Calculation time: 2020-06-03 06:22:07

Vendor: Fire Eater A/S

Program: IMT 2011 UL

IMT version: 2.2.3

Flow design engine: 2014-08-27

Room design engine: 2014-07-23

No errors during calculation.

No cautions during calculation.