

IMT V.2.2.3

Filename	1A_18 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 80L 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]	68.9	6.9		75.80
Actual conc. [%]	46.2	46.2		
Flooding [%]	61.9	61.9		
INERGEN [kg]	60.25	6.03		66.28
Final O ₂ [%]	11.3	11.3		
Final CO ₂ [%]	3.7	3.7		
Max flowrate [kg/sec]	1.05	0.11		1.16
Structural strength [Pa]	100	100		
Pressure relief [cm ²]	239.9	25.7		265.6

Cylinder quantity	2	pcs.
Pipe to Cylinder volume	0.5	%

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	Elv	Start	End	Elb	Con	Usr	Noz	Room	L	Vol	T	N/P	Dn	Pres	Dia	M
MT_no1															20	292.0	4.9	
Pipe																60.6		
1	1	2		pP	pB						0.1	75.8	100.0	31.3	20			0.124
2	2	3	1.2999999999999998	pR	pP	2	1		IN-15	1	1.8	68.9	90.9	54.9	15	46.2	10.9	0.278
3	2	4	-2.3	pR	pP	2			IN-15	2	2.8	6.9	9.1	4.7	15	61.1	3.2	0.023

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

Elv: 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	93.7	10.9	4.5	11.3	1.0	60.3
4	Nozzle2	IN-15	8.0	3.2	1.3	11.3	0.1	6.0

Orifice

Thread type : ISO

Orifice name	Orifice connections	Orifice diameter (mm)	Orifice type	Hose type
MT_no1	2	4.9	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 05:33:25

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.