

IMT V.2.2.3

Filename	1A_19 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]	73.2	7.3		80.5
Actual conc. [%]	44.2	44.2		
Flooding [%]	58.3	58.3		
INERGEN [kg]	60.28	6.01		66.29
Final O ₂ [%]	11.7	11.7		
Final CO ₂ [%]	3.5	3.5		
Max flowrate [kg/sec]	1.23	0.14		1.37
Structural strength [Pa]	200	200		
Pressure relief [cm ²]	198.0	21.8		219.8

Cylinder quantity	2	pcs.
Pipe to Cylinder volume	1.4	%

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															20	284.1	5.5	
Pipe																60.1		
1	1	2		pP	pB						0.1	80.5	100.0	33.8	20			0.15
2	2	3	1.29	pR	pP	3	2		IN-20	1	4.3	73.2	90.9	30.8	20	54.0	11.3	0.151
3	2	4	-2.3	pR	pP	3	1		IN-15	2	5.3	7.3	9.1	5.8	15	60.6	3.5	0.028

Volume of pipe system 0.0023 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: Nominal 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-20	99.9	11.3	4.6	11.7	1.2	60.3
4	Nozzle2	IN-15	9.9	3.5	1.4	11.7	0.1	6.0

Orifice

Thread type : ISO

Orifice name	Orifice connections	Orifice diameter (mm)	Orifice type	Hose type
MT_no1	2	5.5	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: 2020-06-24 08:21:33

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.