

PROINERT® PIPE AND FITTINGS

DESCRIPTION

Pipe and fittings used in Clean Agent System piping network must conform to the requirements as outlined in NFPA 2001 and ISO 14520, latest editions.

Piping materials, supports and spacing, must conform to the requirements as outlined in NFPA 2001, ISO 14520 or EN 15004. The thickness of the piping wall shall be calculated in accordance with ASME B31.1 Power Piping Code. For ProInert, use a minimum piping design pressure of 60 bar @ 20°C.

The following piping materials and configurations are acceptable:

- Schedule 40 Threaded
- Schedule 40 Welded
- Schedule 40 Grooved
- Schedule 80 Threaded
- Schedule 80 Threaded
- BS 1387 Heavy



NOTE: Galvanized piping shall be utilized where corrosion to the pipe network is likely.

CAUTION: Cast iron pipe, steel pipe conforming to ASTM A120, or nonmetallic pipe shall not be used.

Fitting Materials

Fitting materials **MUST** conform to the requirements as outlined in NFPA 2001, ISO 14520 or EN 15004 latest editions.

Fitting Size	Fitting Class
Up to 80 mm	Class 300 malleable or ductile iron
Over 80 mm	1000 lb. ductile or forged steel
All pipe sizes	Class 600 flanged

NOTE: All grooved fittings must conform to the pressure requirements outlined in NFPA 2001, latest edition. Cast Iron fittings are NOT acceptable.

Acceptable screwed fittings:

- EN 10241 Steel Threaded pipe fittings, Seamless with a test pressure of 150 bar
- EN 10242 Threaded pipe fittings in malleable cast iron. (These must be purchased to special order with a test pressure of 100 bar)

The following piping types and grades are acceptable for pipe configurations utilizing threaded, welded or grooved and connections: (Reference: NFPA 2001)

Pipe Size (mm)	Pipe Grade													
	BS1387 Heavy	A-53B A-106B	A-53B			A-53A A-106A			A-53A					
			Pipe & Joint Type											
	Seamless	Seamless 1, 2, 3 & 4	ERW			Seamless			ERW					
1, 2, 3 & 4	1		2, 3	4	1	2, 3	4	1	2	3	4			
15	A	Schedule 40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
20	A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
25	A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
32	A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
40	A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
50	No		✓	✓	✓	✓	✓	✓	✓	No	✓	✓	✓	
65	No		✓	✓	✓	✓	✓	✓	✓	No	✓	✓	✓	
80	No		✓	✓	✓	✓	✓	✓	✓	No	✓	✓	✓	
100	No		✓	✓	✓	✓	✓	✓	✓	No	✓	✓	✓	
125	No		✓	✓	✓	✓	No	✓	✓	No	No	✓	No	
150	No		✓	No	✓	✓	No	✓	No	No	No	✓	No	
200	No		✓	No	✓	No	No	✓	No	No	No	✓	No	
15	No		Schedule 90	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20	No			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
32	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
40	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
50	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
65	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
80	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
100	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
125	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
150	No	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
200	No	a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Joint Types:

1=NPT

2=BSPT

3=Rolled Groove & Welded

4=Cut Groove

ERW=Electric Resistance Welded Pipe

INSTALLATION

The piping system should be securely supported with due allowance for agent thrust forces, thermal expansion, and contraction, and should not be subject to mechanical, chemical, vibration, or other type of damage. The maximum horizontal spacing for screwed, welded or grooved pipe are as indicated on the following table:

Pipe Size (mm)	Distance Between Supports (m)	Rod Diameter (mm)
10	2.2	10
15	2.2	10
20	2.1	10
25	2.2	10
32	2.2	10
40	2.8	10
50	3.1	10
65	3.4	15
80	3.7	15
100	4.3	20
150	5.2	25

NOTE:

- Each pipe section shall be cleaned internally before installation with a nonflammable cleaner such as Perchloroethylene in accordance with NFPA 2001, latest edition.
- Teflon tape or joint compound shall be used on all threaded joints. All grooved coupling gaskets shall be lubricated per the manufacturer's specifications.
- "C" Clamps are not acceptable to support rod hangers.
- Rigid pipe supports are required to support the "live load" of the pipe system during discharge. Rigid bracing is required at each directional change, fitting, tee and nozzle. All drops to 180° nozzles require back bracing in the opposite direction of the discharge. Earthquake bracing shall be used where required by local code. (Refer to ANSI B31.1 Power Piping Code and ISO 14520-1 and EN 15004-1 tables 3 & 4 for additional information)
- For additional information on pressure rating of pipe and fittings, plus recommended pipe supports and hangers, refer to FSSA's Pipe Design Handbook, FSSA PDH-01.
- All system piping shall be installed in strict accordance to system plans. If piping changes are necessary, they must be recalculated on Fike's Flow Calculation Program.

Piping shall be installed in areas to prevent mechanical and fire damage.

Abide to ISO 14520 or EN 15004 for proper marking of pipework.

The system shall be adequately bonded and earthed to minimize the risk of electrostatic discharge. Consult NFPA 2001, ISO 15420 or EN 15004 for guidance on requirements on earthing and electrical clearances.

Systems within electrical substations or switch rooms shall be sufficiently bonded and earthed to prevent the metalwork becoming electrically charged.



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