



CODE: T1B317
 Issued: 02-26-2010
 Revised: 05-14-2021

CORPORATE PIPE CODE

CATEGORY D SERVICE

304 SS

Code	T1B317	
Design pressure, psig	150	150
Design temperature, F	-50	366
C	-46	186
Vacuum	Full	Full

Allowance for corrosion and erosion = 0.020 in. (1)
 Basis for stresses: ASME B31.3

(1) Minimum wall thickness shall be verified as part of an ongoing piping inspection program.
 Corrosion allowance is not applicable to calculate plant in-service minimum wall thickness.

Maximum hydrostatic test pressure, 225 psig. For intermediate test pressures, see Product and Service Index in Plant piping specification. For test procedure, see [SP1B](#) or ASME B31.3.

FABRICATION, ERECTION, TESTING, AND EXAMINATION

Fabrication, erection, testing, and examination shall be in accordance with the latest edition of ASME B31.3 for Category D Service.

TUBING

OD(IN)	WALL(IN)	
1/8	.035	Grade TP304 welded or seamless austenitic stainless steel tube to ASTM A269.
1/4	.049	
3/8 thru 1	.065(1)	
1-1/4	.083(1)	

QUALIFICATIONS

Tubing may be ordered pre-insulated. Insulation thickness and cover to suit temperature and environment.

Heavier wall tube may be substituted.

(1) Use 7/8", 1" (0.065" wall) & 1 1/4" (0.083" wall) OD tubing in liquid service only. For gas service, use the following minimum thicknesses:

OD(IN)	WALL(IN)
7/8 thru 1	.083
1-1/4	.109



FITTINGS

OD(IN)	WEIGHT	SPECIFICATIONS
1/8 thru 1-1/4	-	Type 316 stainless steel flareless type tube fittings. Manufacturers: Parker (A-Lok and CPI) Swagelok Hoke (Gyrolok)

QUALIFICATIONS

A hydraulic swaging tool may be required to seat 3/4" and larger fittings.

For new installations, mixing of different manufacturer's parts is not recommended. However, it is recognized that at times this may be unavoidable (e.g., equipment with tube ends from a different manufacturer; or an installed base of tube fittings of a different manufacturer than the one presently supplying tube fittings). In those cases, the following qualifications apply, and if used, will provide a safe installation:

"Interchange" of fittings is acceptable. Interchange is use of one manufacturer's nut and ferrule system with the body of another (e.g., using Hoke Gyrolok or Parker nut and ferrule system with a Swagelok body or vice versa). **EXCEPTION:** Interchange of Hoke fittings with another manufacturer's adapter is not allowed. The ferrules in a Hoke fitting will not seat in the groove of the other manufacturer's adapter and therefore will not makeup a mechanically sound joint. In installations experiencing vibration, the tube stub could eventually pull out.

"Intermix" of Hoke Gyrolok with Swagelok or Parker fittings is **NOT** permitted.

Intermix is the random mixing of ferrules, nuts, and bodies of different manufacturer's fittings.

Intermix of Parker A-Lok parts with Swagelok parts is acceptable since they are functionally equivalent.

Bends made to the radii of standard tube benders are acceptable.

Spot checks shall be made for adequate engagement of fitting with tubing and condition of tubing after assembly.



JOINTS

	OD(IN)	SPECIFICATIONS
RUNS AND MAINTENANCE		
Unions	1/8-1-1/4	Type 316 stainless steel flareless type tube unions.
FIT-UP TO FLANGED EQUIPMENT		
Threaded flange	1/8-1-1/4	Type 316 stainless steel flareless type tube male connector and threaded flange, to match mating flange.
FIT-UP TO THREADED VALVES AND EQUIPMENT		
Male Connector	1/8-1-1/4	Type 316 stainless steel flareless type tube male connector.

QUALIFICATIONS

Threaded connections shall be made up with tape or dispersion of Teflon® fluorocarbon resin, [P25E](#).

VALVES REFERENCE STANDARDS [P1V](#), [P2V](#), [P4V](#), [P5V](#), [SP5V](#)

Valves if listed below are satisfactory for most fluid services where this pipe code is listed in the Product and Service index. For proper selection of valves for a specific project or when valves are not listed below, refer to piping diagrams, drawings, or Product and Service Index.

The design pressure and temperature shown on page 1 of this code will be limited if the following valves are used. See manufacturer's data.

OD(IN)	ENDS	CHECK	GLOBE	NEEDLE	BALL
1/4 thru 3/4	TUBE	C87D (1)	T87F	T87G	
1/4 thru 1-1/4	TUBE				B89C (3)
1/4 thru 1-1/4	TUBE				B89F
1/4 thru 1-1/4	TUBE				B89AB (4)
1/4 thru 1	TH	C87E (2)			
1/4 thru 1-1/4	TH	C85C	T85F		

QUALIFICATIONS

- (1) Horizontal lift, install in horizontal lines only.
- (2) Spring poppet check.
- (3) Viton® seals. Do not use in process streams containing DMAC.
- (4) Vented ball.



STRESS RELIEVE Not required

CLEANING Remove dirt and loose weld spatter. See Product and Service Index to determine if special cleaning is required.

REVISIONS

- 02-18-2011 Supersedes T3B317. P/T rating was 400 psig @ 600F.
 - 05-04-2021 Added note (1) under Tubing Qualifications.
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