

Process Industry Practices  
Piping

**PIP PNCM0002**  
**Piping Material Specifications**  
**Line Class Index**

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## PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

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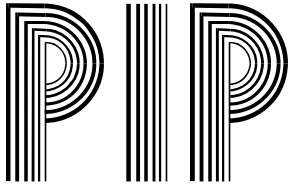
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## 1. Introduction

### 1.1 Purpose

This Practice provides a listing of the PIP Piping Material Specifications.

### 1.2 Scope

This Practice describes the basic characteristics of each PIP Material Specification. Each specification listed is described by pressure class, primary material, corrosion allowance, service type, and joint construction.

## 2. Piping Material Specifications Line Class Index

Spec. Number	ASME Press. Class	Primary Material	Corrosion Allowance	Service	Joint Construction	
					SB	LB
<b>Carbon and Low Alloy Steels</b>						
1CA1S01	150	Impact Tested Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
3CA1S01	300	Impact Tested Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
6CA1S01	600	Impact Tested Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
1CB1S01	150	Killed Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
3CB1S01	300	Killed Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
6CB1S01	600	Killed Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
9CB1S01	900	Killed Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
15CB1S01	1500	Killed Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
1CB2S01	150	Killed Carbon Steel	0.125" (1/8")	Process	SW	BW & FLG
3CB2S01	300	Killed Carbon Steel	0.125" (1/8")	Process	SW	BW & FLG
6CB2S01	600	Killed Carbon Steel	0.125" (1/8")	Process	SW	BW & FLG
9CB2S01	900	Killed Carbon Steel	0.125" (1/8")	Process	SW	BW & FLG
15CB2S01	1500	Killed Carbon Steel	0.125" (1/8")	Process	SW	BW & FLG
12CG0T01	125	Galvanized Carbon Steel	0.000"	Utilities	SW	BW & FLG
1CJ1S01	150	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
3CJ1S01	300	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
6CJ1S01	600	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
9CJ1S01	900	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
15CJ1S01	1500	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
6CJ1S02	600	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Steam/Condensate	SW	BW & FLG
9CJ1S02	900	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Steam/Condensate	SW	BW & FLG
15CJ1S02	1500	1-1/4 Cr – 1/2 Mo	0.063" (1/16")	Steam/Condensate	SW	BW & FLG

Spec. Number	ASME Press. Class	Primary Material	Corrosion Allowance	Service	Joint Construction	
					SB	LB
<b>Carbon and Low Alloy Steels (continued)</b>						
1CK1S01	150	2-1/4 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
3CK1S01	300	2-1/4 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
6CK1S01	600	2-1/4 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
9CK1S01	900	2-1/4 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
15CK1S01	1500	2-1/4 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
1CL1S01	150	5 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
3CL1S01	300	5 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
6CL1S01	600	5 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
9CL1S01	900	5 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
15CL1S01	1500	5 Cr – 1/2 Mo	0.063" (1/16")	Process	SW	BW & FLG
1CM1S01	150	9 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
3CM1S01	300	9 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
6CM1S01	600	9 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
9CM1S01	900	9 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
15CM1S01	1500	9 Cr – 1 Mo	0.063" (1/16")	Process	SW	BW & FLG
12CS1B01	175 psi	Carbon Steel (Coated)	0.063" (1/16")	Firewater (Underground)	BW	BW & FLG
1CS1B01	150	Carbon Steel	0.063" (1/16")	Liquid Bulk Transfer	BW	BW & FLG
1CS1B02	150	Carbon Steel	0.063" (1/16")	Process	BW	BW & FLG
3CS1B01	300	Carbon Steel	0.063" (1/16")	Process	BW	BW & FLG
12CS1G01	125	Carbon Steel	0.063" (1/16")	Utility (Air & Water)	THD	Grooved
12CS1T01	125	Carbon Steel	0.063" (1/16")	Utility (Air & Water)	THD	BW & FLG
1CS1S01	150	Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
3CS1S01	300	Carbon Steel	0.063" (1/16")	Process	SW	BW & FLG
12CS2T01	125	Carbon Steel	0.125" (1/8")	Utility (Air & Water)	THD	BW & FLG
3CS2B01	300	Carbon Steel	0.125" (1/8")	Process	BW	BW & FLG
1CS2S01	150	Carbon Steel	0.125" (1/8")	Process	SW	BW & FLG
3CS2S01	300	Carbon Steel	0.125" (1/8")	Process	SW	BW & FLG
1CS1S02	150	Carbon Steel	0.063" (1/16")	Steam/Condensate	SW	BW & FLG
3CS1S02	300	Carbon Steel	0.063" (1/16")	Steam/Condensate	SW	BW & FLG
6CS1S01	600	Carbon Steel	0.063" (1/16")	Steam/Condensate	SW	BW & FLG
9CS1S01	900	Carbon Steel	0.063" (1/16")	Steam/Condensate	SW	BW & FLG
15CS1S01	1500	Carbon Steel	0.063" (1/16")	Steam/Condensate	SW	BW & FLG

Spec. Number	ASME Press. Class	Primary Material	Corrosion Allowance	Service	Joint Construction	
					SB	LB
<b>Jacketed Piping</b>						
1CS1J01	150	Carbon Steel	0.063" (1/16")	Process (Steam)	Jacketed	
3CS1J01	300	Carbon Steel	0.063" (1/16")	Process (Steam)	Jacketed	
1SA0J01	150	304/304L SS	0.000"	Process (Steam)	Jacketed	
3SA0J01	300	304/304L SS	0.000"	Process (Steam)	Jacketed	
1SA0J02	150	304/304L SS	0.000"	Process (Hot Oil)	Jacketed	
3SA0J02	300	304/304L SS	0.000"	Process (Hot Oil)	Jacketed	
1SD0J01	150	316/316L SS	0.000"	Process (Steam)	Jacketed	
3SD0J01	300	316/316L SS	0.000"	Process (Steam)	Jacketed	
1SD0J02	150	316/316L SS	0.000"	Process (Hot Oil)	Jacketed	
3SD0J02	300	316/316L SS	0.000"	Process (Hot Oil)	Jacketed	
<b>Lined or Internally Coated</b>						
12LB0M01	175 psi	Cement Lined Ductile Iron	0.000"	Firewater	Mechanical Joints	
1LK0F01	150	PVDF Lined Carbon Steel	0.000"	Process	Flanged Only	
1LP0F01	150	Polypropylene Lined Carbon Steel	0.000"	Process	Flanged Only	
1LT0F01	150	PTFE Lined Carbon Steel	0.000"	Process	Flanged Only	
<b>Nickel or Nickel Alloys</b>						
1NA0B01	150	Alloy C2000	0.000"	Process (PTFE)	BW	BW & FLG
1NB0B01	150	Alloy B2	0.000"	Process (PTFE)	BW	BW & FLG
3NB0B02	300	Alloy B2	0.000"	Process	BW	BW & FLG
1NC0B01	150	Alloy C276	0.000"	Process (PTFE)	BW	BW & FLG
3NC0B01	300	Alloy C276	0.000"	Process (PTFE)	BW	BW & FLG
1NC0B02	150	Alloy C276	0.000"	Process	BW	BW & FLG
3NC0B02	300	Alloy C276	0.000"	Process	BW	BW & FLG
1NU0B01	150	Alloy 20	0.000"	Process (PTFE)	BW	BW & FLG
3NU0B01	300	Alloy 20	0.000"	Process (PTFE)	BW	BW & FLG
1NU0S01	150	Alloy 20	0.000"	Process	SW	BW & FLG
3NU0S01	300	Alloy 20	0.000"	Process	SW	BW & FLG
1NM0B01	150	Alloy 400	0.000"	Process (PTFE)	BW	BW & FLG
3NM0B01	300	Alloy 400	0.000"	Process (PTFE)	BW	BW & FLG
1NM0S01	150	Alloy 400	0.000"	Process	SW	BW & FLG
3NM0S01	300	Alloy 400	0.000"	Process	SW	BW & FLG
50NM0L01	Thru 600	Alloy 400	0.000"	Process Tubing	COMP FTG	N/A
50NM0L02	Thru 600	Alloy 400	0.000"	Process Tubing (PTFE)	COMP FTG	N/A
1NM0B02	150	Alloy 400	0.000"	Oxygen	BW	BW & FLG
3NM0B02	300	Alloy 400	0.000"	Oxygen	BW	BW & FLG
6NM0B02	600	Alloy 400	0.000"	Oxygen	BW	BW & FLG

Spec. Number	ASME Press. Class	Primary Material	Corrosion Allowance	Service	Joint Construction	
					SB	LB
<b>Plastics</b>						
12PD0H01	150 psi	HDPE	0.000"	Fire Water	Heat Fusion & FLG	
12PD0H02	160 psi	HDPE	0.000"	Utility	Heat Fusion & FLG	
1PP0H01	150 psi	Polypropylene (Copolymer)	0.000"	Process	Heat Fusion & FLG	
1PU0C01	150 psi	CPVC	0.000"	Process	Cement, Solvent & FLG	
1PV0C01	150 psi	PVC	0.000"	Process	Cement, Solvent & FLG	
<b>Stainless (Hi-Alloy) Steels</b>						
1SA0S01	150	304/304L SS	0.000"	Process	SW	BW & FLG
3SA0S01	300	304/304L SS	0.000"	Process	SW	BW & FLG
6SA0S01	600	304/304L SS	0.000"	Process	SW	BW & FLG
9SA0S01	900	304/304L SS	0.000"	Process	SW	BW & FLG
15SA0S01	1500	304/304L SS	0.000"	Process	SW	BW & FLG
1SA0B01	150	304/304L SS	0.000"	Lube Oil	BW	BW & FLG
3SA0B01	300	304/304L SS	0.000"	Lube Oil	BW	BW & FLG
6SA0B01	600	304/304L SS	0.000"	Lube Oil	BW	BW & FLG
1SA0B02	150	304/304L SS	0.000"	Process	BW	BW & FLG
3SA0B02	300	304/304L SS	0.000"	Process (PTFE)	BW	BW & FLG
6SA0B02	600	304/304L SS	0.000"	Process (PTFE)	BW	BW & FLG
1SA0B03	150	304/304L SS	0.000"	Process	BW	BW & FLG
3SA0B03	300	304/304L SS	0.000"	Process	BW	BW & FLG
1SA0S02	150	304/304L SS	0.000"	Process (PTFE)	SW	BW & FLG
3SA0S02	300	304/304L SS	0.000"	Process (PTFE)	SW	BW & FLG
50SA0L01	Thru 600	304/304L SS	0.000"	Process Tubing	COMP FTG	N/A
50SA0L02	Thru 600	304/304L SS	0.000"	Process Tubing (PTFE)	COMP FTG	N/A
1SA0S03	150	304/304L SS	0.000"	Low Temp	SW	BW & FLG
3SA0S03	300	304/304L SS	0.000"	Low Temp	SW	BW & FLG
6SA0S03	600	304/304L SS	0.000"	Low Temp	SW	BW & FLG
1SA0S04	150	304/304L SS	0.000"	Cryogenic	SW	BW & FLG
3SA0S04	300	304/304L SS	0.000"	Cryogenic	SW	BW & FLG
6SA0S04	600	304/304L SS	0.000"	Cryogenic	SW	BW & FLG
1SA0B05	150	304/304L SS	0.000"	Oxygen	BW	BW & FLG
3SA0B05	300	304/304L SS	0.000"	Oxygen	BW	BW & FLG
6SA0B05	600	304/304L SS	0.000"	Oxygen	BW	BW & FLG

Spec. Number	ASME Press. Class	Primary Material	Corrosion Allowance	Service	Joint Construction	
					SB	LB
<b>Stainless (Hi-Alloy) Steels (continued)</b>						
3SC0S01	300	304H SS	0.000"	Process	SW	BW & FLG
6SC0S01	600	304H SS	0.000"	Process	SW	BW & FLG
9SC0S01	900	304H SS	0.000"	Process	SW	BW & FLG
15SC0S01	1500	304H SS	0.000"	Process	SW	BW & FLG
1SD0B02	150	316/316L SS	0.000"	Process	BW	BW & FLG
3SD0B02	300	316/316L SS	0.000"	Process (PTFE)	BW	BW & FLG
6SD0B02	600	316/316L SS	0.000"	Process (PTFE)	BW	BW & FLG
1SD0B03	150	316/316L SS	0.000"	Process	BW	BW & FLG
3SD0B03	300	316/316L SS	0.000"	Process	BW	BW & FLG
1SD1B01	150	316/316L SS	0.063" (1/16")	Process (PTFE)	BW	BW & FLG
3SD1B01	300	316/316L SS	0.063" (1/16")	Process (PTFE)	BW	BW & FLG
1SD1B02	150	316/316L SS	0.063" (1/16")	Process	BW	BW & FLG
3SD1B02	300	316/316L SS	0.063" (1/16")	Process	BW	BW & FLG
1SD0S01	150	316/316L SS	0.000"	Process	SW	BW & FLG
3SD0S01	300	316/316L SS	0.000"	Process	SW	BW & FLG
6SD0S01	600	316/316L SS	0.000"	Process	SW	BW & FLG
9SD0S01	900	316/316L SS	0.000"	Process	SW	BW & FLG
15SD0S01	1500	316/316L SS	0.000"	Process	SW	BW & FLG
1SD0S02	150	316/316L SS	0.000"	Process (PTFE)	SW	BW & FLG
3SD0S02	300	316/316L SS	0.000"	Process (PTFE)	SW	BW & FLG
50SD0L01	Thru 600	316/316L SS	0.000"	Process Tubing	COMP FTG	N/A
50SD0L02	Thru 600	316/316L SS	0.000"	Process Tubing (PTFE)	COMP FTG	N/A
6SJ0S01	600	321 SS	0.000"	Process	SW	BW & FLG
9SJ0S01	900	321 SS	0.000"	Process	SW	BW & FLG
15SJ0S01	1500	321 SS	0.000"	Process	SW	BW & FLG
6SJ1S01	600	321 SS	0.063" (1/16")	Process	SW	BW & FLG
9SJ1S01	900	321 SS	0.063" (1/16")	Process	SW	BW & FLG
15SJ1S01	1500	321 SS	0.063" (1/16")	Process	SW	BW & FLG
6SK0S01	600	321H SS	0.000"	Process	SW	BW & FLG
9SK0S01	900	321H SS	0.000"	Process	SW	BW & FLG
15SK0S01	1500	321H SS	0.000"	Process	SW	BW & FLG
6SK1S01	600	321H SS	0.063" (1/16")	Process	SW	BW & FLG
9SK1S01	900	321H SS	0.063" (1/16")	Process	SW	BW & FLG
15SK1S01	1500	321H SS	0.063" (1/16")	Process	SW	BW & FLG

Spec. Number	ASME Press. Class	Primary Material	Corrosion Allowance	Service	Joint Construction	
					SB	LB
<b>Stainless (Hi-Alloy) Steels (continued)</b>						
1SP1S01	150	2205 Duplex SS	0.063" (1/16")	Process	SW	BW & FLG
3SP1S01	300	2205 Duplex SS	0.063" (1/16")	Process	SW	BW & FLG
6SP1S01	600	2205 Duplex SS	0.063" (1/16")	Process	SW	BW & FLG
9SP1S01	900	2205 Duplex SS	0.063" (1/16")	Process	SW	BW & FLG
15SP1S01	1500	2205 Duplex SS	0.063" (1/16")	Process	SW	BW & FLG
1SV0S01	150	254 SMO	0.000"	Process (PTFE)	SW	BW & FLG
3SV0S01	300	254 SMO	0.000"	Process (PTFE)	SW	BW & FLG
<b>Zirconium</b>						
1MZ0B01	150	Zirconium	0.000"	Process	BW	BW & FLG