

PIPE GRADES

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Pipe grades are classified in accordance with API 5L specification. The specification established requirements for two product specification levels – PSL 1 and PSL 2. Reference API 5L for full specifications.

PSL 1: Includes requirements for chemistry, ductility, minimum yield strength, and minimum tensile strength.

PSL 2: Adds requirements for maximum yield strength, and maximum tensile strength.

API SPECIFICATION 5L, 44TH EDITION

Requirements for the Results of Tensile Tests for PSL 1 Pipe

Grade	Yield Strength Minimum		Ultimate Tensile Strength Minimum	
	MPa	ksi	MPa	ksi
A25	175	25	310	45
A25P	175	25	310	45
A	210	31	335	49
B	245	36	415	60
X42	290	42	415	60
X46	320	46	435	63
X52	360	52	460	67
X56	390	57	490	71
X60	415	60	520	75
X65	450	65	535	78
X70	485	70	570	83

API SPECIFICATION 5L, 44TH EDITION

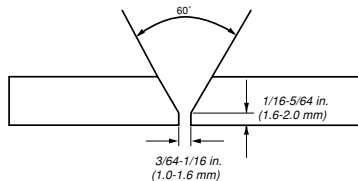
Requirements for the Results of Tensile Tests for PSL 2 Pipe

Grade	Yield Strength Minimum		Yield Strength Maximum		Ultimate Tensile Strength Minimum		Ultimate Tensile Strength Maximum	
	MPa	ksi	MPa	ksi	MPa	ksi	MPa	ksi
B	245	36	450	65	415	60	760	110
X42	290	42	495	72	415	60	760	110
X46	320	46	525	76	435	63	760	110
X52	360	52	530	77	460	67	760	110
X56	390	57	545	79	490	71	760	110
X60	415	60	565	82	520	75	760	110
X65	450	65	600	87	535	78	760	110
X70	485	70	635	92	570	83	760	110
X80	555	81	705	102	625	91	825	120
X90	625	91	775	112	695	101	915	133
X100	690	100	840	122	760	110	990	144
X120	830	120	1050	152	915	133	1145	166

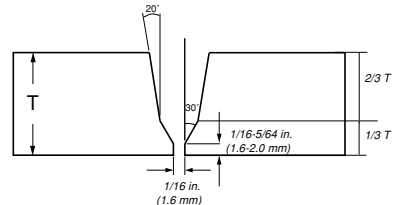
COMMON PIPE JOINT DESIGNS

A common weld joint for thinner walled pipe is the “API” fitup with a 60 degree included angle, a 1.6 mm (1/16 in) and 1.6 mm (1/16 in).

As an alternative, for thicker-walled pipe [>20 mm ($>3/4$ in)], a compound bevel can be used. The amount of material required to fill a compound bevel joint is less than that for a 60 degree included angle preparation, so productivity may be increased.



Wall thickness $<3/4$ in (<20 mm)



Wall thickness $>3/4$ in (>20 mm)