AUSTRALIAN PIPELINE VALVE®

ASME B16.34 PRESSURE / TEMPERATURE RATINGS VALVE BODY MATERIALS

MAXIMUM NON-SHOCK WORKING PRESSURES (Standard Class) BAR

	150LB Series					300LB Series					600LB Series					900LB Series					1500LB Series					2500LB Series				
TEMPERATURE ºC	ASTM A216 WCB (3)	A105 (3/7) A350 LF3 (1)	ASTM A350 LF2 (3)	ASTM A217 WC6 (6/8)	A182 F11 (6/8)	ASTM A216 WCB (3)	A105 (3/7) A350 LF3 (1)	ASTM A350 LF2 (3)	ASTM A217 WC6 (6/8)	A182 F11 (6/8)	ASTM A216 WCB (3)	A105 (3/7) A350 LF3 (1)	ASTM A350 LF2 (3)	ASTM A217 WC6 (6/8)	A182 F11 (6/8)	ASTM A216 WCB (3)	A105 (3/7) A350 LF3 (1)	ASTM A350 LF2 (3)	ASTM A217 WC6 (6/8)	A182 F11 (6/8)	ASTM A216 WCB (3)	A105 (3/7) A350 LF3 (1)	ASTM A350 LF2 (3)	ASTM A217 WC6 (6/8)	A182 F11 (6/8)	ASTM A216 WCB (3)	A105 (3/7) A350 LF3 (1)	ASTM A350 LF2 (3)	ASTM A217 WC6 (6/8)	A182 F11 (6/8)
Material Group	1.1	1.1	1.1	1.9	1.9	1.1	1.1	1.1	1.9	1.9	1.1	1.1	1.1	1.9	1.9	1.1	1.1	1.1	1.9	1.9	1.1	1.1	1.1	1.9	1.9	1.1	1.1	1.1	1.9	1.9
-29 TO 38	19.6	19.6	19.6	19.8	19.8	51.1	51.1	51.1	51.7	51.7	102.1	102.1	102.1	103.4	103.4	153.2	153.2	153.2	155.1	155.1	255.3	255.3	255.3	258.6	258.6	425.5	425.5	425.5	430.9	430.9
50	19.2	19.2	19.2	19.5	19.5	50.1	50.1	50.1	51.7	51.7	100.2	100.2	100.2	103.4	103.4	150.4	150.4	150.4	155.1	155.1	250.6	250.6	250.6	258.6	258.6	417.7	417.7	417.7	430.9	430.9
100	17.7	17.7	17.7	17.7	17.7	46.6	46.6	46.6	51.5	51.5	93.2	93.2	93.2	103.0	103.0	139.8	139.8	139.8	154.4	154.4	233.0	233.0	233.0	257.4	257.4	388.3	388.3	388.3	429.0	429.0
150	15.8	15.8	15.8	15.8	15.8	45.1	45.1	45.1	49.7	49.7	90.2	90.2	90.2	99.5	99.5	135.2	135.2	135.2	149.2	149.2	225.4	225.4	225.4	248.7	248.7	320.8	320.8	320.8	414.2	414.2
200	13.8	13.8	13.8	13.8	13.8	43.8	43.8	43.8	48.0	48.0	87.6	87.6	87.6	95.9	95.9	131.4	131.4	131.4	143.9	143.9	219.0	219.0	219.0	239.8	239.8	365.0	365.0	365.0	399.6	399.6
250	12.1	12.1	12.1	12.1	12.1	41.9	41.9	41.9	46.3	46.3	83.9	83.9	83.9	92.7	92.7	125.8	125.8	125.8	139.0	139.0	209.7	209.7	209.7	231.8	231.8	349.5	349.5	349.5	386.2	386.2
300	10.2	10.2	10.2	10.2	10.2	39.8	39.8	39.8	42.9	42.9	79.6	79.6	79.6	85.7	85.7	119.5	119.5	119.5	128.6	128.6	199.1	199.1	199.1	214.4	214.4	331.8	331.8	331.8	357.1	357.1
350	8.4	8.4	8.4	8.4	8.4	37.6	37.6	37.6	40.3	40.3	75.1	75.1	75.1	80.4	80.4	112.7	112.7	112.7	120.7	120.7	187.8	187.8	187.8	201.1	201.1	313.0	313.0	313.0	335.3	335.3
400	6.5	6.5	6.5	6.5	6.5	34.7	34.7	34.7	36.5	36.5	69.4	69.4	69.4	73.3	73.3	104.2	104.2	104.2	109.8	109.8	173.6	173.6	173.6	183.1	183.1	289.3	289.3	289.3	304.9	304.9
450	4.6	4.6	4.6	4.6	4.6	23.0	23.0	23.0	33.7	33.7	46.0	46.0	46.0	67.7	67.7	69.0	69.0	69.0	101.4	101.4	115.0	115.0	115.0	169.0	169.0	191.7	191.7	191.7	281.8	281.8
500	2.8	2.8	2.8	2.8	2.8	11.8	11.8	11.8	25.7	25.7	23.5	23.5	23.5	51.5	51.5	35.3	35.3	35.3	77.2	77.2	58.8	58.8	58.8	128.6	128.6	97.9	97.9	97.9	214.4	214.4
538	1.4	1.4	1.4	1.4	1.4	5.9	5.9	5.9	14.9	14.9	11.8	11.8	11.8	29.8	29.8	17.7	17.7	17.7	44.7	44.7	29.5	29.5	29.5	74.5	74.5	49.2	49.2	49.2	124.1	124.1
550	-	-	-	1.4 (a)	1.4 (a)	-	-	-	12.7	12.7	-	-	-	25.4	25.4	-	-	-	38.1	38.1	-	-	-	63.5	63.5	-	-	-	105.9	105.9
575	-	-	-	1.4 (a)	1.4 (a)	-	-	-	8.8	8.8	-	-	-	17.6	17.6	-	-	-	26.4	26.4	-	-	-	44.0	44.0	-	-	-	73.4	73.4
600	-	-	-	1.4 (a)	1.4 (a)	-	-	-	6.1	6.1	-	-	-	12.2	12.2	-	-	-	18.3	18.3	-	-	-	30.5	30.5	-	-	-	50.9	50.9
650	-	-	-	1.1 (a)	1.1 (a)	-	-	-	2.8	2.8	-	-	-	5.7	5.7	-	-	-	8.5	8.5	-	-	-	14.2	14.2	-	-	-	23.6	23.6

MAXIMUM NON-SHOCK WORKING PRESSURES (Standard Class) BAR

	150LB Series					300LB Series					600LB Series					900LB Series					1500LB Series					2500LB Series				
TEMPERATURE ºC	A351 CF8M (2) /CF3A (1) A182 F316 (2)	ASTM A351 CF8C (4) A182 F347 (4)	A182 F44 F51 (5) F53 (5) F55 S31803 (5)	A351 CE8MN (5) CK3MCuN S32760 (5) S31254	A995 GR6A S32750 (5) A995 GR1B CD3MWCuN	A351 CF8M (2) /CF3A (1) A182 F316 (2)	ASTM A351 CF8C (4) A182 F347 (4)	A182 F44 F51 (5) F53 (5) F55 S31803 (5)	A351 CE8MN (5) CK3MCuN S32760 (5) S31254	A995 GR6A S32750 (5) A995 GR1B CD3MWCuN	A351 CF8M (2) /CF3A (1) A182 F316 (2)	ASTM A351 CF8C (4) A182 F347 (4)	A182 F44 F51 (5) F53 (5) F55 S31803 (5)	A351 CE8MN (5) CK3MCuN S32760 (5) S31254	A995 GR6A S32750 (5) A995 GR1B CD3MWCuN	A351 CF8M (2) /CF3A (1) A182 F316 (2)	ASTM A351 CF8C (4) A182 F347 (4)	A182 F44 F51 (5) F53 (5) F55 S31803 (5)	A351 CE8MN (5) CK3MCuN S32760 (5) S31254	A995 GR6A S32750 (5) A995 GR1B CD3MWCuN	A351 CF8M (2) /CF3A (1) A182 F316 (2)	ASTM A351 CF8C (4) A182 F347 (4)	A182 F44 F51 (5) F53 (5) F55 S31803 (5)	A351 CE8MN (5) CK3MCuN S32760 (5) S31254	A995 GR6A S32750 (5) A995 GR1B CD3MWCuN	A351 CF8M (2) /CF3A (1) A182 F316 (2)	ASTM A351 CF8C (4) A182 F347 (4)	A182 F44 F51 (5) F53 (5) F55 S31803 (5)	A351 CE8MN (5) CK3MCuN S32760 (5) S31254	A995 GR6A S32750 (5) A995 GR1B CD3MWCuN
Material Group	2.2	2.5	2.8	2.8	2.8	2.2	2.5	2.8	2.8	2.8	2.2	2.5	2.8	2.8	2.8	2.2	2.5	2.8	2.8	2.8	2.2	2.5	2.8	2.8	2.8	2.2	2.5	2.8	2.8	2.8
-29 TO 38	19.0	19.0	20.0	20.0	20.0	49.6	49.6	51.7	51.7	51.7	99.3	99.3	103.4	103.4	103.4	148.9	148.9	155.1	155.1	155.1	248.2	248.2	258.6	258.6	258.6	413.7	413.7	430.9	430.9	430.9
50	18.4	18.7	19.5	19.5	19.5	48.1	48.8	51.7	51.7	51.7	96.2	97.5	103.4	103.4	103.4	144.3	146.3	155.1	155.1	155.1	240.6	243.8	258.6	258.6	258.6	400.9	406.4	430.9	430.9	430.9
100	16.2	17.4	17.7	17.7	17.7	42.2	45.3	50.7	50.7	50.7	84.4	90.6	101.3	101.3	101.3	126.6	135.9	152.0	152.0	152.0	211.0	226.5	253.3	253.3	253.3	351.6	377.4	422.2	422.2	422.2
150	14.8	15.8	15.8	15.8	15.8	38.5	42.5	45.9	45.9	45.9	77.0	84.9	91.9	91.9	91.9	115.5	127.4	137.8	137.8	137.8	192.5	212.4	229.6	229.6	229.6	320.8	353.9	382.7	382.7	382.7
200	13.7	13.8	13.8	13.8	13.8	35.7	39.9	42.7	42.7	42.7	71.3	79.9	85.3	85.3	85.3	107.0	119.8	128.0	128.0	128.0	178.3	199.7	213.3	213.3	213.3	297.2	332.8	355.4	355.4	355.4
250	12.1	12.1	12.1	12.1	12.1	33.4	37.8	40.5	40.5	40.5	66.8	75.6	80.9	80.9	80.9	100.1	113.4	121.4	121.4	121.4	166.9	189.1	202.3	202.3	202.3	278.1	315.1	337.2	337.2	337.2
300	10.2	10.2	10.2	10.2	10.2	31.6	36.1	38.9	38.9	38.9	63.2	72.2	77.7	77.7	77.7	94.9	108.3	116.6	116.6	116.6	158.1	180.4	194.3	194.3	194.3	263.5	300.7	323.8	323.8	323.8
350	8.4	8.4	8.4	8.4	8.4	30.3	34.8	37.6	37.6	37.6	60.7	69.5	75.3	75.3	75.3	91.0	104.3	112.9	112.9	112.9	151.6	173.8	188.2	188.2	188.2	252.7	289.6	313.7	313.7	313.7
400	6.5	6.5	6.5	6.5	6.5	29.4	33.9	36.5	36.5	36.5	58.9	67.8	73.3	73.3	73.3	88.3	101.7	109.8	109.8	109.8	147.2	169.5	183.1	183.1	183.1	245.3	282.6	304.9	304.9	304.9
450	4.6	4.6	-	-	-	28.8	33.5	-	-	-	57.7	66.9	-	-	-	86.5	100.4	-	-	-	144.2	167.3	-	-	-	240.4	278.8	-	-	-
500	2.8	2.8	-	-	-	28.2	28.2	-	-	-	56.5	56.5	-	-	-	84.7	84.7	-	-	-	140.9	140.9	-	-	-	235.0	235.0	-	-	-
538	1.4	1.4	-	-	-	25.2	25.2	-	-	-	50.0	50.0	-	-	-	75.2	75.2	-	-	-	125.5	125.5	-	-	-	208.9	208.9	-	-	-
550	1.4 (a)	1.4 (a)	-	-	-	25.0	25.0	-	-	-	49.8	49.8	-	-	-	74.8	74.8	-	-	-	124.9	124.9	-	-	-	208.0	208.0	-	-	-
575	1.4 (a)	1.4 (a)	-	-	-	24.0	24.0	-	-	-	47.9	47.9	-	-	-	71.8	71.8	-	-	-	119.7	119.7	-	-	-	199.5	199.5	-	-	-
600	1.4 (a)	1.4 (a)	-	-	-	19.9	21.6	-	-	-	39.8	42.9	-	-	-	59.7	64.2	-	-	-	99.5	107.0	-	-	-	165.9	178.5	-	-	-
650	1.4 (a)	1.4 (a)	-	-	-	12.7	14.1	-	-	-	25.3	28.1	-	-	-	38.0	42.5	-	-	-	63.3	70.7	-	-	-	105.5	117.7	-	-	-

Refer to actual ASME chart for valve selection, this chart (updated as of 2012) is a general guide only. For PN ratings under ISO 75001-1 (AS4331) the pressure/temperature ratings are proportionately extrapolated, refer to ISO 75001-1.

(a) Flanged-ends terminate at 538ºC in 150 class.
(1) Not to be used over 345ºC.
(2) At temperatures above 538ºC only use when the carbon content is 0.04% or higher.
(3) Permissable but not recommended for prolonged use above 425ºC.
(4) Not to be used over 538ºC.
(5) Not to be used above 315ºC becomes brittle.
(6) Not to be used over 595ºC.
(7) Only killed steel to be used above 455ºC.
(8) Use normalised and tempered materials only.

ASME B16.34 PRESSURE / TEMPERATURE RATINGS VALVE BODY MATERIALS

MAXIMUM NON-SHOCK WORKING PRESSURES (Standard Class) BAR

TEMPERATURE ºC	150LB Series					300LB Series					600LB Series					900LB Series					1500LB Series					2500LB Series				
	A352 LC3 (1) A352 LC2 (1)	A216 WCC (6) A352 LCC (1)	A352 LCB (1)	A217 WC1 (2/7) A352 LC1 (1)	A217 WC9 (5/7) A182 F22 (5)	A352 LC3 (1) A352 LC2 (1)	A216 WCC (6) A352 LCC (1)	A352 LCB (1)	A217 WC1 (2/7) A352 LC1 (1)	A217 WC9 (5/7) A182 F22 (5)	A352 LC3 (1) A352 LC2 (1)	A216 WCC (6) A352 LCC (1)	A352 LCB (1)	A217 WC1 (2/7) A352 LC1 (1)	A217 WC9 (5/7) A182 F22 (5)	A352 LC3 (1) A352 LC2 (1)	A216 WCC (6) A352 LCC (1)	A352 LCB (1)	A217 WC1 (2/7) A352 LC1 (1)	A217 WC9 (5/7) A182 F22 (5)	A352 LC3 (1) A352 LC2 (1)	A216 WCC (6) A352 LCC (1)	A352 LCB (1)	A217 WC1 (2/7) A352 LC1 (1)	A217 WC9 (5/7) A182 F22 (5)	A352 LC3 (1) A352 LC2 (1)	A216 WCC (6) A352 LCC (1)	A352 LCB (1)	A217 WC1 (2/7) A352 LC1 (1)	A217 WC9 (5/7) A182 F22 (5)
Material Group	1.2	1.2	1.3	1.3	1.10	1.2	1.2	1.3	1.3	1.10	1.2	1.2	1.3	1.3	1.10	1.2	1.2	1.3	1.3	1.10	1.2	1.2	1.3	1.3	1.10	1.2	1.2	1.3	1.3	1.10
-29 TO 38	19.8	19.8	18.4	18.4	19.8	51.7	51.7	48.0	48.0	51.7	103.4	103.4	96.0	96.0	103.4	155.1	155.1	144.1	144.1	155.1	258.6	258.6	240.1	240.1	258.6	430.9	430.9	400.1	400.1	430.9
50	19.5	19.5	18.2	18.2	19.5	51.7	51.7	47.5	47.5	51.7	103.4	103.4	94.9	94.9	103.4	155.1	155.1	142.4	142.4	155.1	258.6	258.6	237.3	237.3	258.6	430.9	430.9	395.6	395.6	430.9
100	17.7	17.7	17.4	17.4	17.7	51.5	51.5	45.3	45.3	51.5	103.0	103.0	90.7	90.7	103.0	154.6	154.6	136.0	136.0	154.6	257.6	257.6	226.7	226.7	257.6	429.4	429.4	377.8	377.8	429.4
150	15.8	15.8	15.8	15.8	15.8	50.2	50.2	43.9	43.9	50.3	100.3	100.3	87.9	87.9	100.3	150.5	150.5	131.8	131.8	150.6	250.8	250.8	219.7	219.7	250.8	418.1	418.1	366.1	366.1	418.2
200	13.8	13.8	13.8	13.8	13.8	48.6	48.6	42.5	42.5	48.6	97.2	97.2	85.1	85.1	97.2	145.8	145.8	127.6	127.6	145.8	243.2	243.2	212.7	212.7	243.4	405.4	405.4	354.4	354.4	405.4
250	12.1	12.1	12.1	12.1	12.1	46.3	46.3	40.8	40.8	46.3	92.7	92.7	81.6	81.6	92.7	139.0	139.0	122.3	122.3	139.0	231.8	231.8	203.9	203.9	231.8	386.2	386.2	339.8	339.8	386.2
300	10.2	10.2	10.2	10.2	10.2	42.9	42.9	38.7	38.7	42.9	85.7	85.7	77.4	77.4	85.7	128.6	128.6	116.1	116.1	128.6	214.4	214.4	193.4	193.4	214.4	357.1	357.1	322.4	322.4	357.1
350	8.4	8.4	8.4	8.4	8.4	40.0	40.0	36.4	36.4	40.3	80.0	80.0	72.8	72.8	80.4	120.1	120.1	109.2	109.2	120.7	200.1	200.1	182.0	182.0	201.1	333.5	333.5	303.3	303.3	335.3
400	6.5	6.5	6.5	6.5	6.5	34.7	34.7	32.6	32.6	36.5	69.4	69.4	65.2	65.2	73.3	104.2	104.2	97.9	97.9	109.8	173.6	173.6	163.1	163.1	183.1	289.3	289.3	271.9	271.9	304.9
450	4.6	4.6	4.6	4.6	4.6	23.0	23.0	21.6	21.6	33.7	46.0	46.0	43.2	43.2	67.7	69.0	69.0	64.8	64.8	101.4	115.0	115.0	107.9	107.9	169.0	191.7	191.7	179.9	179.9	281.8
500	2.8	2.8	2.8	2.8	2.8	11.6	11.6	11.1	11.1	28.2	23.2	23.2	22.1	22.1	56.5	34.7	34.7	33.2	33.2	84.7	57.9	57.9	55.4	55.4	140.9	96.5	96.5	92.3	92.3	235.0
538	1.4	1.4	1.4	1.4	1.4	5.9	5.9	5.9	5.9	18.4	11.8	11.8	11.8	11.8	36.9	17.7	17.7	17.7	17.7	55.3	29.5	29.5	29.5	29.5	92.2	49.2	49.2	49.2	49.2	153.7
550	-	-	-	-	1.4 (a)	-	-	-	-	15.6	-	-	-	-	31.3	-	-	-	-	46.9	-	-	-	-	78.2	-	-	-	-	130.3
575	-	-	-	-	1.4 (a)	-	-	-	-	10.5	-	-	-	-	21.1	-	-	-	-	31.6	-	-	-	-	52.6	-	-	-	-	87.7
600	-	-	-	-	1.4 (a)	-	-	-	-	6.9	-	-	-	-	13.8	-	-	-	-	20.7	-	-	-	-	34.4	-	-	-	-	57.4
650	-	-	-	-	1.1 (a)	-	-	-	-	2.8	-	-	-	-	5.7	-	-	-	-	8.5	-	-	-	-	14.2	-	-	-	-	23.6

MAXIMUM NON-SHOCK WORKING PRESSURES (Standard Class) BAR

TEMPERATURE ºC	150LB Series					300LB Series					600LB Series					900LB Series					1500LB Series					2500LB Series				
	A217 C5 (7) A182 F5a	A351 CF8 (3) A182 F304 (3)	A351 CF10 A182 F304H	A182 304L (5) A182 316L	A351 CN7M (4) ALLOY 20	A217 C5 (7) A182 F5a	A351 CF8 (3) A182 F304 (3)	A351 CF10 A182 F304H	A182 304L (5) A182 316L	A351 CN7M (4) ALLOY 20	A217 C5 (7) A182 F5a	A351 CF8 (3) A182 F304 (3)	A351 CF10 A182 F304H	A182 304L (5) A182 316L	A351 CN7M (4) ALLOY 20	A217 C5 (7) A182 F5a	A351 CF8 (3) A182 F304 (3)	A351 CF10 A182 F304H	A182 304L (5) A182 316L	A351 CN7M (4) ALLOY 20	A217 C5 (7) A182 F5a	A351 CF8 (3) A182 F304 (3)	A351 CF10 A182 F304H	A182 304L (5) A182 316L	A351 CN7M (4) ALLOY 20	A217 C5 (7) A182 F5a	A351 CF8 (3) A182 F304 (3)	A351 CF10 A182 F304H	A182 304L (5) A182 316L	A351 CN7M (4) ALLOY 20
Material Group	1.13	2.1	2.1	2.3	3.17	1.13	2.1	2.1	2.3	3.17	1.13	2.1	2.1	2.3	3.17	1.13	2.1	2.1	2.3	3.17	1.13	2.1	2.1	2.3	3.17	1.13	2.1	2.1	2.3	3.17
-29 TO 38	20.0	19.0	19.0	15.9	15.9	51.7	49.6	49.6	41.4	41.4	103.4	99.3	99.3	82.7	82.7	155.1	148.9	148.9	124.1	124.1	258.6	248.2	248.2	206.8	206.8	430.9	413.7	413.7	344.7	344.7
50	19.5	18.3	18.3	15.3	15.4	51.7	47.8	47.8	40.0	40.1	103.4	95.6	95.6	80.0	80.3	155.1	143.5	143.5	120.1	120.4	258.6	239.1	239.1	200.1	200.7	430.9	398.5	398.5	333.5	334.4
100	17.7	15.7	15.7	13.3	13.5	51.5	40.9	40.9	34.8	35.3	103.0	81.7	81.7	69.6	70.6	154.6	122.6	122.6	104.4	105.9	257.6	204.3	204.3	173.9	176.5	429.4	340.4	340.4	289.9	294.2
150	15.8	14.2	14.2	12.0	12.3	50.3	37.0	37.0	31.4	32.0	100.3	74.0	74.0	62.8	64.1	150.6	111.0	111.0	94.2	96.1	250.8	185.0	185.0	157.0	160.2	418.2	308.4	308.4	261.6	267.0
200	13.8	13.2	13.2	11.2	11.3	48.6	34.5	34.5	29.2	29.4	97.2	69.0	69.0	58.3	58.7	145.8	103.4	103.4	87.5	88.1	243.4	172.4	172.4	145.8	146.8	405.4	287.3	287.3	243.0	244.7
250	12.1	12.1	12.1	10.5	10.4	46.3	32.5	32.5	27.5	27.2	92.7	65.0	65.0	54.9	54.4	139.0	97.5	97.5	82.4	81.7	231.8	162.4	162.4	137.3	136.1	386.2	270.7	270.7	228.9	226.9
300	10.2	10.2	10.2	10.0	9.7	42.9	30.9	30.9	26.1	25.4	85.7	61.8	61.8	52.1	50.8	128.6	92.7	92.7	78.2	76.1	214.4	154.6	154.6	130.3	126.9	357.1	257.6	257.6	217.2	211.5
325	9.3	9.3	9.3	9.3	9.3	41.4	30.2	30.2	25.5	24.4	82.6	60.4	60.4	51.1	48.8	124.0	90.7	90.7	76.4	73.3	206.6	151.1	151.1	127.4	122.1	344.3	251.9	251.9	212.3	203.5
350	8.4	8.4	8.4	8.4	-	40.3	29.6	29.6	25.1	-	80.4	59.3	59.3	50.1	-	120.7	88.9	88.9	75.2	-	201.1	148.1	148.1	125.4	-	335.3	246.9	246.9	208.9	-
400	6.5	6.5	6.5	6.5	-	36.5	28.4	28.4	24.3	-	73.3	56.9	56.9	48.6	-	109.8	85.3	85.3	72.9	-	183.1	142.2	142.2	121.5	-	304.9	237.0	237.0	202.5	-
450	4.6	4.6	4.6	4.6	-	33.7	27.4	27.4	-	-	67.7	54.8	54.8	-	-	101.4	82.2	82.2	-	-	169.0	137.0	137.0	-	-	281.8	228.4	228.4	-	-
500	2.8	2.8	2.8	-	-	21.4	26.5	26.5	-	-	42.8	53.0	53.0	-	-	64.1	79.5	79.5	-	-	106.9	132.4	132.4	-	-	178.2	220.7	220.7	-	-
538	1.4	1.4	1.4	-	-	13.7	24.4	24.4	-	-	27.4	48.9	48.9	-	-	41.1	73.3	73.3	-	-	68.6	122.1	122.1	-	-	114.3	203.6	203.6	-	-
550	1.4 (a)	1.4 (a)	1.4 (a)	-	-	12.0	23.6	23.6	-	-	24.1	47.1	47.1	-	-	36.1	70.7	70.7	-	-	68.6	117.8	117.8	-	-	100.4	196.3	196.3	-	-
575	1.4 (a)	1.4 (a)	1.4 (a)	-	-	8.9	20.8	20.8	-	-	17.8	41.7	41.7	-	-	26.7	62.5	62.5	-	-	44.4	104.2	104.2	-	-	74.0	173.7	173.7	-	-
600	1.4 (a)	1.4 (a)	1.4 (a)	-	-	6.2	16.9	16.9	-	-	12.5	33.8	33.8	-	-	18.7	50.6	50.6	-	-	31.2	84.4	84.4	-	-	51.9	140.7	140.7	-	-
650	0.9 (a)	1.4 (a)	1.4 (a)	-	-	2.4	11.3	11.3	-	-	4.7	22.5	22.5	-	-	7.1	33.8	33.8	-	-	11.8	56.3	56.3	-	-	19.7	93.8	93.8	-	-

(a) Flanged end valve ratings terminate at 538ºC.
(1) Not to be used over 345ºC.
(2) Upon prolonged exposure to temperatures above about 875ºF (470ºC), the carbide phase of carbon-molybdenum steel may be converted to graphite.
(3) At temperature over 1000ºF (538ºC), use only when the carbon is 0.04% or higher.
(4) Must be solution annealed. To be superceded by CN3MCu which will do a higher temperature range, with heat resistance near to wrought/forged grades. Not yet been established by ASME B16.34 - 2009.
(5) Following grades permissible but not recommended for prolonged use: F22 and WC9 over 595ºC, F304L over 425ºC.
(6) Permissible, but not recommended for prolonged usage above about 425ºC.
(7) Use normalised & tempered material only.

DISCLAIMER:- This is a general overview. Information provided should not be used to make your operational or design decision. We accept no liability or responsibility for the information and do not guarantee correctness. Factors such as trim materials, bolting, gaskets, seals, carbon content, heat treatment, etc., can vary temperature rating. Refer to actual ASTM P/T charts as only short term use at high temperatures is allowed in some cases. Ratings shown may vary dependant upon different combinations of materials, sizes and service applications where different safety factors may apply. These tables shown are standard class-A, special class-B (higher ratings) refer ANSI B16.34-2009.

ASME B16.34/B16.5 (-29 TO +38ºC) MAX. WORKING & TEST PRESSURES

MATERIAL		PRESSURE (psig) by classes							
GROUP	ITEM	150	300	400	600	900	1500	2500	4500
1.1 A105 A350 LF2/LF3/LF6 A216 WCB	Working Pressure	285	740	990	1480	2220	3705	6170	11110
	Shell Test	450	1125	1500	2225	3350	5575	9275	16675
	Seat Test	315	815	1090	1630	2445	4075	6790	12225
1.2, 1.7, 1.9, 1.10, 1.11, 1.13, 1.14 A352 LC2/LC3/LCC A217 WC5/WC6/WC9	Working Pressure	290	750	1000	1500	2250	3750	6250	11250
	Shell Test	450	1125	1500	2250	3375	5625	9375	16875
	Seat Test	320	825	1100	1650	2475	4125	6875	12375
1.3, 1.5 A182 F1 A352 LCB/LC1 A217 WC1	Working Pressure	265	695	925	1390	2090	3482	5803	10447
	Shell Test	400	1050	1400	2100	3150	5225	8700	15625
	Seat Test	295	765	1020	1530	2295	3820	6365	11460
1.4, 1.8, 1.12 A350 LF1	Working Pressure	235	620	825	1235	1850	3085	5145	9260
	Shell Test	375	950	1250	1875	2775	4650	7725	13900
	Seat Test	260	685	910	1360	2035	3395	5660	10190
1.6	Working Pressure	225	590	785	1175	1768	2946	4911	8839
	Shell Test	350	900	1200	1775	2650	4425	7350	13225
	Seat Test	250	650	865	1295	1940	3230	5385	9695
2.1, 2.2, 2.4, 2.5 A182 F304/F304H A351 CF8/CF8M/CF8C A182 F316/316H	Working Pressure	275	720	960	1440	2160	3600	6000	10800
	Shell Test	425	1100	1450	2175	3250	5400	9000	16200
	Seat Test	305	795	1060	1585	2380	3960	6600	11880
2.3 A182 F304L/F317L A182 F316L A351 CF3M/CF3	Working Pressure	230	600	800	1200	1800	3000	5000	9000
	Shell Test	350	900	1200	1800	2700	4500	7500	13500
	Seat Test	255	660	880	1320	1980	3300	5500	9900
2.6, 2.7 A182 F310H	Working Pressure	275	720	895	1440	2160	3600	6000	10080
	Shell Test	425	1100	1350	2175	3250	5400	9000	16200
	Seat Test	305	795	985	1585	2380	3965	6600	11880

NOTE: ①For working pressure ratings at other temperatures and material group refer to ASME/ANSI B16.34 - 2009 or B16.5. ② Shell hydrostatic test pressure is 1.5 times the 100 deg F rating rounded off to the next higher 25psi. ③ High pressure seat hydrostatic test pressure is 1.1 times the 100 deg F rating rounded off to the next higher 5 psi. ④ All ratings are for "Standard Class" valves.

FORGED/CAST/PLATE EQUIVALENTS

GROUP MATERIALS		PRODUCT FORMS		
MATERIAL GROUP NO.	NOMINAL DESIGNATION STEEL	FORGINGS SPEC-GR	CASTING SPEC-GR	PLATES SPEC-GR
1.1	Carbon - Si	A105	A216 WCB	A515 70
	C-Mn Si	A350 LF2		A537 C1.1 A516 70
2.1	18 Cr - 8 Ni 18 Cr - 8 Ni	A182 F304 A182 F304H	A351 CF8 A351 CF10	A240 304 A240 304H
2.2	16 Cr - 12 Ni - 2 Mo	A182 F316 A182 F316H	A351 CF8M A351 CF10M	A240 316 A240 316H
	18 Cr - 13 Ni - 3 Mo	A182 F317 A182 F317H	A351 CF8A	A240 317 A240 317H
	19 Cr - 10 Ni - 3 Mo		A351 CG8M A351 CG3M	
2.3	18 Cr - 8 Ni	A182 F304L		A240 304L
	16 Cr - 12 Ni - 2 Mo	A182 F316L	A351 CF3M	A240 316L

STANDARD IMPACT TEST TEMPERATURE*

Grade	Test Temperature ºF (ºC)
LF1	-20 (-29)
LF2 Class 1	-50 (-46)
LF2 Class 2	-0 (-18)
LF3 Classes 1 and 2	-150 (-101)
LF5 Classes 1 and 2	-75 (-59)
LF6 Classes 1 and 2	-60 (-51)
LF6 Class 3	0 (-18)
LF9	-100 (-73)
LF787 Class 2	-75 (-59)
LF787 Class 3	-100 (-73)

* 10mm x 10mm specimens

MAX. WORKING PRESSURE AND PRESSURE TEST OF VALVES FROM API6D - API6A

PRESSURE CLASS OF VALVE			ANSI 150 PN 20	ANSI 300 PN 50	ANSI 400 PN 68	ANSI 600 PN 100	ANSI 800 (*)	ANSI 900 PN 150	ANSI 1500 PN 250	ANSI 2500 PN 420	ANSI 2000	ANSI 3000	ANSI 5000	ANSI 10000
MAXIMUM OPERATING PRESSURE	-29 to 38ºC -20 to 100ºF	Bar	19	49.6	66.2	99.3	138	149	248	414	138	207	345	690
		Psig	275	720	960	1440	2000	2160	3600	6000	2000	3000	5000	10000
		Kpa	1900	4960	6620	9930	13800	14900	24800	41400	13800	20700	34500	69000
PRESSURE TEST ①	HYDROSTATIC SHELL TEST	Bar	29	76	100	150	207	224	372	621	276	414	690	1035
		Psig	425	1100	1450	2175	3000	3250	5400	9000	4000	6000	10000	15000
		Kpa	2900	7600	10000	15000	20700	22400	37200	62100	27600	41400	69000	103500
	HYDROSTATIC SEATS TEST	Bar	21	55	73	110	152	166	276	455	152	228	630	760
		Psig	300	800	1060	1600	2204	2400	4000	6600	2204	3306	9135	11020
	AIR SEAT	Bar ± 1	6	6	6	6	6	6	6	6	6	6	6	6
		Psig ± 10	80	80	80	80	80	80	80	80	80	80	80	80

For temperatures below -29ºC (-20ºF) the rating is equal or less but not greater than the rating shown

DURATION TEST VALVE SIZE	MINUTES
2" thru 4"	2
6" thru 10"	5
2" thru 4"	2
6" thru 10"	5
2" thru 4"	2
6" thru 10"	5

(*) Class 800 is not a normally tabulated ASME/ANSI B16.34 designation, but it is an intermediate class that is widely used for SW - BW - and threaded end valves.
1 bar = 100 kPa 1 Psig = 0,06894757 bar 1 bar = 14.5 Psig. The test pressure listed above are not valve operating pressure. ① No visible leakage under all test pressures sequence.

For forged versus cast equivalents as well as other ANSI, ASME, API valve material specification charts, cross reference charts and tables and standards go to our website.

For valve codes, pressure, temperature, equivalents, applications, suitability, trim and body materials, valve manufacturing and test standards also go to the technical section of our website.

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