

### METRIC UNITS

The following pressure-temperature charts are derived from ASME B16.34 - 2004 version. It will cover the most commonly used body and bonnet materials in the industry. All Pacific valves are designed to operate through pressure and temperature ranges shown in these P-T charts for a particular ASME Class Rating and ASTM Material. Hydrostatic Shell Testing at a minimum 1.5 times and Hydrostatic Seat Testing at a minimum of 1.1 times the Maximum Cold Working Pressure of an ASME Class Rating.

#### ASTM A216 GR. WCB

°C	STANDARD CLASS B16.34 - 2004							SPECIAL CLASS B16.34 - 2004						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	4500	150	300	600	900	1500	2500	4500
-29 to 38	19.6	51.1	102.1	153.2	255.3	425.5	765.9	19.8	51.7	103.4	155.1	258.6	430.9	775.7
50	19.2	50.1	100.2	150.4	250.6	417.7	751.9	19.8	51.7	103.4	155.1	258.6	430.9	775.7
100	17.7	46.6	93.2	139.8	233.0	388.3	699.0	19.8	51.6	103.3	154.9	258.2	430.3	774.5
150	15.8	45.1	90.2	135.2	225.4	375.6	676.1	19.6	51.0	102.1	153.1	255.2	425.3	765.5
200	13.8	43.8	87.6	131.4	219.0	365.0	657.0	19.4	50.6	101.1	151.7	252.9	421.4	758.6
250	12.1	41.9	83.9	125.8	209.7	349.5	629.1	19.4	50.5	101.1	151.6	252.6	421.1	757.9
300	10.2	39.8	79.6	119.5	199.1	331.8	597.3	19.4	50.5	101.1	151.6	252.6	421.1	757.9
325	9.3	38.7	77.4	116.1	193.6	322.6	580.7	19.2	50.1	100.2	150.3	250.6	417.6	751.7
350	8.4	37.6	75.1	112.7	187.8	313.0	563.5	18.7	48.9	97.8	146.7	244.6	407.6	733.7
375	7.4	36.4	72.7	109.1	181.8	303.1	545.5	18.1	47.1	94.2	141.3	235.5	392.5	706.5
400	6.5	34.7	69.4	104.2	173.6	289.3	520.8	16.6	43.4	86.8	130.2	217.0	361.7	651.0
425	5.5	28.8	57.5	86.3	143.8	239.7	431.5	13.8	36.0	71.9	107.9	179.8	299.6	539.3
450	4.6	23.0	46.0	69.0	115.0	191.7	345.1	11.0	28.8	57.5	86.3	143.8	239.6	431.4
475	3.7	17.4	34.9	52.3	87.2	145.3	261.5	8.4	21.8	43.6	65.4	109.0	181.6	326.9
500	2.8	11.8	23.5	35.3	58.8	97.9	176.3	5.6	14.7	29.4	44.1	73.5	122.4	220.4
538	1.4	5.9	11.8	17.7	29.5	49.2	88.6	2.8	7.4	14.8	22.2	36.9	61.6	110.8

Note: Upon prolonged exposure to temperatures above 425°C, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged usage above 425°C.

#### ASTM A216 GR. WCC

°C	STANDARD CLASS B16.34 - 2004							SPECIAL CLASS B16.34 - 2004						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	150	300	600	900	1500	2500		
-29 to 38	19.8	51.7	103.4	155.0	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7
50	19.5	51.7	103.4	155.1	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7
100	17.7	51.5	103.0	154.6	257.6	429.4	773.0	20.0	51.7	103.4	155.1	258.6	430.9	775.7
150	15.8	50.2	100.3	150.5	250.8	418.1	752.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7
200	13.8	48.6	97.2	145.8	243.2	405.4	729.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7
250	12.1	46.3	92.7	139.0	231.8	386.2	694.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7
300	10.2	42.9	85.7	128.6	214.4	357.1	642.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7
325	9.3	41.4	82.6	124.0	206.6	344.3	619.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7
350	8.4	40.0	80.0	120.1	200.1	333.5	600.3	19.8	51.1	102.2	153.3	255.5	425.8	766.4
375	7.4	37.8	75.7	113.5	189.2	315.3	567.5	19.3	48.4	96.7	145.1	241.9	403.1	725.6
400	6.5	34.7	69.4	104.2	173.6	289.3	520.8	19.3	43.4	86.8	130.2	217.0	361.7	651.0
425	5.5	28.8	57.5	86.3	143.8	239.7	431.5	18.0	36.0	71.9	107.9	179.8	299.6	539.3
450	4.6	23.0	46.0	69.0	115.0	191.7	345.1	14.4	28.8	57.5	86.3	143.8	239.6	431.4
475	3.7	17.1	34.2	51.3	85.4	142.4	256.3	10.7	21.4	42.7	64.1	106.8	178.0	320.4
500	2.8	11.6	23.2	34.7	57.9	96.5	173.7	7.2	14.5	29.0	43.4	72.4	120.7	217.2
538	1.4	5.9	11.8	17.7	29.5	49.2	88.6	3.7	7.4	14.8	22.2	36.9	61.6	110.8

Note: Upon prolonged exposure to temperatures above 455°C, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged usage above 425°C.

#### ASTM A352, GR. LCB

°C	STANDARD CLASS B16.34 - 2004							SPECIAL CLASS B16.34 - 2004						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	4500	150	300	600	900	1500	2500	4500
-29 to 38	18.4	48.0	96.0	144.1	240.1	400.1	720.3	20.0	48.0	96.0	144.1	240.1	400.1	720.3
50	18.2	47.5	94.9	142.4	237.3	395.6	712.0	20.0	48.0	96.0	144.1	240.1	400.1	720.3
100	17.4	45.3	90.7	136.0	226.7	377.8	680.1	20.0	48.0	96.0	144.1	240.1	400.1	720.3
150	15.8	43.9	87.9	131.8	219.7	366.1	659.1	20.0	48.0	96.0	144.1	240.1	400.1	720.3
200	13.8	42.5	85.1	127.6	212.7	354.4	638.0	20.0	48.0	96.0	144.1	240.1	400.1	720.3
250	12.1	40.8	81.6	122.3	203.9	339.8	611.7	20.0	48.0	96.0	144.1	240.1	400.1	720.3
300	10.2	38.7	77.4	116.1	193.4	322.4	580.3	20.0	48.0	96.0	144.1	240.1	400.1	720.3
325	9.3	37.6	75.2	112.7	187.9	313.1	563.7	20.0	48.0	95.9	143.9	239.8	399.6	719.3
350	8.4	36.4	72.8	109.2	182.0	303.3	545.9	19.8	47.3	94.6	141.9	236.5	394.1	709.4
375	7.4	35.0	69.9	104.9	174.9	291.4	524.6	19.3	44.9	89.9	134.8	224.7	374.6	674.2
400	6.5	32.6	65.2	97.9	163.1	271.9	489.3	19.3	40.8	81.6	122.3	203.9	339.8	611.7
425	5.5	27.3	54.6	81.9	136.5	227.5	409.5	17.1	34.1	68.3	102.4	170.6	284.4	511.9
450	4.6	21.6	43.2	64.8	107.9	179.9	323.8	13.5	27.0	54.0	81.0	134.9	224.9	404.8
475	3.7	15.7	31.3	47.0	78.3	130.6	235.0	9.8	19.6	39.2	58.8	97.9	163.2	293.8
500	2.8	11.1	22.1	33.2	55.4	92.3	166.1	6.9	13.8	27.7	41.5	69.2	115.3	207.6
538	1.4	5.9	11.8	17.7	29.5	49.2	88.6	3.7	7.4	14.8	22.2	36.9	61.6	110.8

### ASTM A217 GR. WC6

°C	STANDARD CLASS B16.34 - 2004							SPECIAL CLASS B16.34 - 2004						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	4500	150	300	600	900	1500	2500	4500
-29 to 38	19.8	51.7	103.4	155.1	258.6	430.9	775.7	19.8	51.7	103.4	155.1	258.6	430.9	775.7
50	19.5	51.7	103.4	155.1	258.6	430.9	775.7	19.8	51.7	103.4	155.1	258.6	430.9	775.7
100	17.7	51.5	103.0	154.4	257.4	429.0	772.2	19.8	51.7	103.4	155.1	258.6	430.9	775.7
150	15.8	49.7	99.5	149.2	248.7	414.5	746.2	19.8	51.7	103.4	155.1	258.6	430.9	775.7
200	13.8	48.0	95.9	143.9	239.8	399.6	719.4	19.8	51.7	103.4	155.1	258.6	430.9	775.7
250	12.1	46.3	92.7	139.0	231.8	386.2	694.8	19.8	51.7	103.4	155.1	258.6	430.9	775.7
300	10.2	42.9	85.7	128.6	214.4	357.1	642.6	19.8	51.7	103.4	155.1	258.6	430.9	775.7
325	9.3	41.4	82.6	124.0	206.6	344.3	619.6	19.8	51.7	103.4	155.1	258.6	430.9	775.7
350	8.4	40.3	80.4	120.7	201.1	335.3	603.3	19.8	51.5	102.8	154.3	257.1	428.6	771.4
375	7.4	38.9	77.6	116.5	194.1	323.2	581.8	19.3	50.6	101.0	151.5	252.5	420.9	757.4
400	6.5	36.5	73.3	109.8	183.1	304.9	548.5	19.3	50.3	100.6	150.6	251.2	418.3	753.2
425	5.5	35.2	70.0	105.1	175.1	291.6	524.7	19.0	49.6	99.3	148.9	248.2	413.7	744.6
450	4.6	33.7	67.7	101.4	169.0	281.8	507.0	18.1	47.3	94.4	141.4	235.8	393.1	707.6
475	3.7	31.7	63.4	95.1	158.2	263.9	474.8	16.4	42.8	85.5	128.2	213.7	356.3	641.3
500	2.8	25.7	51.5	77.2	128.6	214.4	385.9	12.3	32.2	64.3	96.5	160.8	268.0	482.4
538	1.4	14.9	29.8	44.7	74.5	124.1	223.4	7.1	18.6	37.2	55.8	93.1	155.1	279.2
550	1.4(a)	12.7	25.4	38.1	63.5	105.9	190.6	6.1	15.9	31.8	47.7	79.4	132.4	238.3
575	1.4(a)	8.8	17.6	26.4	44.0	73.4	132.0	4.2	11.0	22.0	33.0	55.0	91.7	165.1
600	1.4(a)	6.1	12.2	18.3	30.5	50.9	91.6	2.9	7.6	15.3	22.9	38.2	63.6	114.5
625	1.4(a)	4.3	8.5	12.8	21.3	35.5	63.9	2.0	5.3	10.6	16.0	26.6	44.4	79.9
650	1.1(a)	2.8	5.7	8.5	14.2	23.6	42.6	1.4	3.5	7.1	10.6	17.7	29.5	53.2

Note: Use normalized and tempered material only. Not to be used over 595°C. (a) Flanged end valve ratings terminate at 538°C.

### ASTM A217 GR. WC9

°C	STANDARD CLASS B16.34 - 2004							SPECIAL CLASS B16.34 - 2004						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	4500	150	300	600	900	1500	2500	4500
-29 to 38	19.8	51.7	103.4	155.1	258.6	430.9	775.7	19.8	51.7	103.4	155.1	258.6	430.9	775.7
50	19.5	51.7	103.4	155.1	258.6	430.9	775.7	19.8	51.7	103.4	155.1	258.6	430.9	775.7
100	17.7	51.5	103.0	154.6	257.6	429.4	773.0	19.8	51.7	103.4	154.9	258.1	430.2	774.3
150	15.8	50.3	100.3	150.6	250.8	418.2	752.8	19.5	51.0	101.9	152.9	254.8	424.6	764.3
200	13.8	48.6	97.2	145.8	243.4	405.4	729.8	19.3	50.2	100.4	150.7	251.1	418.5	753.4
250	12.1	46.3	92.7	139.0	231.8	386.2	694.8	19.2	50.0	100.0	149.9	249.9	416.5	749.7
300	10.2	42.9	85.7	128.6	214.4	357.1	642.6	19.1	49.8	99.6	149.3	248.9	414.8	746.7
325	9.3	41.4	82.6	124.0	206.6	344.3	619.6	19.0	49.6	99.2	148.8	248.0	413.3	743.9
350	8.4	40.3	80.4	120.7	201.1	335.3	603.3	18.9	49.2	98.4	147.6	246.0	410.0	738.1
375	7.4	38.9	77.6	116.5	194.1	323.2	581.8	18.7	48.8	97.5	146.3	243.8	406.3	731.3
400	6.5	36.5	73.3	109.8	183.1	304.9	548.5	18.7	48.8	97.5	146.3	243.8	406.3	731.3
425	5.5	35.2	70.0	105.1	175.1	291.6	524.7	18.7	48.8	97.5	146.3	243.8	406.3	731.3
450	4.6	33.7	67.7	101.4	169.0	281.8	507.0	18.1	47.3	94.4	141.4	235.8	393.1	707.6
475	3.7	31.7	63.4	95.1	158.2	263.9	474.8	16.4	42.8	85.5	128.2	213.7	356.3	641.3
500	2.8	28.2	56.5	84.7	140.9	235.0	423.0	13.7	35.6	71.5	107.1	178.6	297.5	535.4
538	1.4	18.4	36.9	55.3	92.2	153.7	276.6	8.8	23.0	46.1	69.1	115.2	192.1	345.7
550	1.4(a)	15.6	31.3	46.9	78.2	130.3	234.5	7.5	19.5	39.1	58.6	97.7	162.8	293.1
575	1.4(a)	10.5	21.1	31.6	52.6	87.7	157.9	5.0	13.2	26.3	39.5	65.8	109.7	197.4
600	1.4(a)	6.9	13.8	20.7	34.4	57.4	103.3	3.3	8.6	17.2	25.8	43.0	71.7	129.1
625	1.4(a)	4.5	8.9	13.4	22.3	37.2	66.9	2.1	5.6	11.2	16.7	27.9	46.5	83.7
650	1.1(a)	2.8	5.7	8.5	14.2	23.6	42.6	1.4	3.5	7.1	10.6	17.7	29.5	53.2

Note: Use normalized and tempered material only. Not to be used over 595°C. (a) Flanged end valve ratings terminate at 538°C.

### ASTM A217 GR. C5

°C	STANDARD CLASS B16.34 - 2004								SPECIAL CLASS B16.34 - 2004							
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar								MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							
	150	300	600	900	1500	2500	4500		150	300	600	900	1500	2500	4500	
-29 to 38	20.0	51.7	103.4	155.1	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
50	19.5	51.7	103.4	155.1	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
100	17.7	51.5	103.0	154.6	257.6	429.4	773.0	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
150	15.8	50.3	100.3	150.6	250.8	418.2	752.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
200	13.8	48.6	97.2	145.8	243.4	405.4	729.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
250	12.1	46.3	92.7	139.0	231.8	386.2	694.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
300	10.2	42.9	85.7	128.6	214.4	357.1	642.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
325	9.3	41.4	82.6	124.0	206.6	344.3	619.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
350	8.4	40.3	80.4	120.7	201.1	335.3	603.3	19.8	51.5	102.8	154.3	257.1	428.6	771.4		
375	7.4	38.9	77.6	116.5	194.1	323.2	581.8	19.3	50.6	101.0	151.5	252.5	420.9	757.4		
400	6.5	36.5	73.3	109.8	183.1	304.9	548.5	19.3	50.3	100.6	150.6	251.2	418.3	753.2		
425	5.5	35.2	70.0	105.1	175.1	291.6	524.7	19.0	49.6	99.3	148.9	248.2	413.7	744.6		
450	4.6	33.7	67.7	101.4	169.0	281.8	507.0	18.1	45.2	90.3	135.5	225.9	376.5	677.6		
475	3.7	27.9	55.7	83.6	139.3	232.1	417.8	16.4	34.8	69.6	104.5	174.1	290.2	522.3		
500	2.8	21.4	42.8	64.1	106.9	178.2	320.7	13.4	26.7	53.4	80.2	133.6	222.7	400.9		
538	1.4	13.7	27.4	41.1	68.6	114.3	205.7	8.6	17.1	34.3	51.4	85.7	142.8	257.1		
550	1.4(a)	12.0	24.1	36.1	60.2	100.4	180.7	7.5	15.1	30.1	45.2	75.3	125.5	225.9		
575	1.4(a)	8.9	17.8	26.7	44.4	74.0	133.3	5.6	11.1	22.2	33.3	55.5	92.5	166.6		
600	1.4(a)	6.2	12.5	18.7	31.2	51.9	93.5	3.9	7.8	15.6	23.4	38.9	64.9	116.8		
625	1.4(a)	4.0	8.0	12.0	20.0	33.3	59.9	2.5	5.0	10.0	15.0	24.9	41.6	74.8		
650	0.9(a)	2.4	4.7	7.1	11.8	19.7	35.5	1.5	3.0	5.9	8.9	14.8	24.6	44.3		

Note: Use normalized and tempered material only. (a) Flanged end valve ratings terminate at 538°C.

### ASTM A217 GR. C12

°C	STANDARD CLASS B16.34 - 2004								SPECIAL CLASS B16.34 - 2004							
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar								MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							
	150	300	600	900	1500	2500	4500		150	300	600	900	1500	2500	4500	
-29 to 38	20.0	51.7	103.4	155.1	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
50	19.5	51.7	103.4	155.1	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
100	17.7	51.5	103.0	154.6	257.6	429.4	773.0	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
150	15.8	50.3	100.3	150.6	250.8	418.2	752.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
200	13.8	48.6	97.2	145.8	243.4	405.4	729.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
250	12.1	46.3	92.7	139.0	231.8	386.2	694.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
300	10.2	42.9	85.7	128.6	214.4	357.1	642.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
325	9.3	41.4	82.6	124.0	206.6	344.3	619.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7		
350	8.4	40.3	80.4	120.7	201.1	335.3	603.3	19.8	51.5	102.8	154.3	257.1	428.6	771.4		
375	7.4	38.9	77.6	116.5	194.1	323.2	581.8	19.3	50.6	101.0	151.5	252.5	420.9	757.4		
400	6.5	36.5	73.3	109.8	183.1	304.9	548.5	19.3	50.3	100.6	150.6	251.2	418.3	753.2		
425	5.5	35.2	70.0	105.1	175.1	291.6	524.7	19.0	49.6	99.3	148.9	248.2	413.7	744.6		
450	4.6	33.7	67.7	101.4	169.0	281.8	507.0	18.1	47.3	94.4	141.4	235.8	393.1	707.6		
475	3.7	31.7	63.4	95.1	158.2	263.9	474.8	16.4	42.8	85.5	128.2	213.7	356.3	641.3		
500	2.8	28.2	56.5	84.7	140.9	235.0	423.0	13.7	35.6	71.5	107.1	178.6	297.5	535.4		
538	1.4	17.5	35.0	52.5	87.5	145.8	262.4	8.4	21.9	43.7	65.6	109.3	182.2	328.0		
550	1.4(a)	15.0	30.0	45.0	75.0	125.0	225.0	7.2	18.7	37.5	56.2	93.7	156.2	281.2		
575	1.4 (a)	10.5	20.9	31.4	52.3	87.1	156.8	5.0	13.1	26.1	39.2	65.3	108.9	196.0		
600	1.4 (a)	7.2	14.4	21.5	35.9	59.8	107.7	3.4	9.0	17.9	26.9	44.9	74.8	134.6		
625	1.4 (a)	5.0	9.9	14.9	24.8	41.4	74.5	2.4	6.2	12.4	18.6	31.1	51.8	93.2		
650	1.4 (a)	3.5	7.1	10.6	17.7	29.5	53.2	1.7	4.4	8.9	13.3	22.2	36.9	66.5		

Note: Use normalized and tempered material only. (a) Flanged end valve ratings terminate at 538°C.

### ASTM A351 GR. CF8M

°C	STANDARD CLASS B16.34 - 2004							SPECIAL CLASS B16.34 - 2004						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	4500	150	300	600	900	1500	2500	4500
-29 to 38	19.0	49.6	99.3	148.9	248.2	413.7	744.6	19.8	51.7	103.4	155.1	258.6	430.9	775.7
50	18.4	48.1	92.6	144.3	240.6	400.9	721.7	19.5	50.8	101.6	152.5	254.1	423.5	762.3
100	16.2	42.2	84.4	126.6	211.0	351.6	632.9	18.1	47.1	94.2	141.3	235.5	392.4	706.4
150	14.8	38.5	77.0	115.5	192.5	320.8	577.4	16.5	43.0	85.9	128.9	214.8	358.0	644.4
200	13.7	35.7	71.3	107.0	178.3	297.2	534.9	15.3	39.8	79.6	119.4	199.0	331.7	597.0
250	12.1	31.4	66.8	100.1	166.9	278.1	500.6	14.3	37.3	74.5	111.8	186.3	310.4	558.8
300	10.2	31.6	63.2	94.9	158.1	263.5	474.3	13.5	35.3	70.6	105.9	176.4	294.1	529.3
325	9.3	30.9	61.8	92.7	154.4	257.4	463.3	13.2	34.5	68.9	103.4	172.3	287.2	517.0
350	8.4	30.3	60.7	91.0	151.6	252.7	454.9	13.0	33.8	67.7	101.5	169.2	282.1	507.7
375	7.4	29.9	59.8	89.6	149.4	249.0	448.2	12.8	33.3	66.7	100.0	166.7	277.9	500.2
400	6.5	29.4	58.9	88.3	147.2	245.3	441.6	12.6	32.9	65.7	98.6	164.3	273.8	492.9
425	5.5	29.1	58.3	87.4	145.7	242.9	437.1	12.5	32.5	65.1	97.6	162.6	271.1	487.9
450	4.6	28.8	57.7	86.5	144.2	240.4	432.7	12.3	32.2	64.4	96.6	161.0	268.3	482.9
475	3.7	28.7	57.3	86.0	143.4	238.9	430.1	12.3	32.0	64.0	96.0	160.0	266.6	480.0
500	2.8	28.2	56.5	84.7	140.9	235.0	423.0	12.2	31.7	63.4	95.1	158.6	264.3	475.7
538	1.4	25.2	50.0	75.2	125.5	208.9	375.8	11.0	29.0	57.9	86.9	145.1	241.7	435.1
550	1.4(a)	25.0	49.8	74.8	124.9	208.0	374.2	11.0	29.0	57.9	86.9	145.1	241.7	435.1
575	1.4(a)	24.0	47.9	71.8	119.7	199.5	359.1	10.9	28.6	57.1	85.7	143.0	238.3	428.8
600	1.4(a)	19.9	39.8	59.7	99.5	165.9	298.6	9.5	24.9	49.8	74.6	124.4	207.3	373.2
625	1.4(a)	15.8	31.6	47.4	79.1	131.8	237.2	7.6	19.8	39.5	59.3	98.8	164.7	296.5
650	1.4(a)	12.7	25.3	38.0	63.3	105.5	189.9	6.1	15.8	31.7	47.5	79.1	131.9	237.4
675	1.4(a)	10.3	20.6	31.0	51.6	86.0	154.8	4.9	12.9	25.8	38.7	64.5	107.5	193.5
700	1.4(a)	8.4	16.8	25.1	41.9	69.8	125.7	4.4	11.4	22.8	34.3	57.1	95.2	171.3
725	1.4(a)	7.0	14.0	21.0	34.9	58.2	104.8	3.7	9.5	19.1	28.6	47.7	79.5	143.0
750	1.4(a)	5.9	11.7	17.6	29.3	48.9	87.9	2.8	7.4	14.8	22.1	36.7	61.2	110.3
775	1.4(a)	4.6	9.0	13.7	22.8	38.0	68.4	2.2	5.8	11.4	17.2	28.5	47.6	85.6
800	1.2(a)	3.5	7.0	10.5	17.4	29.2	52.6	1.8	4.4	8.8	13.2	22.0	36.6	65.6
816	1.0(a)	2.8	5.9	8.6	14.1	23.8	42.7	1.4	3.4	7.2	10.7	17.9	29.6	53.1

Note: At temperatures over 538°C, use only when the carbon content is 0.04% or higher. (a) Flanged end valve ratings terminate at 538°C.

### ASTM A351 GR. CF8C

°C	STANDARD CLASS B16.34 - 2004							SPECIAL CLASS B16.34 - 2004						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	4500	150	300	600	900	1500	2500	4500
-29 to 38	19.0	49.6	99.3	148.9	248.2	413.7	744.6	19.8	51.7	103.4	155.1	258.6	430.9	775.7
50	18.7	48.8	97.5	146.3	243.8	406.4	731.5	19.6	51.2	102.4	153.6	256.0	426.7	768.1
100	17.4	45.3	90.6	135.9	226.5	377.4	679.4	18.8	48.9	97.9	146.8	244.7	407.8	734.1
150	15.8	42.5	84.9	127.4	212.4	353.9	637.1	17.4	45.4	90.8	136.1	226.9	378.2	680.7
200	13.8	39.9	79.9	119.8	199.7	332.8	599.1	16.5	43.1	86.1	129.2	215.3	358.8	645.8
250	12.1	37.8	75.6	113.4	189.1	315.1	567.2	16.0	41.6	83.3	124.9	208.2	347.0	624.5
300	10.2	36.1	72.2	108.3	180.4	300.7	541.3	15.4	40.2	80.3	120.5	200.9	334.8	602.6
325	9.3	35.4	70.7	106.1	176.8	294.6	530.3	15.1	39.5	78.9	118.4	197.3	328.8	591.8
350	8.4	34.8	69.5	104.3	173.8	289.6	521.3	14.9	38.8	77.6	116.4	194.0	323.3	581.9
375	7.4	34.2	68.4	102.6	171.0	285.1	513.1	14.6	38.2	76.4	114.5	190.9	318.1	572.7
400	6.5	33.9	67.8	101.7	169.5	282.6	508.6	14.5	37.8	75.7	113.5	189.2	315.4	567.7
425	5.5	33.6	67.2	100.8	168.1	280.1	504.2	14.4	37.5	75.0	112.5	187.6	312.6	562.7
450	4.6	33.5	66.9	100.4	167.3	278.8	501.8	14.3	37.3	74.7	112.0	186.7	311.1	560.0
475	3.7	31.7	63.4	95.1	158.2	263.9	474.8	14.3	37.3	74.6	111.9	186.5	310.9	559.6
500	2.8	28.2	56.5	84.7	140.9	235.0	423.0	13.7	35.6	71.5	107.1	178.6	297.5	535.4
538	1.4	25.2	50.0	75.2	125.5	208.9	375.8	11.0	29.0	57.9	86.9	145.1	241.7	435.1
550	1.4(a)	25.0	49.8	74.8	124.9	208.0	374.2	11.0	29.0	57.9	86.9	145.1	241.7	435.1
575	1.4(a)	24.0	47.9	71.8	119.7	199.5	359.1	10.9	28.6	57.1	85.7	143.0	238.3	428.8
600	1.4(a)	19.8	39.6	59.4	99.0	165.1	297.1	9.5	24.8	49.5	74.3	123.8	206.4	371.4
625	1.4(a)	13.9	27.7	41.6	69.3	115.5	207.9	6.6	17.3	34.6	52.0	86.6	144.3	259.8
650	1.4(a)	10.3	20.6	30.9	51.5	85.8	154.5	4.9	12.9	25.7	38.6	64.4	107.3	193.1
675	1.4(a)	8.0	15.9	23.9	39.8	66.3	119.4	3.8	9.9	19.9	29.8	49.7	82.9	149.2
700	1.4(a)	5.6	11.2	16.8	28.1	46.8	84.2	3.1	8.2	16.4	24.5	40.9	68.2	122.7
725	1.4(a)	4.0	8.0	11.9	19.9	33.1	59.6	2.3	5.9	11.8	17.7	29.5	49.2	88.5
750	1.2(a)	3.1	6.2	9.3	15.5	25.8	46.4	1.6	4.1	8.2	12.2	20.4	34.0	61.2
775	0.9(a)	2.5	4.9	7.4	12.3	20.4	36.8	1.2	3.1	6.2	9.3	15.5	25.8	46.4
800	0.8(a)	2.0	4.0	6.1	10.1	16.9	30.4	1.0	2.7	5.3	8.0	13.3	22.2	40.0
816	0.7(a)	1.9	3.8	5.7	9.5	15.8	28.4	0.9	2.4	4.7	7.1	11.8	19.7	35.5

Note: At temperatures over 538°C, use only when the carbon content is 0.04% or higher. (a) Flanged end valve ratings terminate at 538°C.

### METRIC UNITS

Pressure-Temperature Ratings for modified 9Cr-1Mo-V Cast Material equivalent to ASTM A182, GR. F91 are not currently listed in ASME B-16.34 - 2004 version. Allowable stress values for this material at elevated temperatures were published in ASME Code Case 2192, March 1995. Using the allowable stress values in Code Case 2192, and the methods outlined in ASME B16.34, Annex F, the calculated values for Pressure-Temperature Ratings ASTM A217, GR. C12A are tabulated below.

### ASTM A217 GR. C12A

°C	STANDARD CLASS							SPECIAL CLASS						
	MAXIMUM NON-SHOCK WORKING PRESSURE, Bar							MAXIMUM NON-SHOCK WORKING PRESSURE, Bar						
	150	300	600	900	1500	2500	4500	150	300	600	900	1500	2500	4500
-29 to 38	20.0	51.7	103.4	155.1	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7
50	19.5	51.7	103.4	155.1	258.6	430.9	775.7	20.0	51.7	103.4	155.1	258.6	430.9	775.7
100	17.7	51.5	103.0	154.6	257.6	429.4	773.0	20.0	51.7	103.4	155.1	258.6	430.9	775.7
150	15.8	50.3	100.3	150.6	250.8	418.2	752.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7
200	13.8	48.6	97.2	145.8	243.4	405.4	729.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7
250	12.1	46.3	92.7	139.0	231.8	386.2	694.8	20.0	51.7	103.4	155.1	258.6	430.9	775.7
300	10.2	42.9	85.7	128.6	214.4	357.1	642.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7
325	9.3	41.4	82.6	124.0	206.6	344.3	619.6	20.0	51.7	103.4	155.1	258.6	430.9	775.7
350	8.4	40.3	80.4	120.7	201.1	335.3	603.3	19.8	51.5	102.8	154.3	257.1	428.6	771.4
375	7.4	38.9	77.6	116.5	194.1	323.2	581.8	19.3	50.6	101.0	151.5	252.5	420.9	757.4
400	6.5	36.5	73.3	109.8	183.1	304.9	548.5	19.3	50.3	100.6	150.6	251.2	418.3	753.2
425	5.5	35.2	70.0	105.1	175.1	291.6	524.7	19.0	49.6	99.3	148.9	248.2	413.7	744.6
450	4.6	33.7	67.7	101.4	169.0	281.8	507.0	18.1	47.3	94.4	141.4	235.8	393.1	707.6
475	3.7	31.7	63.4	95.1	158.2	263.9	474.8	16.4	42.8	85.5	128.2	213.7	356.3	641.3
500	2.8	28.2	56.5	84.7	140.9	235.0	423.0	13.7	35.6	71.5	107.1	178.6	297.5	535.4
538	1.4	25.2	50.0	75.2	125.5	208.9	375.8	11.0	29.0	57.9	86.9	145.1	241.7	435.1
550	1.4(a)	25.												