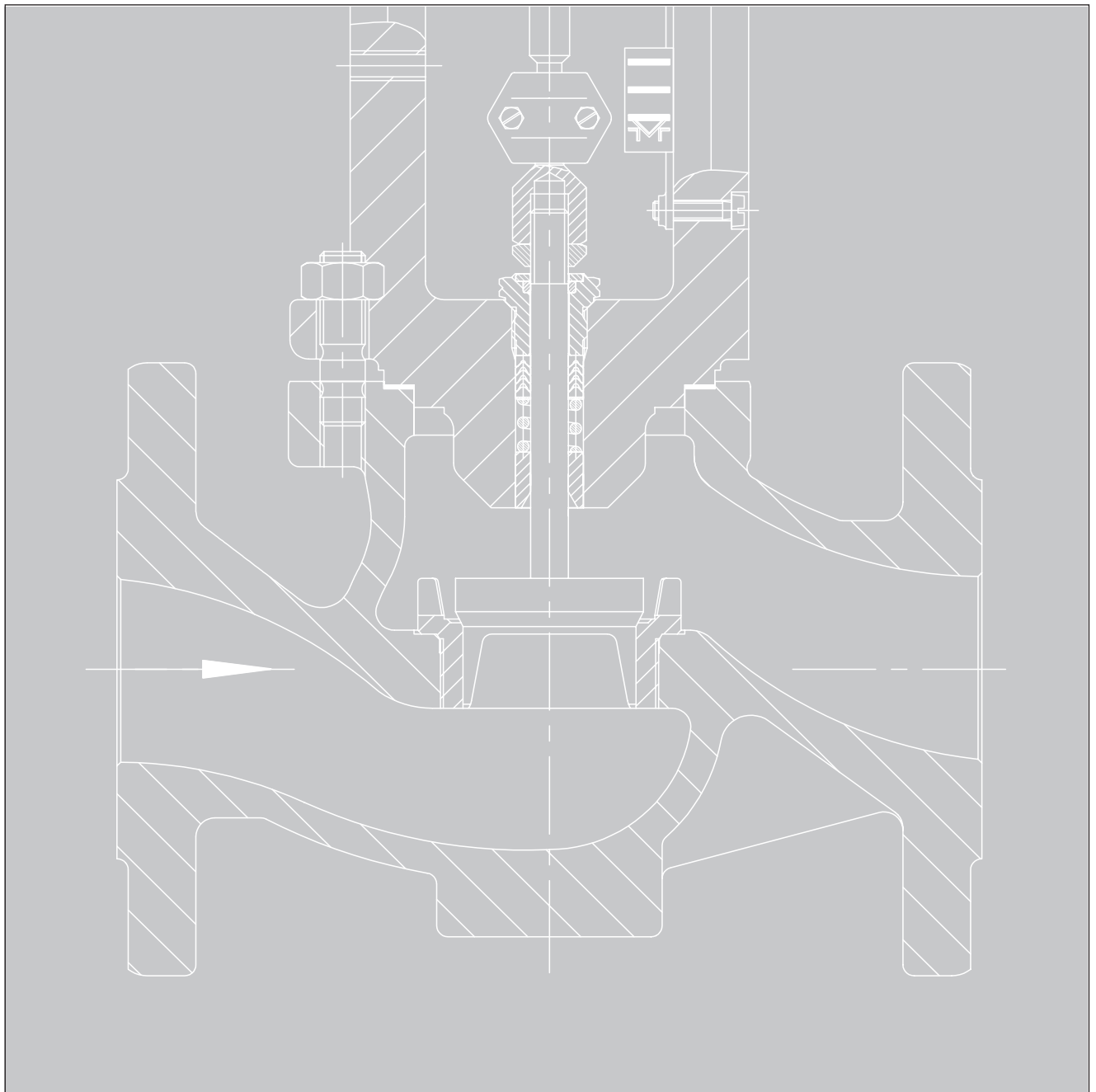




Information Sheet Part 2
Materials and pressure-temperature diagrams

DN 10 ... 600	•	PN 10 ... 400	•	-200 ... 700 °C
NPS 1/4 ... 24	•	Class 125 ... 2500	•	-328 ... 1292 °F
DN 15A ... 250A	•	JIS 10K/20K	•	-200 ... 500 °C



Contents

Summary of materials

Valve materials, temperature ranges, pressure ratings

Table 1 · Materials according to DIN 3

Table 2 · Materials according to ASTM 3

Pressure-temperature diagrams Materials acc. to DIN EN

Cast iron

EN-GJL-250 EN-JL1040 4

Spheroidal graphite iron

EN-GJS400-18U-LT EN-JS1049 4

Cast steel

GP240GH 1.0619 5

G9Ni14 1.5638 5

G20Mn5 1.6220 6

G17CrMo5-5 1.7357 6

G17CrMo9-10 1.7379 7

Cast stainless steel

GX5CrNiMo19-11-2 1.4408 7

GX5CrNiMoNb19-11-2 1.4581 8

GX5CrNi19-10 1.4308 8

Forged steel

P250GH 1.0460 9

Forged stainless steel

X2CrNiMo17-12-2 1.4404 9

X6CrNiMoTi17-12-2 1.4571 10

Pressure-temperature diagrams Materials acc. to ASTM

Cast iron

A 126 B 11

Cast steel

A 216 WCC 12

A 217 WC6 13

A 217 WC9 14

A 352 LCC 15

A 352 LC3 16

Cast stainless steel

A 351 CF8M 17

A 351 CF8 18

Forged stainless steel

A 316 L 19

Permissible operating pressures

Permissible operating pressure depending on temperature

Table 3 · Materials acc. to DIN · Pressures in bar 20

Table 4a · Materials acc. to ASTM · Pressures in bar 23

Table 4b · Materials acc. to ASTM · Pressures in psi 25

Materials according to DIN and ANSI/ASTM

The following tables list the body materials that are most frequently used at SAMSON along with their temperature ranges and available pressure ratings.

For the application limits of these materials, refer to the respective pressure-temperature diagrams on the following pages. Details on special materials are available on request.

In addition to the pressure-temperature diagrams listed in this Information Sheet, the restrictions specified in the data sheets apply as well.

Table 1 · Valve materials and nominal pressures for Series 240 (•) and Series 250, 280, 290 (X) – Versions according to DIN

Material	Code designation	Material no. acc. to EN	Temperature range [°C]	PN								
				10/16	25	40	63	100	160	250	320	400
Cast iron	EN-GJL-250	EN-JL1040 (GG 25)	-10 ... 300	•								
Spheroidal graphite iron	EN-GJS400-18U-LT	EN-JS1049 (GGG 40.3)	-10 ... 350	•	•							
Cast steel	GP240GH	1.0619	-10 ... 400	•	•	•X	X	X	X	X	X	X
	G9Ni14	1.5638	-90 ... 300	•	•	•X	X	X	X	X	X	X
	G20Mn5	1.6220	-50 ... 300	•	•	•X	X	X	X	X	X	X
	G17CrMo5-5	1.7357	-10 ... 500			X	X	X	X	X	X	X
	G17CrMo9-10	1.7379	-10 ... 600			X	X	X	X	X	X	X
Cast stainless steel	GX5CrNiMo19-11-2	1.4408	-200 ... 700	•	•	•X	X	X	X	X	X	X
	GX5CrNiMoNb19-11-2	1.4581	-10 ... 550	•	•	•X	X	X	X	X	X	X
	GX5CrNi19-10	1.4308	-200 ... 300	•	•	•X	X	X	X	X	X	X
Forged steel	P250GH	1.0460	-10 ... 400	•	•	•						
Forged stainless steel	X2CrNiMo17-12-2	1.4404	-200 ... 500	•	•	•	X	X	X	X	X	X
	X6CrNiMoTi17-12-2	1.4571	-200 ... 550	•	•	•						

Table 2 · Valve materials and pressure ratings for Series 240 (•) and Series 250, 280, 290 (X) – Versions according to ANSI

Material	Code designation	Temperature range [°C]	Class								
			125	150	250	300	600	900	1500	2500	
Cast iron	A 126 B	-29 ... 232	•		•						
Cast steel	A 216 WCC	-29 ... 425		•		•X	X	X	X	X	X
	A 217 WC6	-29 ... 500				X	X	X	X	X	X
	A 217 WC9	-29 ... 600		•		X	X	X	X	X	X
	A 352 LCC	-46 ... 345		•		•X	X	X	X	X	X
	A 352 LC3	-101 ... 345		•		•X	X	X	X	X	X
Cast stainless steel	A 351 CF8M	-254 ... 700		•		•X	X	X	X	X	X
	A 351 CF8	-254 ... 538		•		•X	X	X	X	X	X
Forged stainless steel	A 316 L	-254 ... 538		•		•	X	X	X	X	X

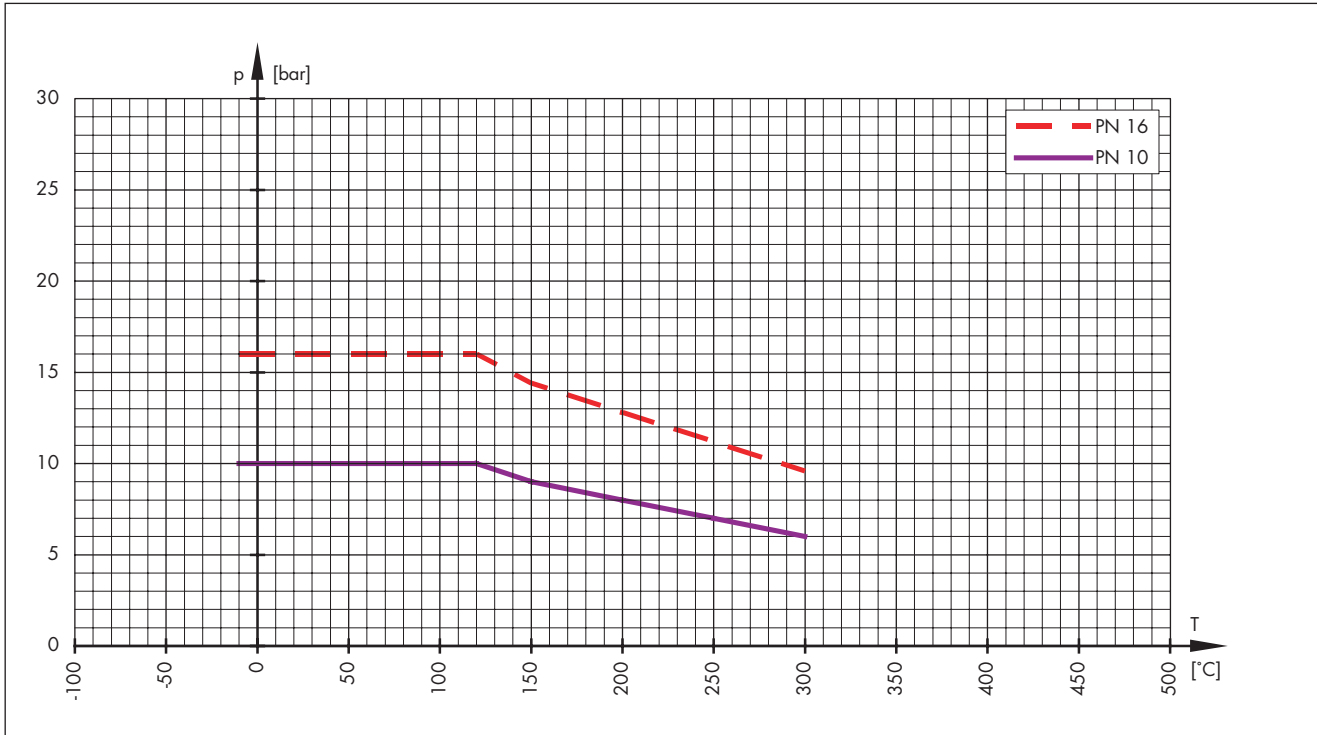
1. Pressure-temperature diagrams · Materials according to DIN EN

The pressure-temperature diagrams as well as the pressure and temperature values specified in the corresponding data sheets determine the maximum permissible application limits of the control valve. These limits may be restricted by factors such as the design of the seat and plug. For typetested versions, the limits may be restricted by the applicable safety regulations.

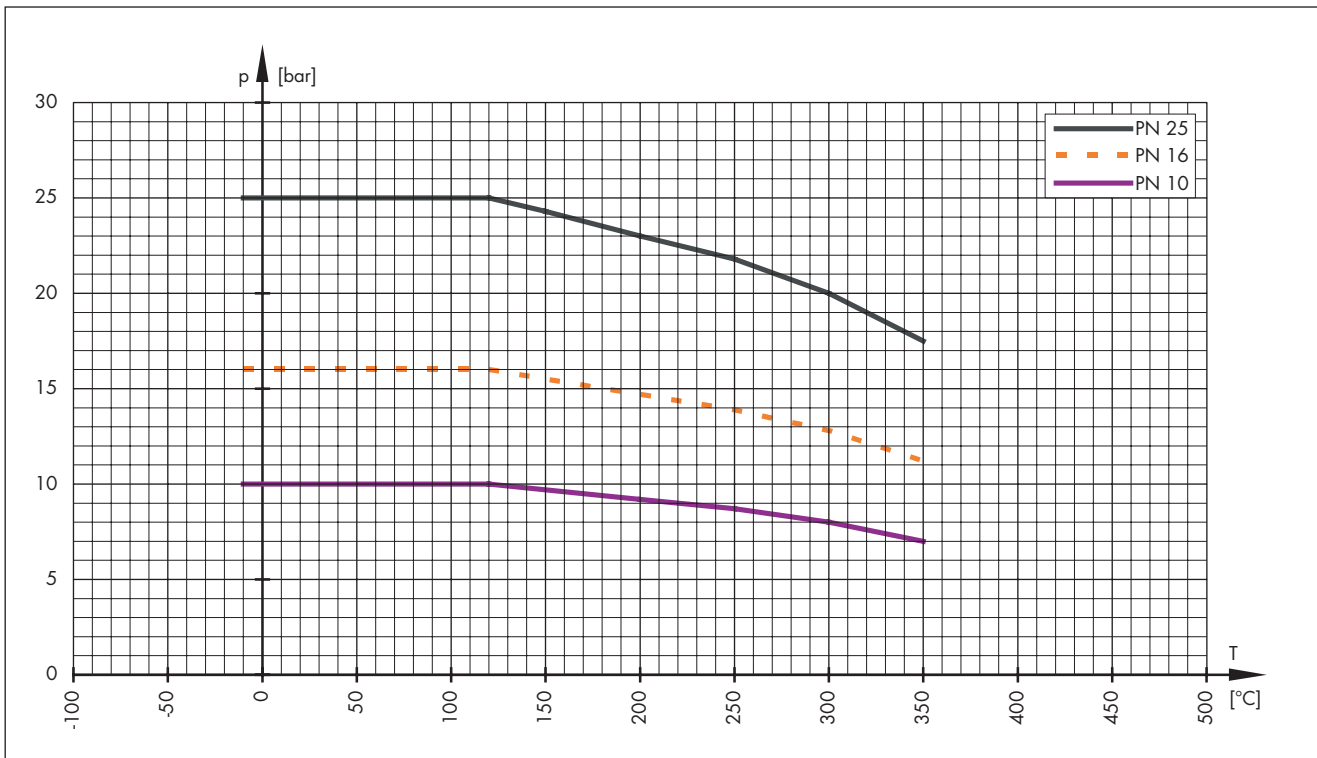
Further details can be found in the technical data tables in the corresponding data sheets.

Note that the possible formation of ice on the valve body or plug stem when the medium temperature falls below 0 °C has not been considered.

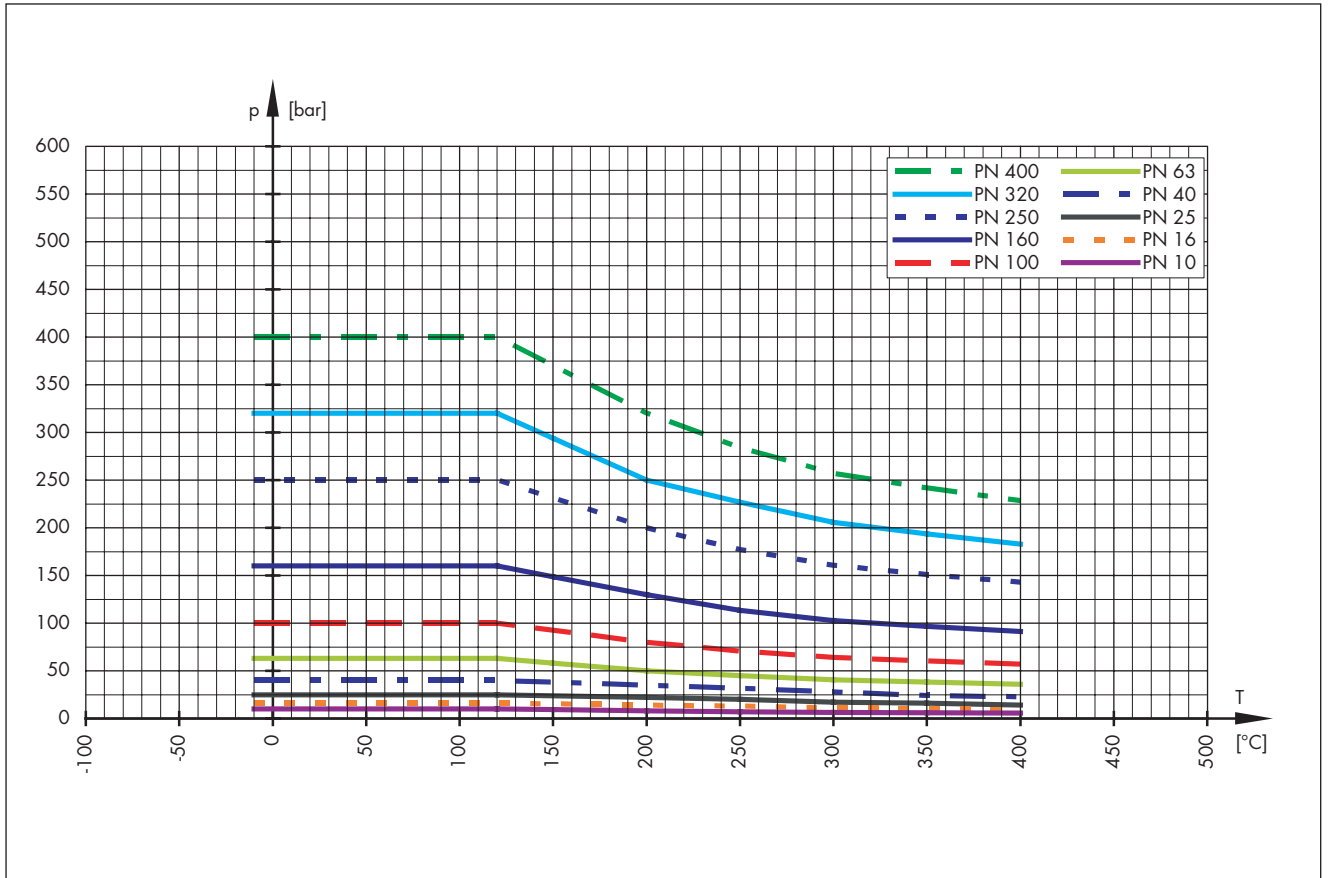
1.1 Cast iron EN-GJL-250 · EN-JL1040



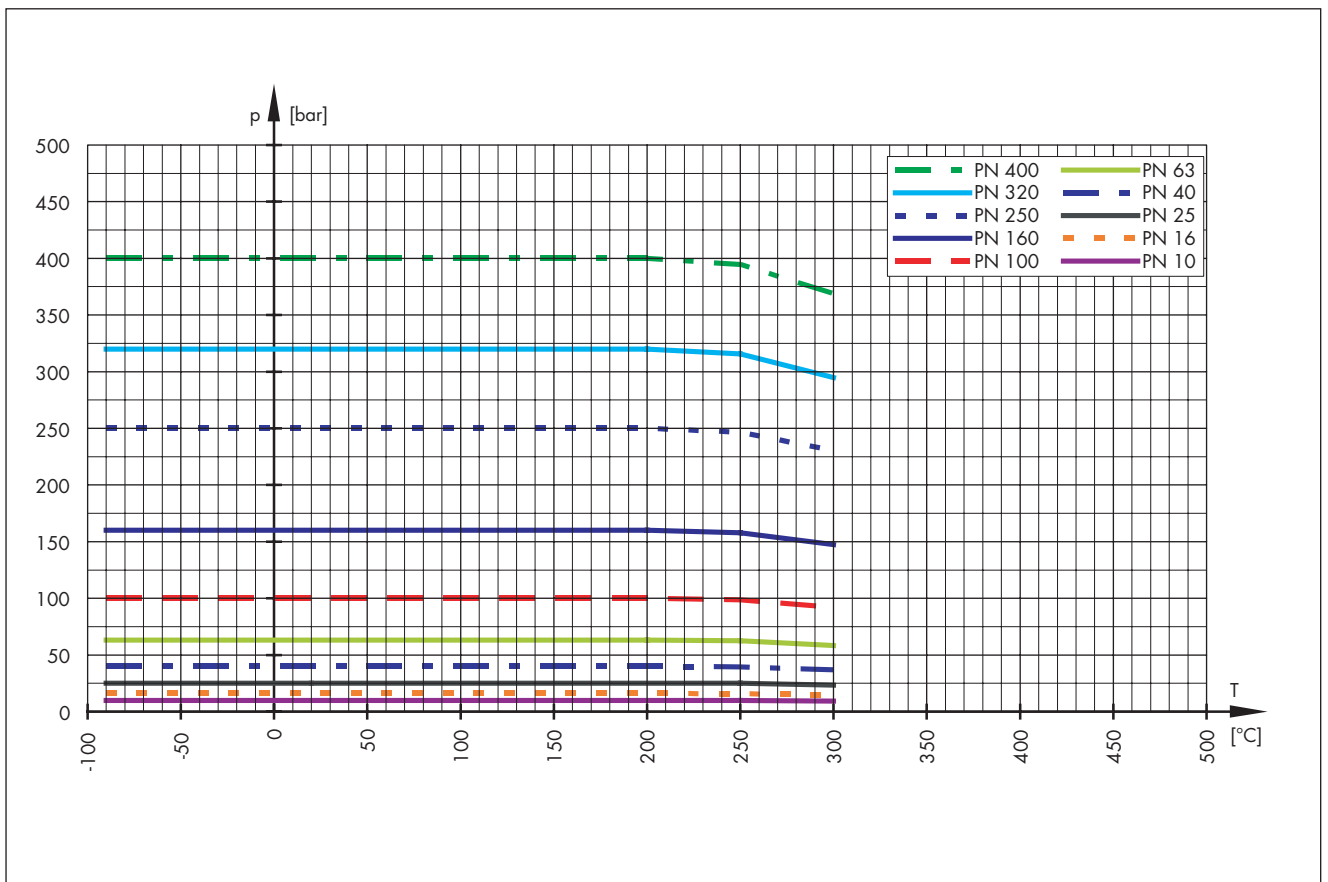
1.2 Spheroidal graphite iron EN-GJS400-18U-LT · EN-JS1049



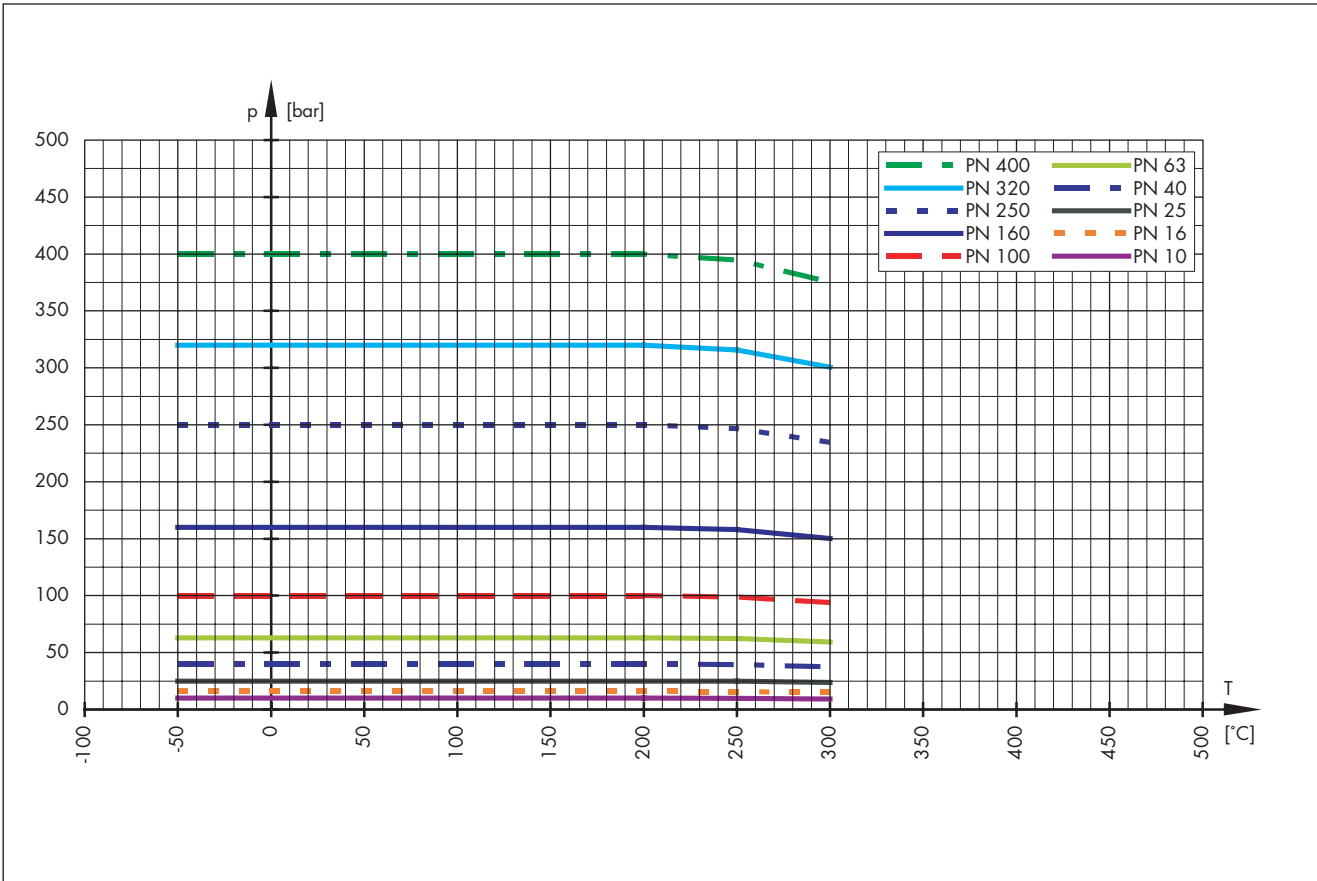
1.3 Cast steel GP240GH · 1.0619



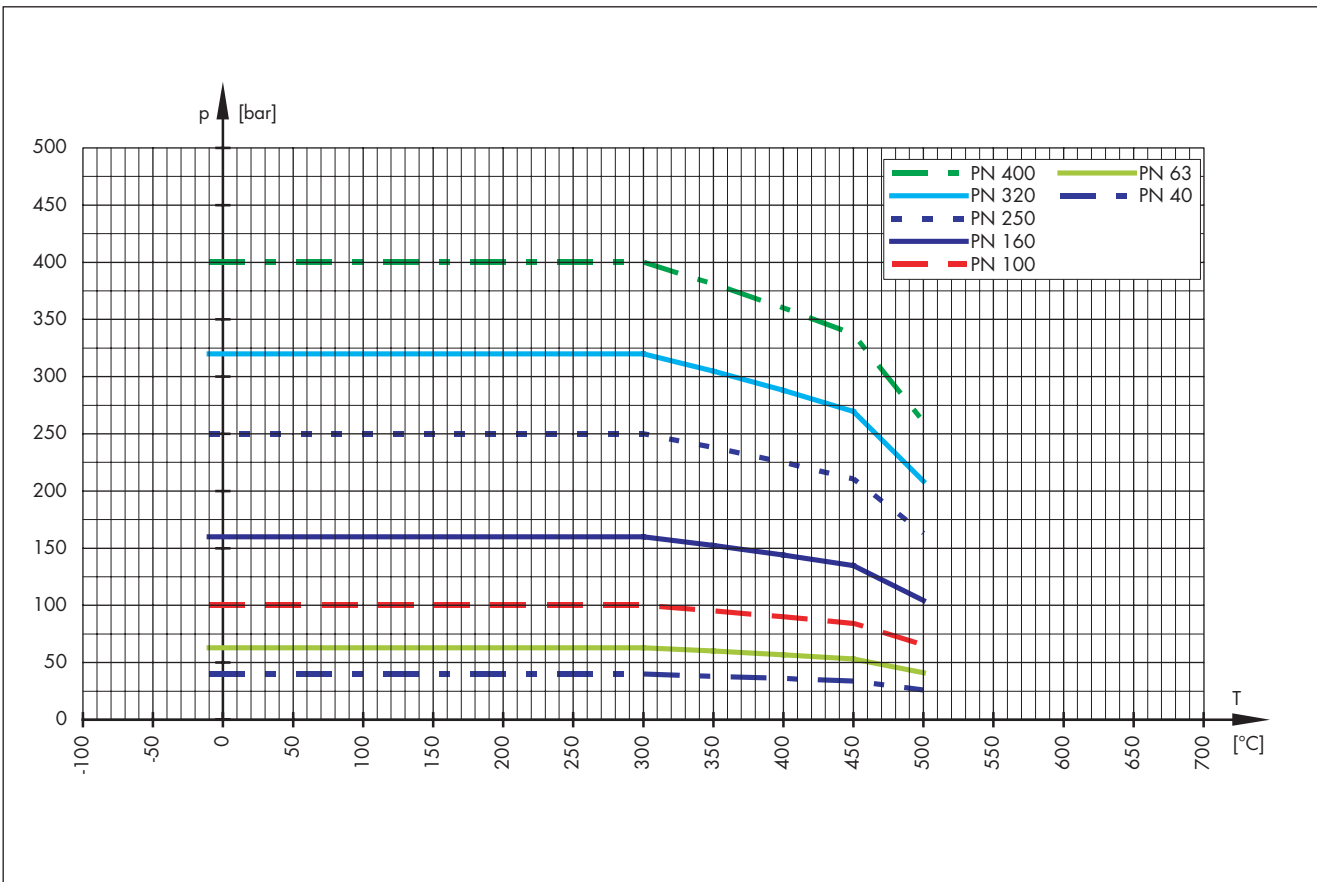
1.4 Cast steel G9Ni14 · 1.5638



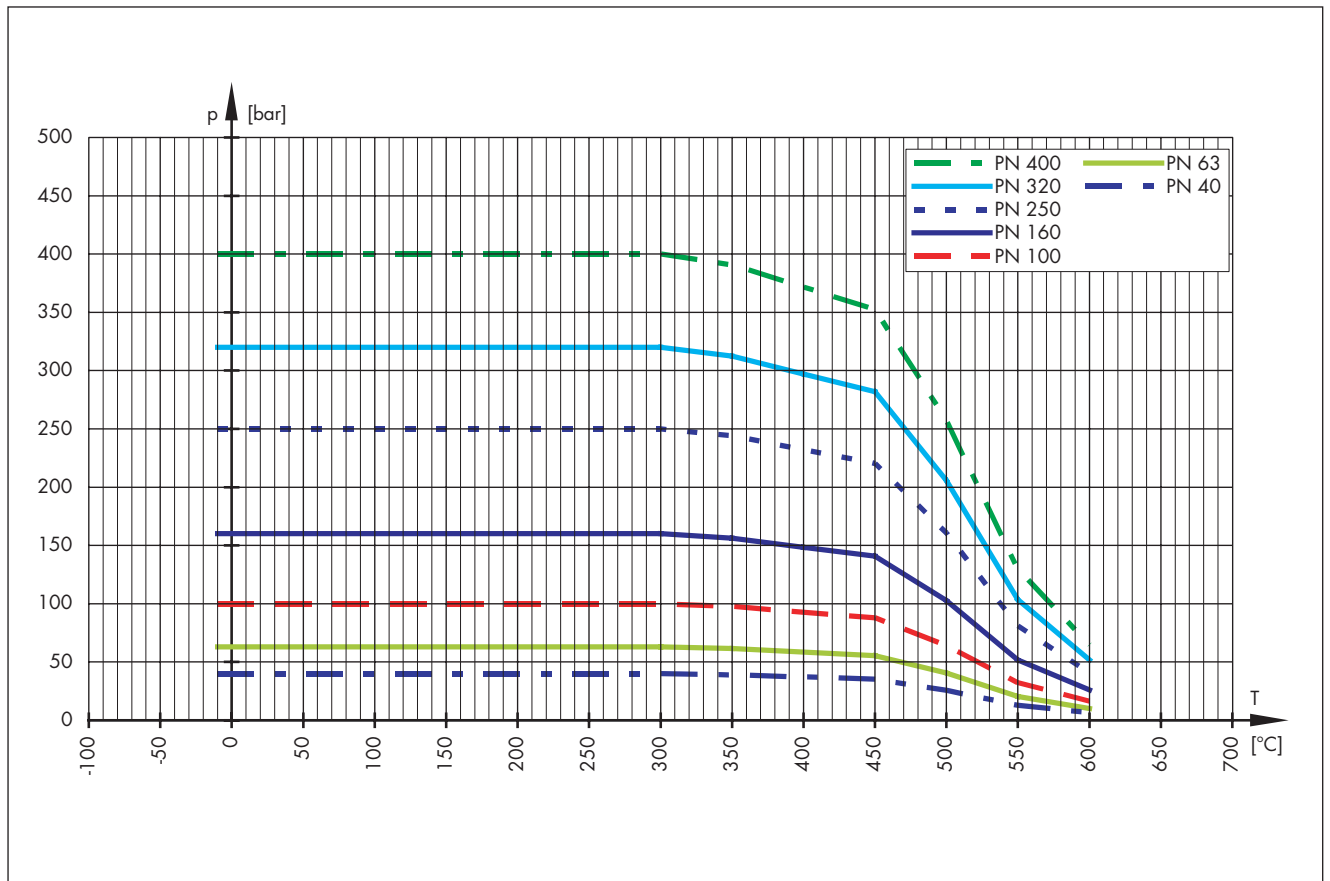
1.5 Cast steel G20Mn5 · 1.6220



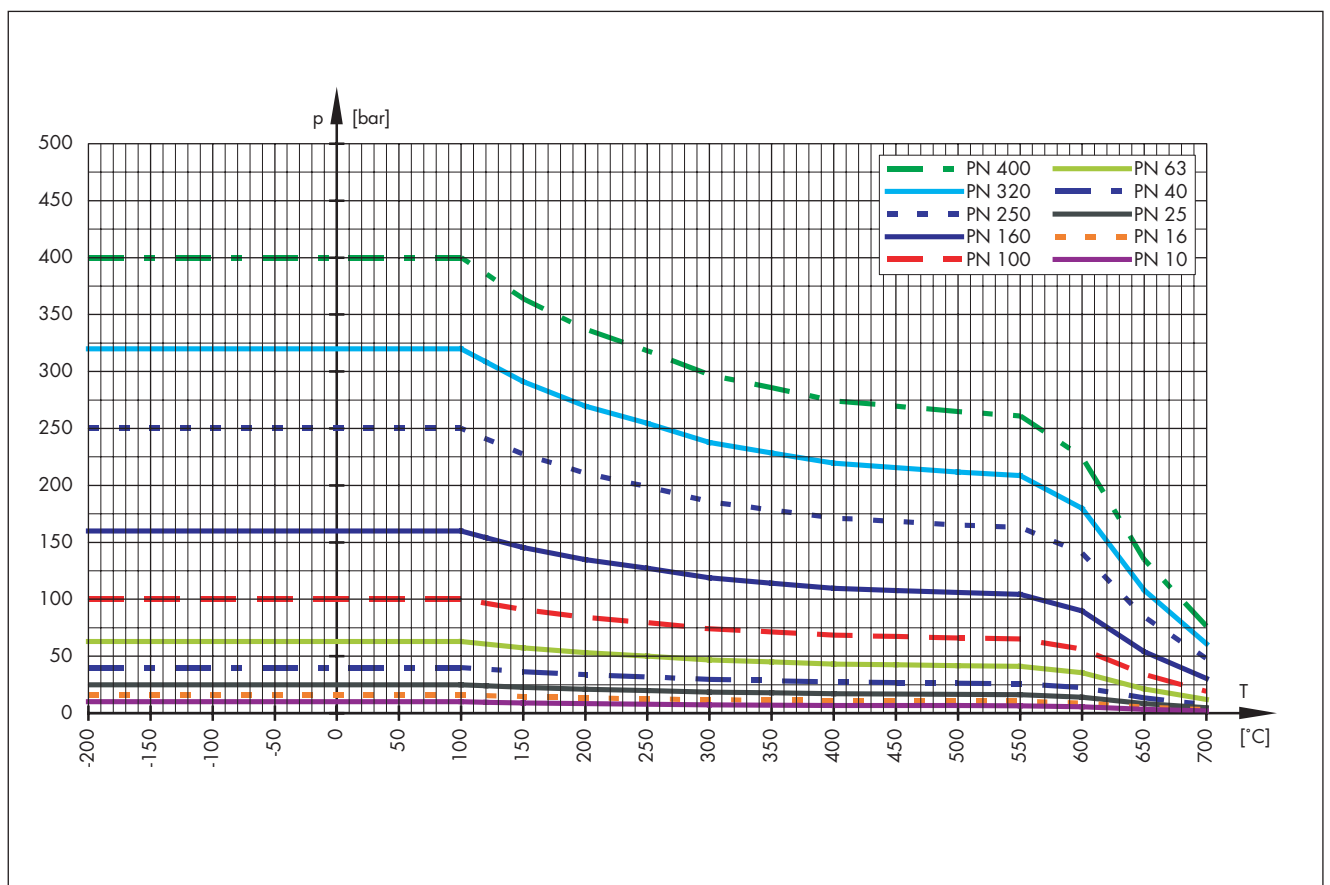
1.6 Cast steel G17CrMo5-5 · 1.7357



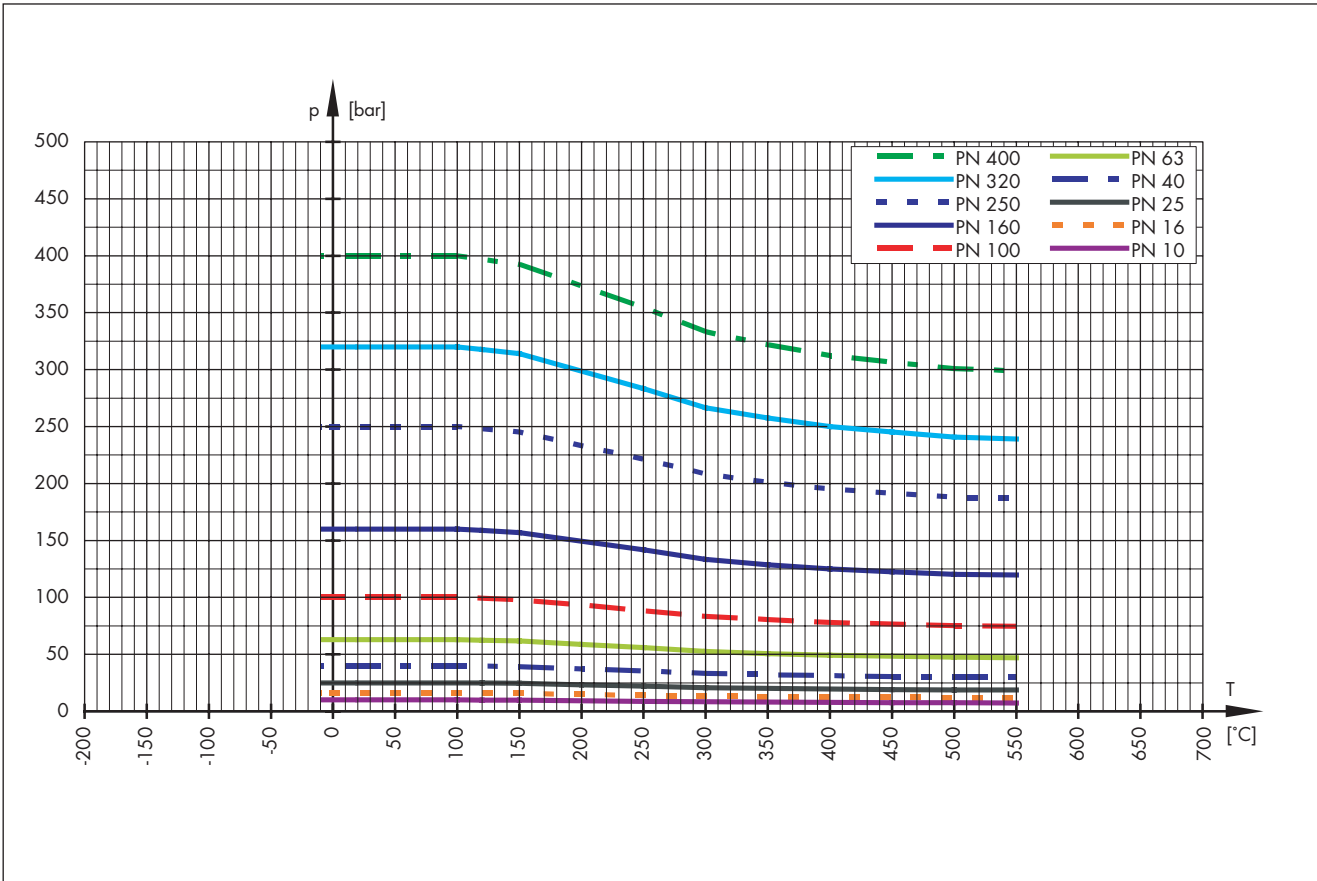
1.7 Cast steel G17CrMo9-10 · 1.7379



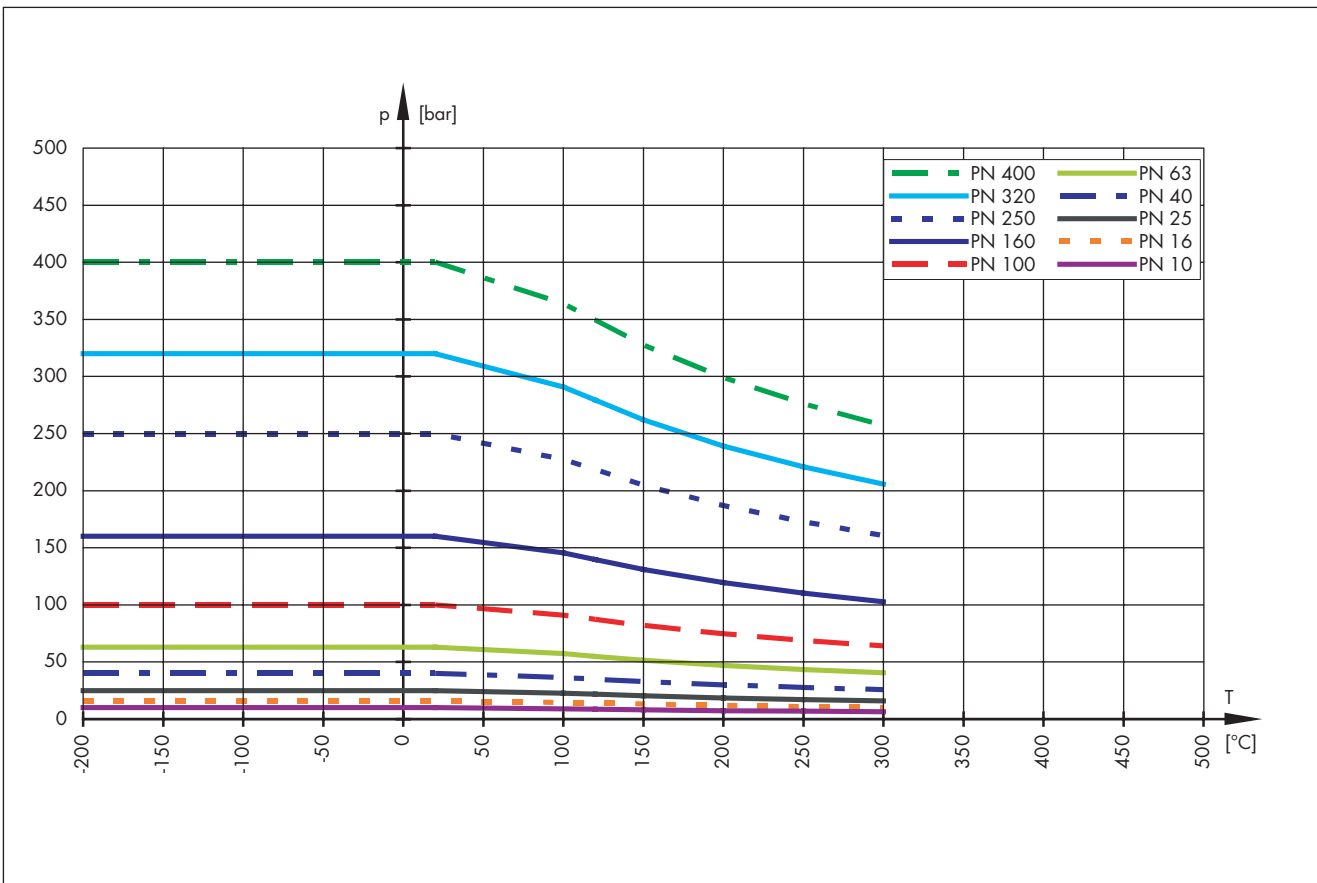
1.8 Cast stainless steel GX5CrNiMo19-11-2 · 1.4408



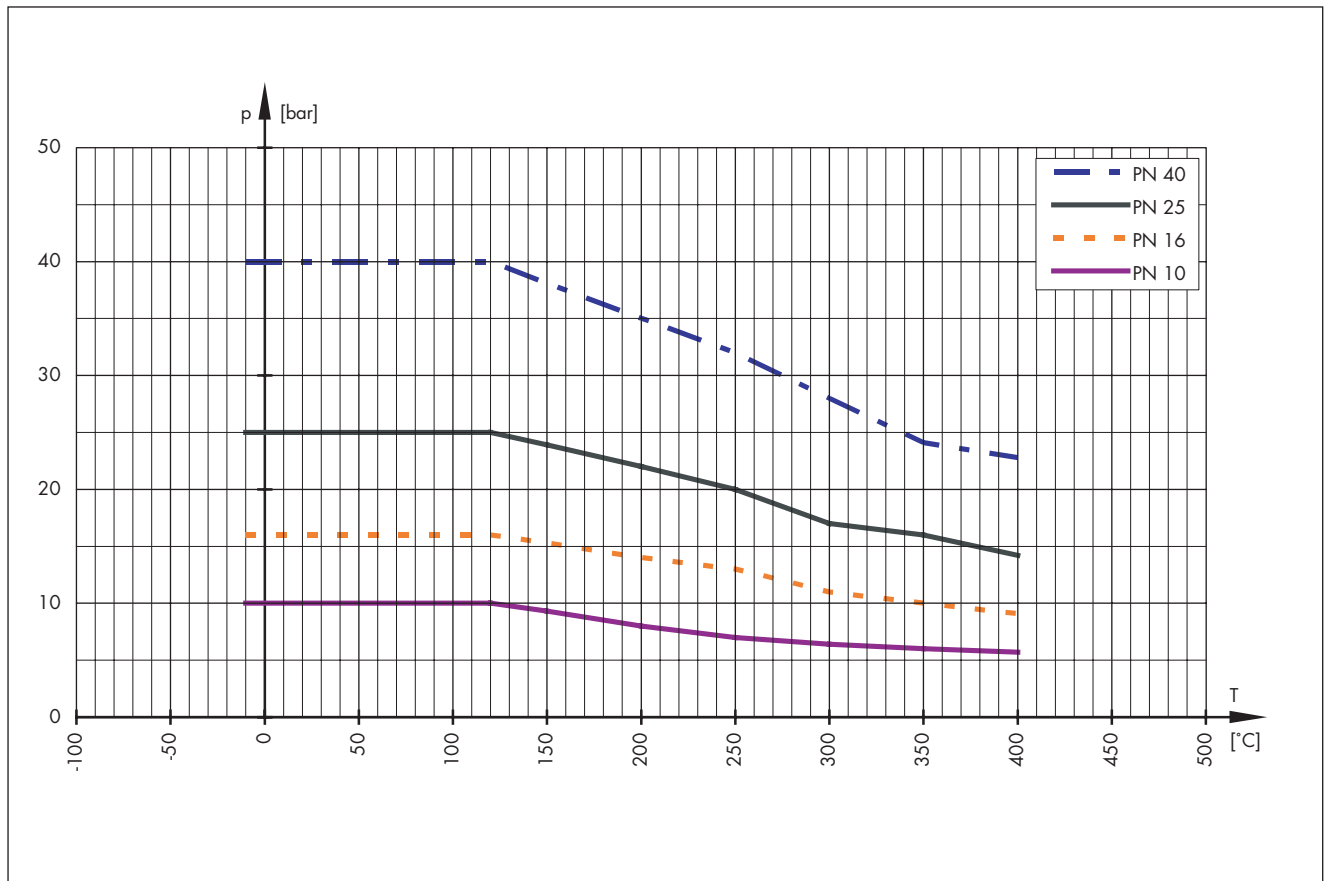
1.9 Cast stainless steel GX5CrNiMoNb19-11-2 · 1.4581



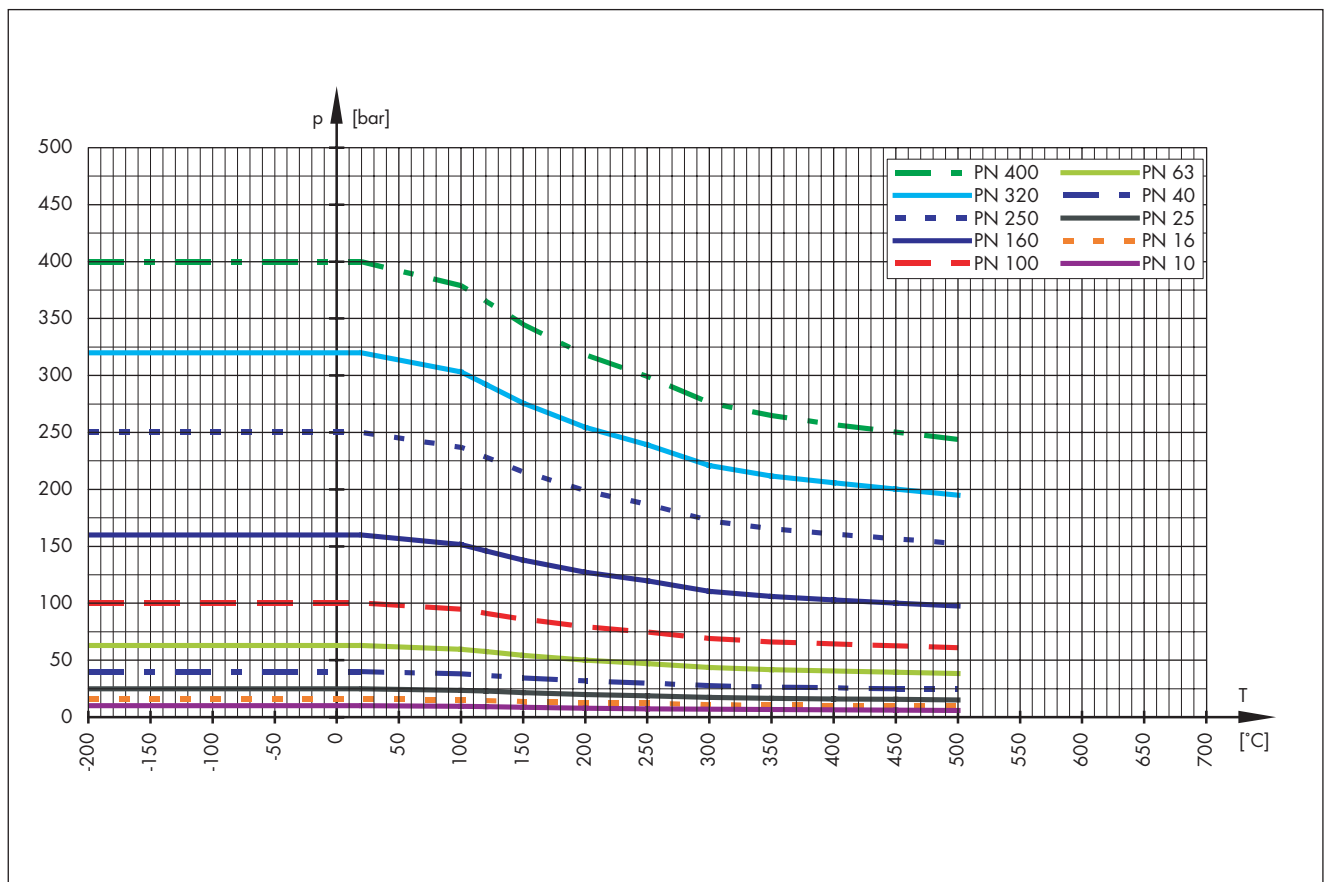
1.10 Cast stainless steel GX5CrNi19-10 · 1.4308



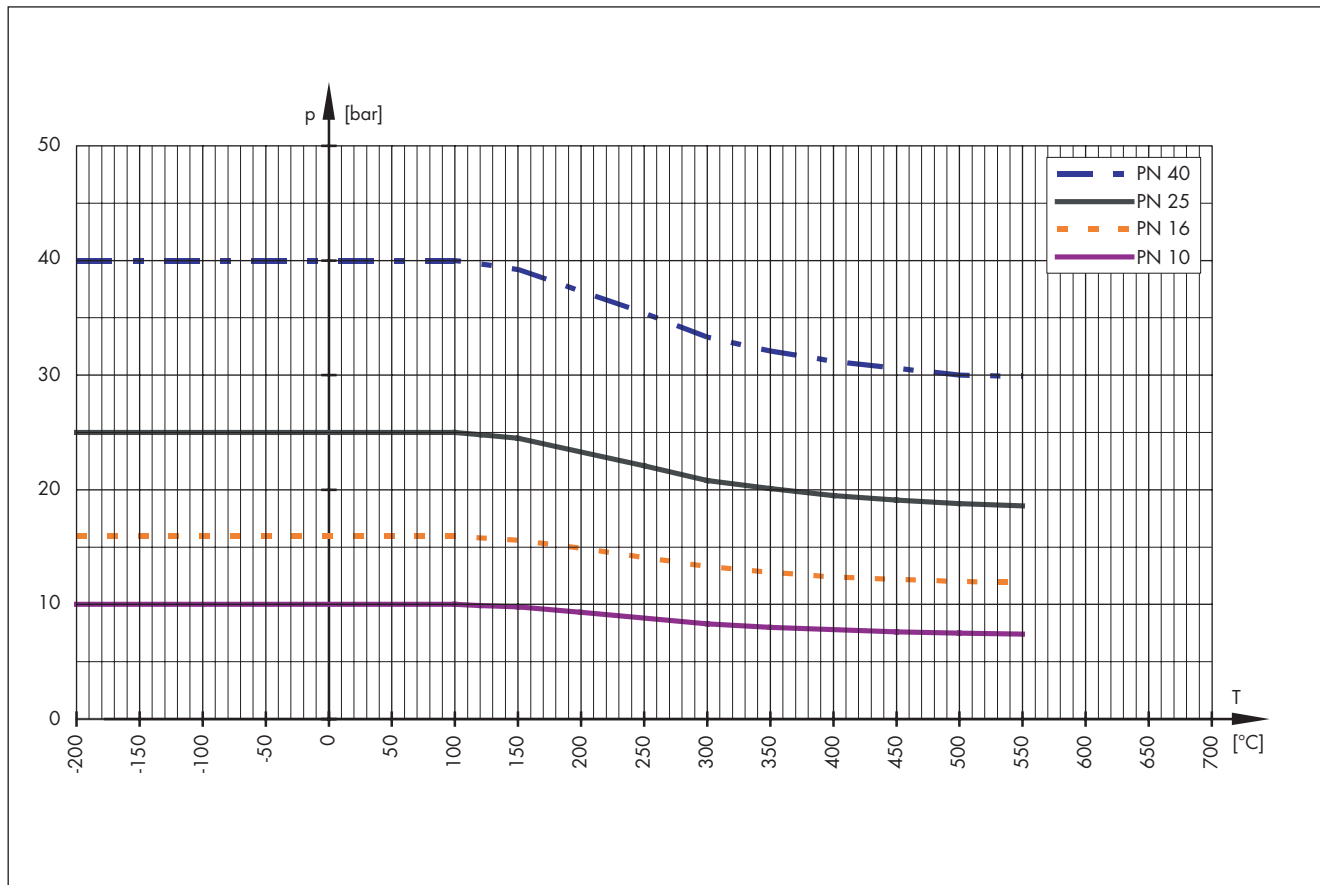
1.12 Forged steel P250GH · 1.0460



1.11 Forged stainless steel X2CrNiMo17-12-2 · 1.4404

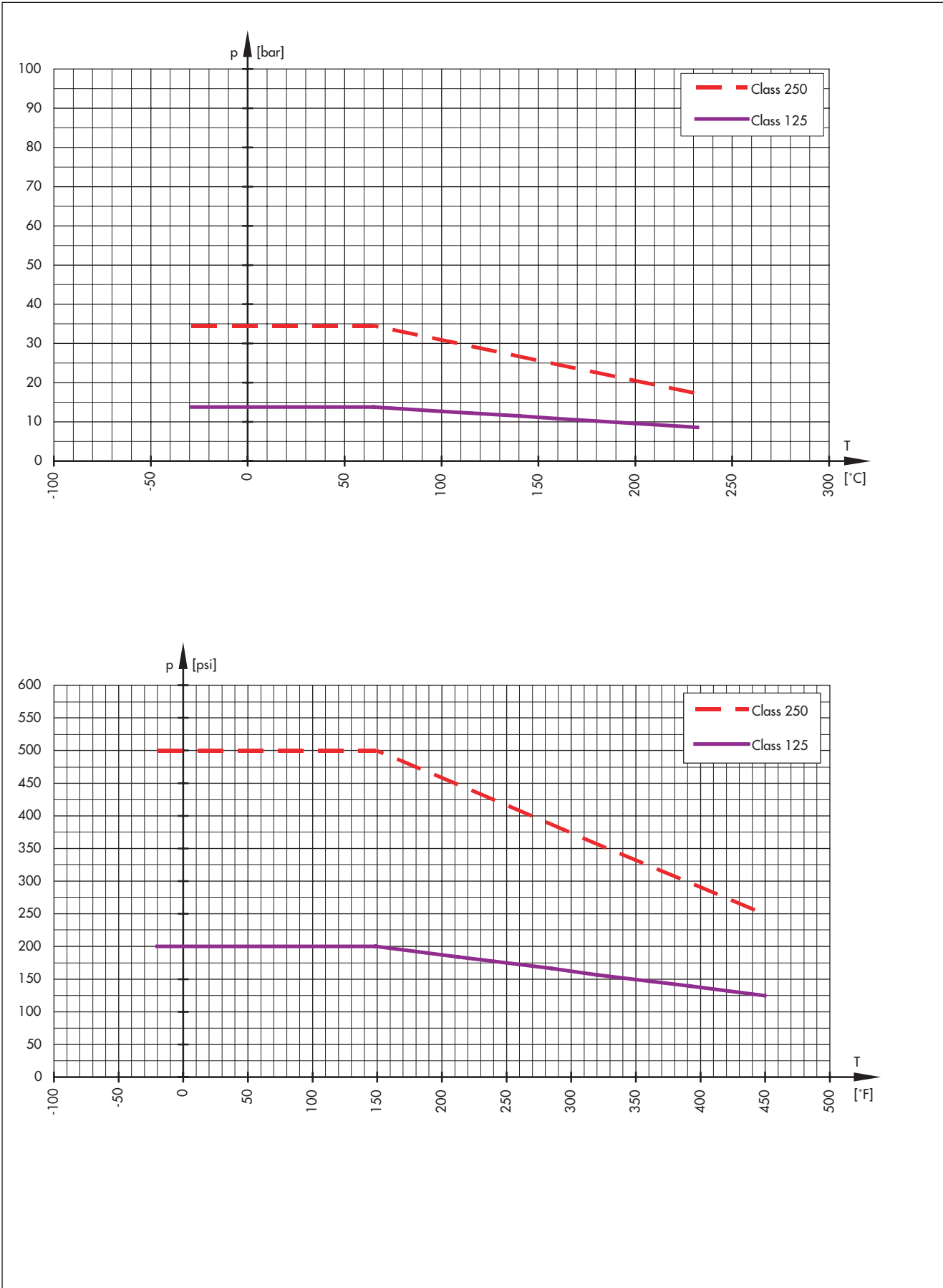


1.13 Forged stainless steel X6CrNiMoTi17-12-2 · 1.4571

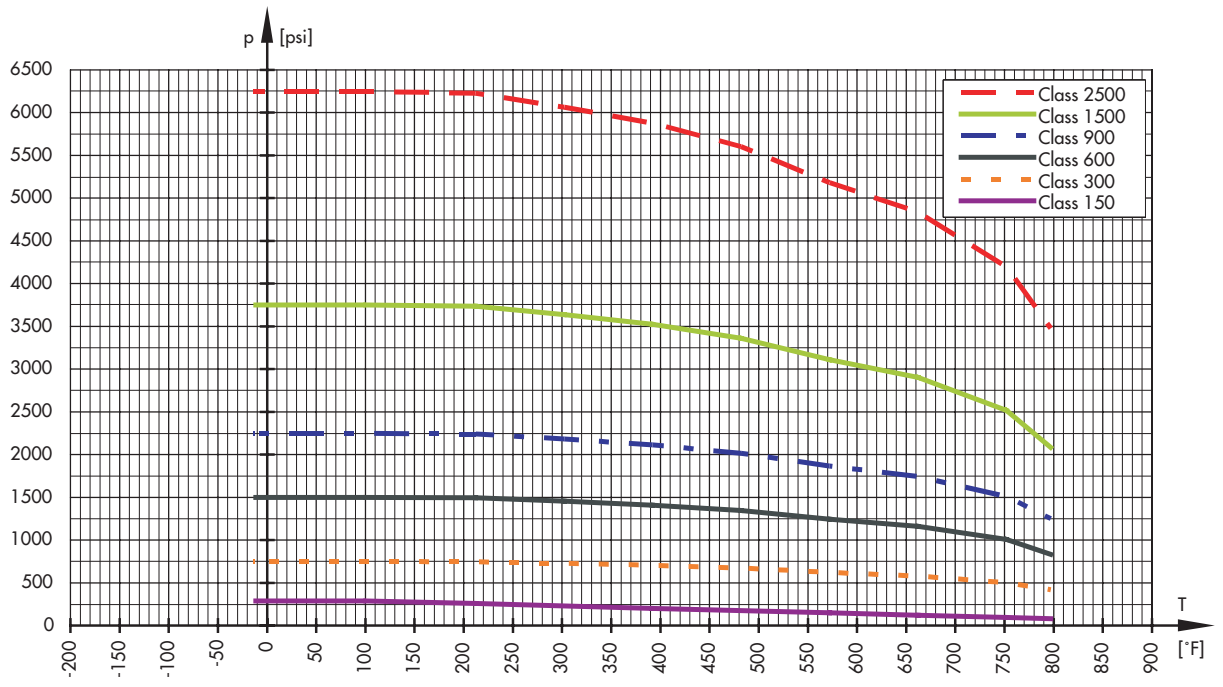
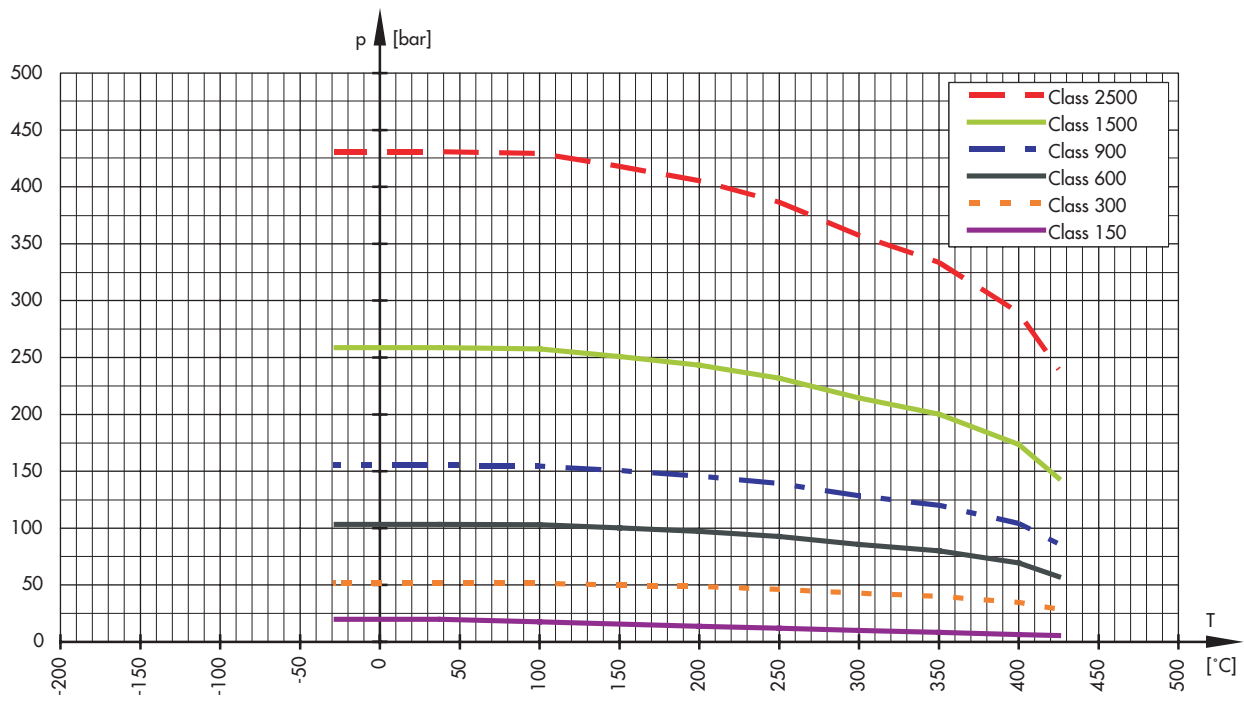


2. Materials according to ASTM

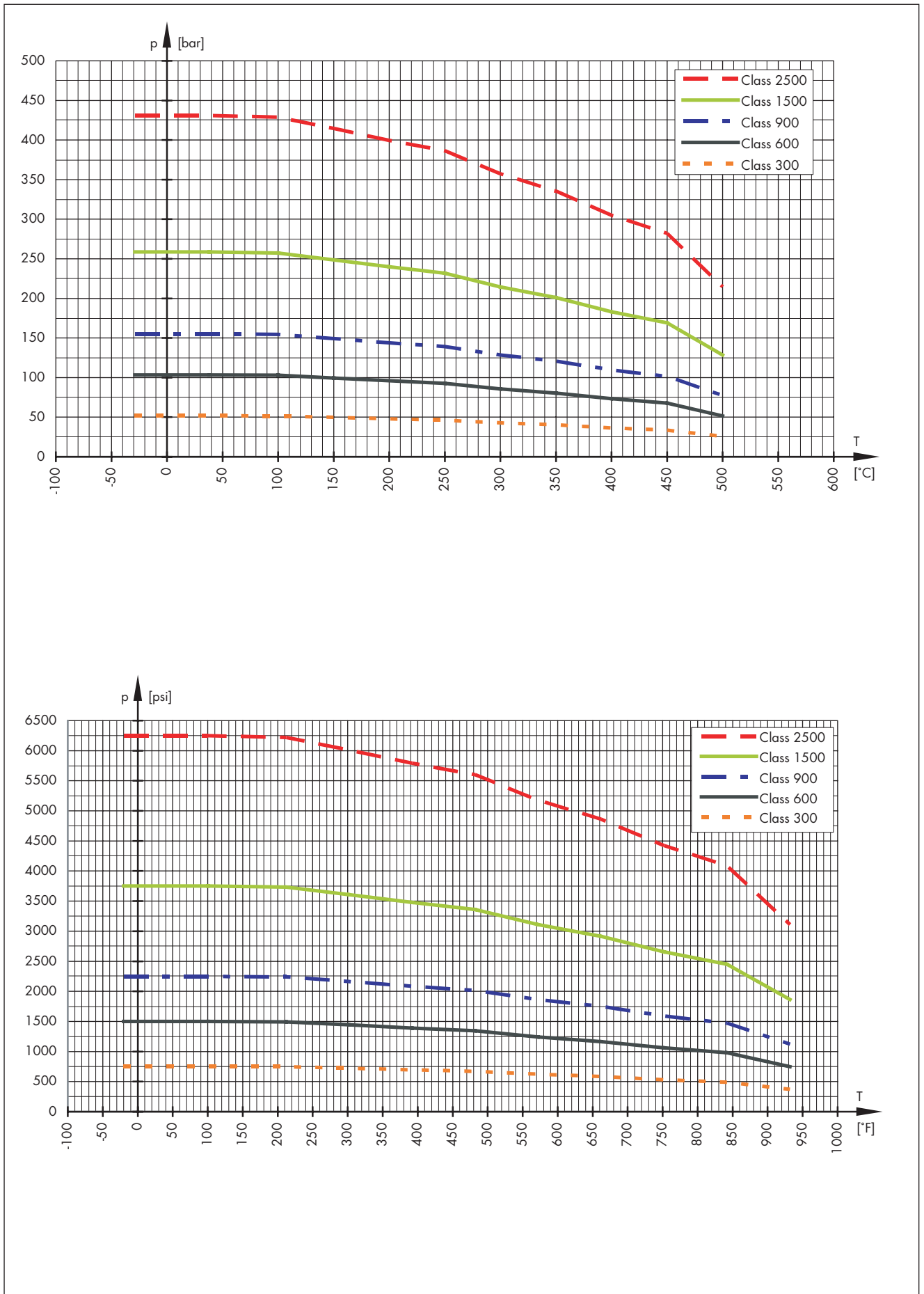
2.2 Cast iron · A 126 B



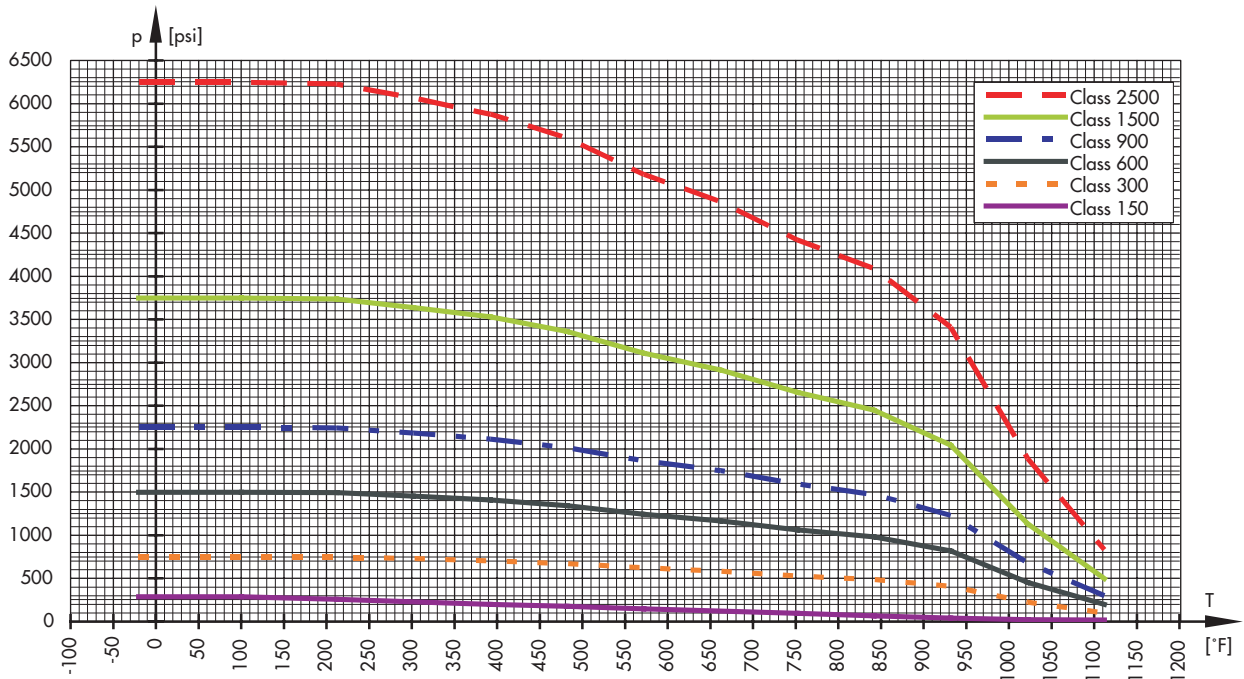
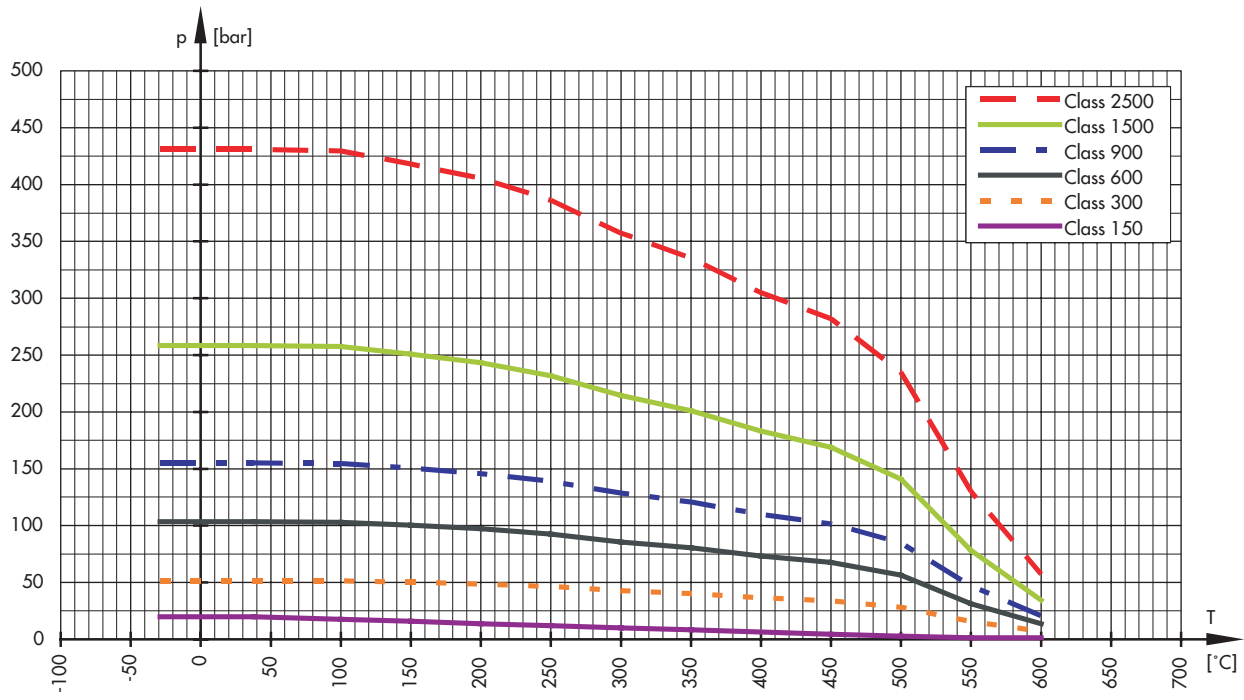
2.2 Cast steel · A 216 WCC



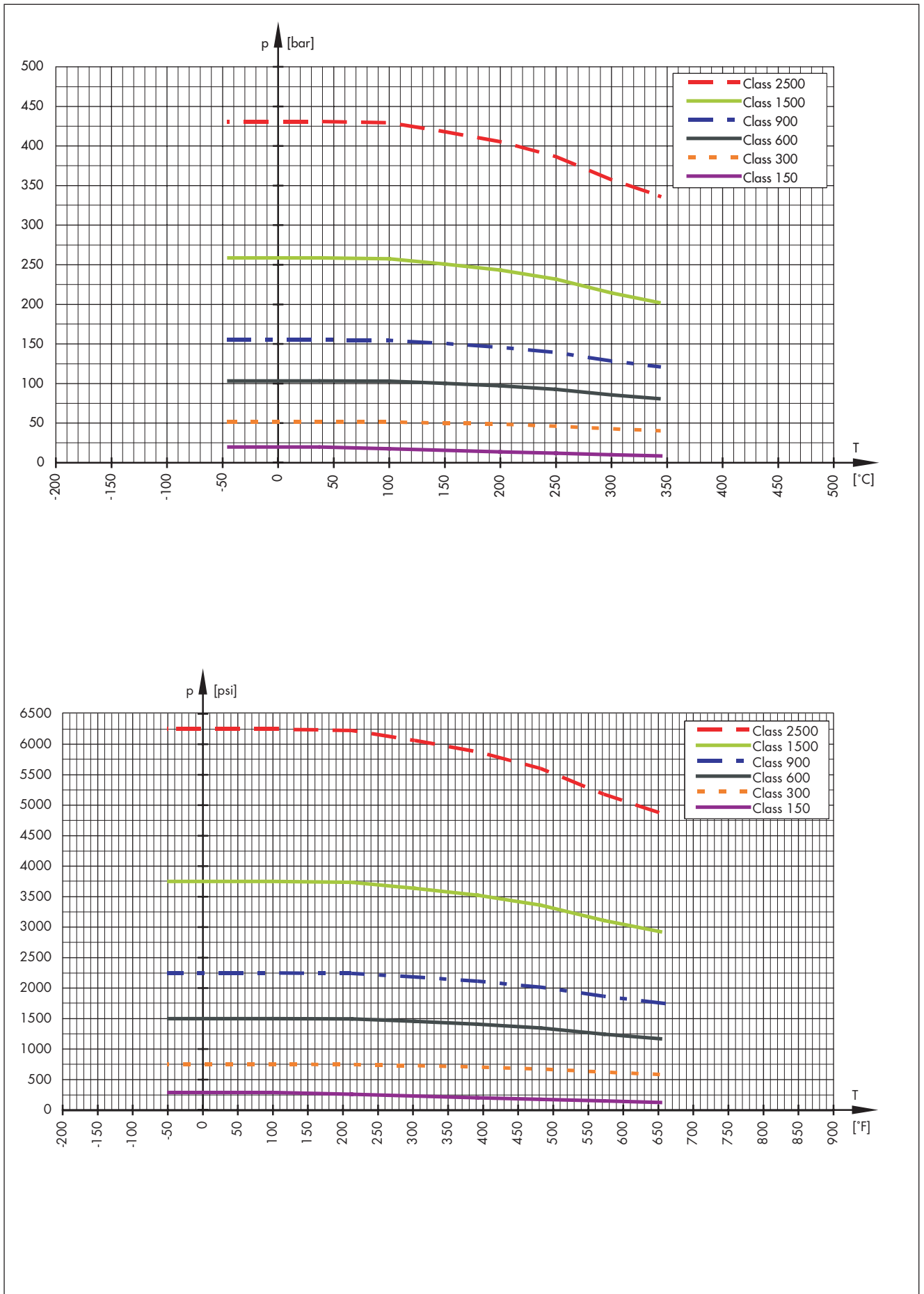
2.3 Cast steel · A 217 WC6



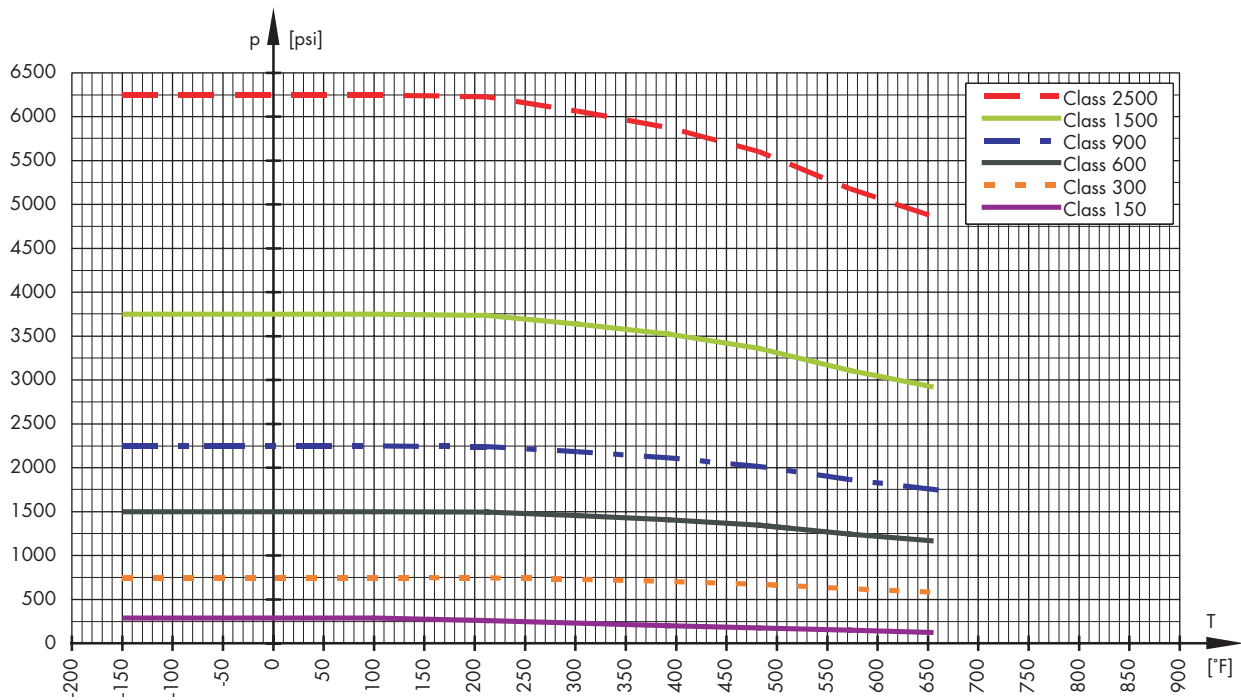
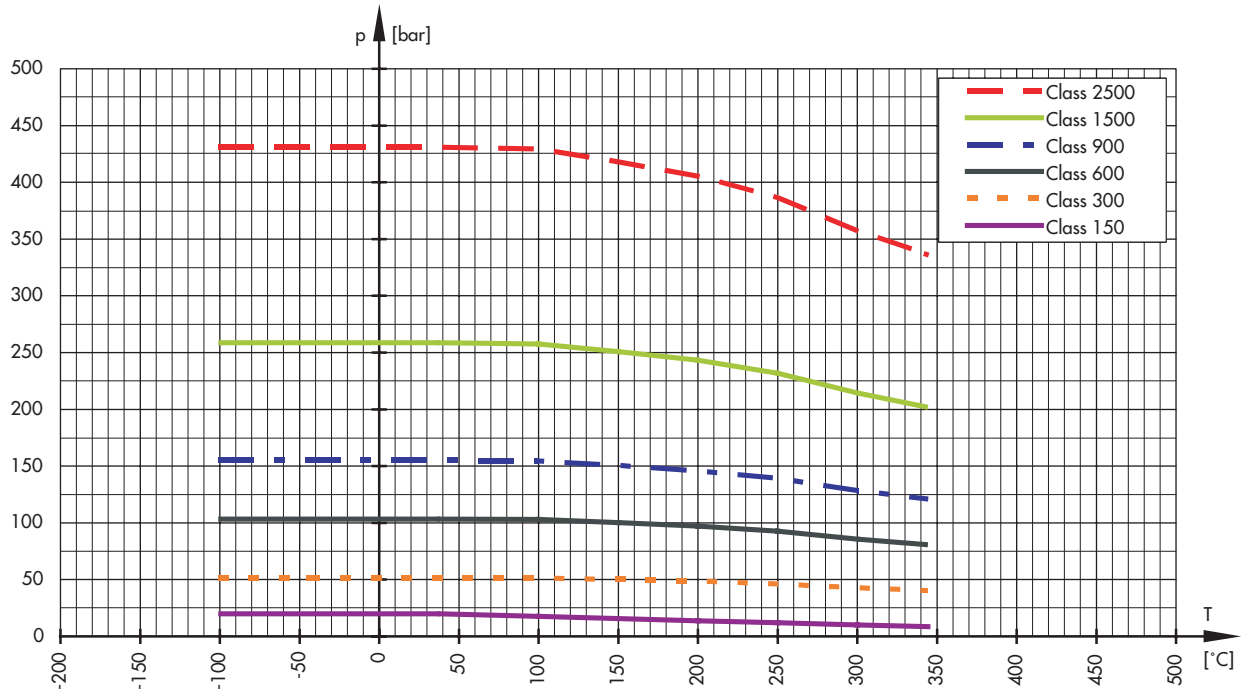
2.4 Cast steel · A 217 WC9



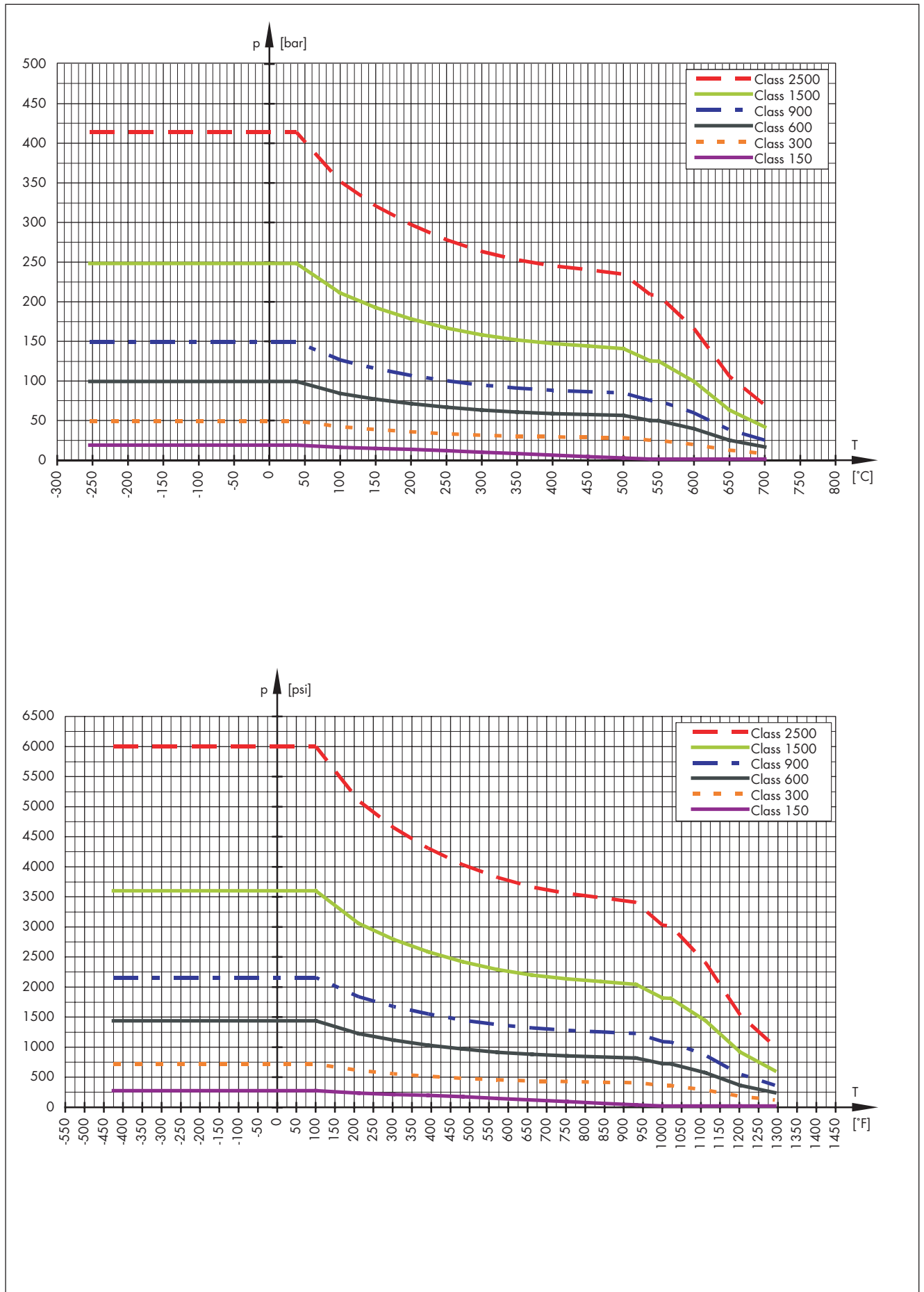
2.5 Cast steel · A 352 LCC



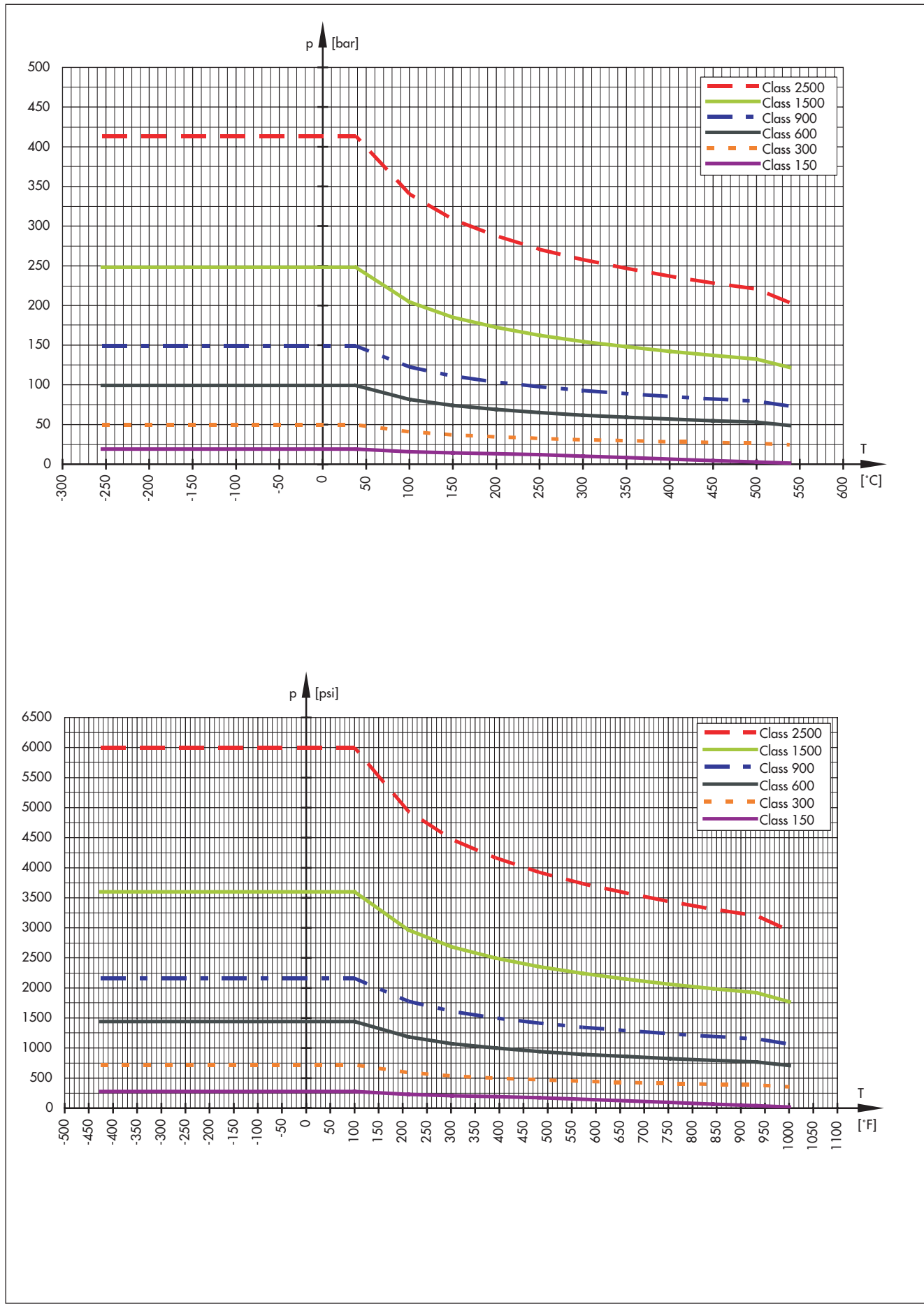
2.6 Cast steel · A 352 LC3



2.7 Cast stainless steel · A 351 CF8M



2.8 Cast stainless steel · A 351 CF8



2.9 Forged stainless steel · A 316 L

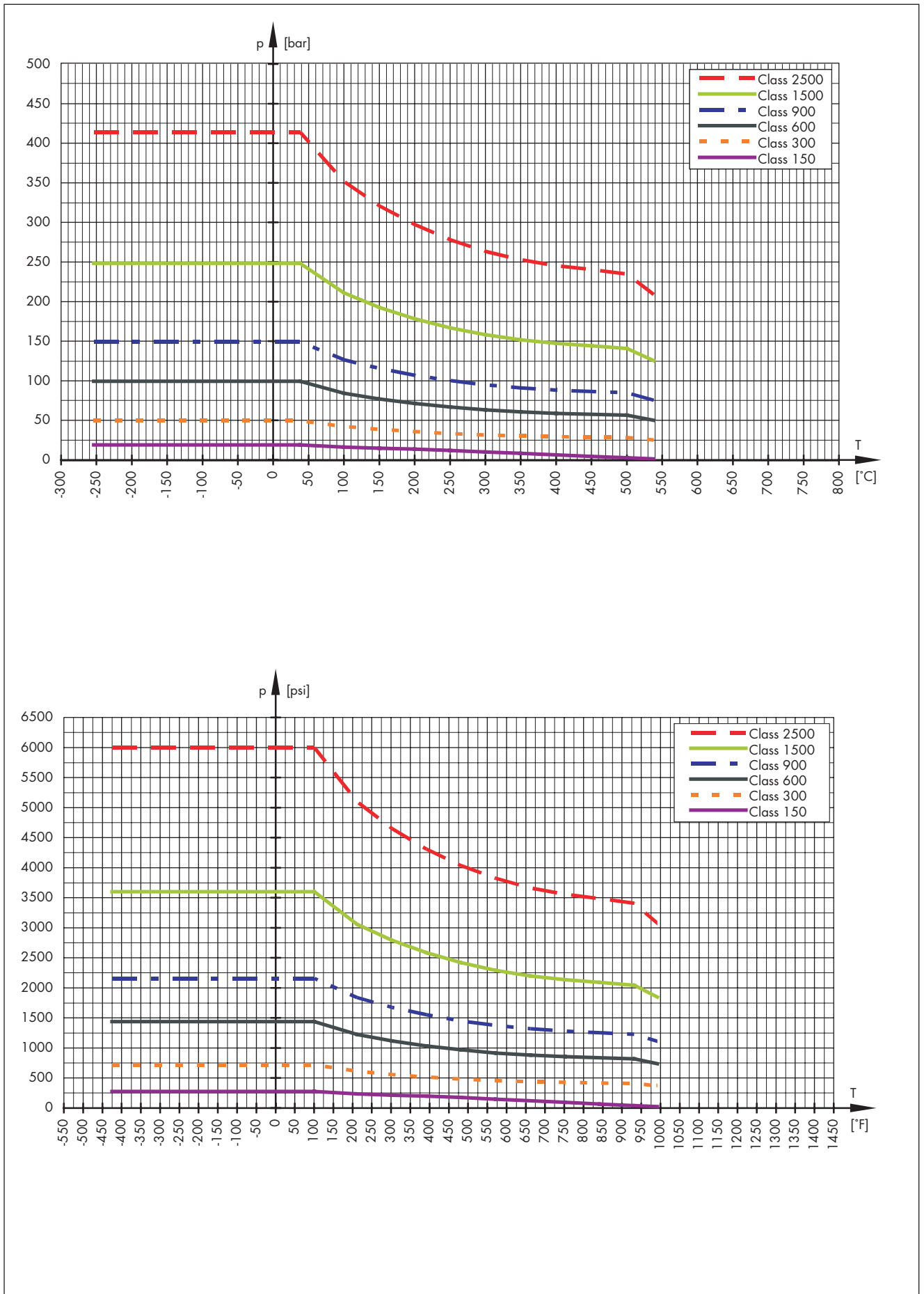


Table 3 · Permissible operating pressure depending on temperature · Materials according to DIN · Pressures in bar

Cast iron EN-GJL-250 · EN-JL1040 (-10 ... 300 °C)																
Temp. [°C]	-10	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	10.0	9.0	8.0	7.0	6.0	-							
PN 16	16.0	16.0	16.0	16.0	14.4	12.8	11.2	9.6								
Spheroidal graphite iron EN-GJS400-18U-LT · EN-JS1049 (-10 ... 350 °C)																
Temp. [°C]	-10	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	10.0	9.7	9.2	8.7	8.0	7.0	-						
PN 16	16.0	16.0	16.0	16.0	15.5	14.7	13.9	12.8	11.2							
PN 25	25.0	25.0	25.0	25.0	24.3	23.0	21.8	20.0	17.5							
Cast steel GP240GH · 1.0619 (-10 ... 400 °C)																
Temp. [°C]	-10	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	10.0	9.3	8.0	7.0	6.4	6.0	5.7	-					
PN 16	16.0	16.0	16.0	16.0	15.3	14.0	13.0	11.0	10.0	9.1						
PN 25	25.0	25.0	25.0	25.0	23.9	22.0	20.0	17.0	16.0	14.2						
PN 40	40.0	40.0	40.0	40.0	38.1	35.0	32.0	28.0	24.1	22.8						
PN 63	63.0	63.0	63.0	63.0	58.1	50.0	45.0	40.5	38.1	36.0						
PN 100	100.0	100.0	100.0	100.0	92.5	80.0	70.9	64.2	60.4	57.1						
PN 160	160.0	160.0	160.0	160.0	148.8	130.0	113.5	102.8	96.7	91.4						
PN 250	250.0	250.0	250.0	250.0	231.3	200.0	177.3	160.7	151.1	142.8						
PN 320	320.0	320.0	320.0	320.0	293.8	250.0	227.0	205.7	193.5	182.8						
PN 400	400.0	400.0	400.0	400.0	370.0	320.0	283.8	257.1	241.9	228.5						
Cast steel G9Ni14 · 1.5638 (-90 ... 300 °C)																
Temp. [°C]	-90	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	10.0	10.0	10.0	9.8	9.2	-							
PN 16	16.0	16.0	16.0	16.0	16.0	16.0	15.7	14.7								
PN 25	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.3								
PN 40	40.0	40.0	40.0	40.0	40.0	40.0	39.4	36.8								
PN 63	63.0	63.0	63.0	63.0	63.0	63.0	62.5	58.3								
PN 100	100.0	100.0	100.0	100.0	100.0	100.0	98.6	92.1								
PN 160	160.0	160.0	160.0	160.0	160.0	160.0	157.9	147.4								
PN 250	250.0	250.0	250.0	250.0	250.0	250.0	246.7	230.4								
PN 320	320.0	320.0	320.0	320.0	320.0	320.0	315.8	294.9								
PN 400	400.0	400.0	400.0	400.0	400.0	400.0	394.7	368.6								
Cast steel G20Mn5 · 1.6220 (-50 ... 300 °C)																
Temp. [°C]	-50	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	10.0	10.0	10.0	9.8	9.3	-							
PN 16	16.0	16.0	16.0	16.0	16.0	16.0	15.7	15.0								
PN 25	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.7								
PN 40	40.0	40.0	40.0	40.0	40.0	40.0	39.4	37.5								
PN 63	63.0	63.0	63.0	63.0	63.0	63.0	62.5	59.4								
PN 100	100.0	100.0	100.0	100.0	100.0	100.0	98.6	93.9								
PN 160	160.0	160.0	160.0	160.0	160.0	160.0	157.9	150.2								
PN 250	250.0	250.0	250.0	250.0	250.0	250.0	246.7	234.7								
PN 320	320.0	320.0	320.0	320.0	320.0	320.0	315.8	300.5								
PN 400	400.0	400.0	400.0	400.0	400.0	400.0	394.7	375.6								

Cast steel G17CrMo5-5 · 1.7357 (-10 ... 500 °C)																
Temp. [°C]	-10	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 40	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	38.0	36.0	33.7	26.0	-			
PN 63	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	60.0	56.7	53.1	41.1				
PN 100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	95.2	90.0	84.2	65.2				
PN 160	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	152.3	144.0	134.8	104.3				
PN 250	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	238.0	225.0	210.7	163.0				
PN 320	320.0	320.0	320.0	320.0	320.0	320.0	320.0	320.0	304.7	288.0	269.7	208.7				
PN 400	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	380.9	360.0	337.1	260.9				
Cast steel G17CrMo9-10 · 1.7379 (-10 ... 600 °C)																
Temp. [°C]	-10	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 40	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	39.0	37.1	35.2	25.7	12.9	6.4	-	
PN 63	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	61.5	58.5	55.5	40.5	20.4	10.2		
PN 100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	97.6	92.8	88.0	64.2	32.3	16.1		
PN 160	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	156.1	148.5	140.9	102.8	51.8	25.9		
PN 250	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	244.0	232.1	220.2	160.7	80.9	40.4		
PN 320	320.0	320.0	320.0	320.0	320.0	320.0	320.0	320.0	312.3	297.1	281.9	205.7	103.6	51.8		
PN 400	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	390.4	371.4	352.3	257.1	129.5	64.7		
Cast stainless steel GX5CrNiMo19-11-2 · 1.4408 (-200 ... 700 °C)																
Temp. [°C]	-200	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	9.6	9.0	8.4	7.9	7.4	7.1	6.8	6.7	6.6	6.5	5.6	3.4	1.9
PN 16	16.0	16.0	16.0	15.4	14.5	13.4	12.7	11.8	11.4	10.9	10.7	10.5	10.4	8.9	5.3	3.0
PN 25	25.0	25.0	25.0	24.1	22.7	21.0	19.8	18.5	17.8	17.1	16.8	16.5	16.3	14.0	8.4	4.8
PN 40	40.0	40.0	40.0	38.5	36.3	33.7	31.8	29.7	28.5	27.4	26.9	26.4	26.0	22.4	13.4	7.6
PN 63	63.0	63.0	63.0	60.7	57.3	53.1	50.1	46.8	45.0	43.2	42.4	41.7	41.1	35.4	21.2	12.0
PN 100	100.0	100.0	100.0	96.4	90.9	84.2	79.5	74.2	71.4	68.5	67.3	66.1	65.2	56.1	33.7	19.1
PN 160	160.0	160.0	160.0	154.2	145.5	134.8	127.2	118.8	114.2	109.7	107.8	105.9	104.3	89.9	53.9	30.6
PN 250	250.0	250.0	250.0	240.9	227.3	210.7	198.8	185.7	178.5	171.4	168.4	165.4	163.0	140.4	84.2	47.7
PN 320	320.0	320.0	320.0	308.4	291.0	269.7	254.4	237.7	228.5	219.4	215.6	211.8	208.7	179.8	107.9	61.1
PN 400	400.0	400.0	400.0	385.5	363.8	337.1	318.0	297.1	285.7	274.2	269.5	264.7	260.9	224.7	134.8	76.4
Cast stainless steel GX5CrNiMoNb19-11-2 · 1.4581 (-10 ... 550 °C)																
Temp. [°C]	-10	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	9.9	9.8	9.3	8.8	8.3	8.0	7.8	7.6	7.5	7.4	-		
PN 16	16.0	16.0	16.0	15.8	15.6	14.9	14.1	13.3	12.8	12.4	12.2	12.0	11.9			
PN 25	25.0	25.0	25.0	24.8	24.5	23.3	22.1	20.8	20.1	19.5	19.1	18.8	18.6			
PN 40	40.0	40.0	40.0	39.7	39.2	37.3	35.4	33.3	32.1	31.2	30.6	30.0	29.9			
PN 63	63.0	63.0	63.0	62.5	61.8	58.8	55.8	52.5	50.7	49.2	48.3	47.4	47.1			
PN 100	100.0	100.0	100.0	99.2	98.0	93.3	88.5	83.3	80.4	78.0	76.6	75.2	74.7			
PN 160	160.0	160.0	160.0	158.8	156.9	149.3	141.7	133.3	128.7	124.9	122.6	120.3	119.6			
PN 250	250.0	250.0	250.0	248.1	245.2	233.3	221.4	208.3	201.1	195.2	191.6	188.0	186.9			
PN 320	320.0	320.0	320.0	317.6	313.9	298.6	283.4	266.6	257.5	249.9	245.3	240.7	239.2			
PN 400	400.0	400.0	400.0	396.9	392.3	373.3	354.2	333.3	321.9	312.3	306.6	300.9	299.0			

Cast stainless steel GX5CrNi19-10 · 1.4308 (-200 ... 300 °C)																
Temp. [°C]	-200	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	9.0	8.6	8.1	7.4	6.9	6.4								
PN 16	16.0	16.0	14.5	13.9	13.1	11.9	11.0	10.2								
PN 25	25.0	25.0	22.7	21.8	20.4	18.6	17.2	16.0								
PN 40	40.0	40.0	36.3	34.9	32.7	29.9	27.6	25.7								
PN 63	63.0	63.0	57.3	55.0	51.6	47.1	43.5	40.5								
PN 100	100.0	100.0	90.9	87.3	81.9	74.7	69.0	64.2								
PN 160	160.0	160.0	145.5	139.7	131.0	119.6	110.4	102.8								
PN 250	250.0	250.0	227.3	218.3	204.7	186.9	172.6	160.7								
PN 320	320.0	320.0	291.0	279.4	262.0	239.2	220.9	205.7								
PN 400	400.0	400.0	363.8	349.3	327.6	299.0	276.1	257.1								
Forged steel 1.0460 (-10 ... 400 °C)																
Temp. [°C]	-10	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	10.0	9.3	8.0	7.0	6.4	6.0	5.7						
PN 16	16.0	16.0	16.0	16.0	15.3	14.0	13.0	11.0	10.0	9.1						
PN 25	25.0	25.0	25.0	25.0	23.9	22.0	20.0	17.0	16.0	14.2						
PN 40	40.0	40.0	40.0	40.0	38.1	35.0	32.0	28.0	24.1	22.8						
Forged stainless steel 1.4404 (-200 ... 500 °C)																
Temp. [°C]	-200	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	9.4	9.1	8.6	7.9	7.4	6.9	6.6	6.4	6.2	6.0				
PN 16	16.0	16.0	15.1	14.5	13.7	12.7	11.9	11.0	10.5	10.2	10.0	9.7				
PN 25	25.0	25.0	23.6	22.8	21.5	19.8	18.6	17.2	16.5	16.0	15.6	15.2				
PN 40	40.0	40.0	37.9	36.5	34.4	31.8	29.9	27.6	26.4	25.7	25.0	24.3				
PN 63	63.0	63.0	59.7	57.5	54.3	50.1	47.1	43.5	41.7	40.5	39.4	38.4				
PN 100	100.0	100.0	94.7	91.3	86.1	79.5	74.7	69.0	66.1	64.2	62.6	60.9				
PN 160	160.0	160.0	151.6	146.1	137.9	127.2	119.6	110.4	105.9	102.8	100.1	97.5				
PN 250	250.0	250.0	236.9	228.3	215.4	198.8	186.9	172.6	165.4	160.7	156.5	152.3				
PN 320	320.0	320.0	303.2	292.2	275.8	254.4	239.2	220.9	211.8	205.7	200.3	195.0				
PN 400	400.0	400.0	379.0	365.3	344.7	318.0	299.0	276.1	264.7	257.1	250.4	243.8				
Forged stainless steel 1.4571 (-200 ... 550 °C)																
Temp. [°C]	-200	20	100	120	150	200	250	300	350	400	450	500	550	600	650	700
PN 10	10.0	10.0	10.0	9.9	9.8	9.3	8.8	8.3	8.0	7.8	7.6	7.5	7.4			
PN 16	16.0	16.0	16.0	15.8	15.6	14.9	14.1	13.3	12.8	12.4	12.2	12.0	11.9			
PN 25	25.0	25.0	25.0	24.8	24.5	23.3	22.1	20.8	20.1	19.5	19.1	18.8	18.6			
PN 40	40.0	40.0	40.0	39.7	39.2	37.3	35.4	33.3	32.1	31.2	30.6	30.0	29.9			

Table 4a · Permissible operating pressure depending on temperature (°C) · Materials according to ANSI · Pressures in bar

Cast iron · A 126 B (-29 ... 232 °C)																				
Temp. [°C]	-29	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 125	13.8	-	13.8	12.7	11.1	9.6	8.6													
Class 250	34.5		34.5	30.9	25.6	20.5	17.2													
Cast steel · A 216 WCC (-29 ... 425 °C)																				
Temp. [°C]	-29	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 150	19.8	19.8		17.7	15.8	13.8		12.1	10.2		8.4	6.5	5.5							
Class 300	51.7	51.7		51.5	50.2	48.6		46.3	42.9		40.0	34.7	28.8							
Class 600	103.4	103.4		103.0	100.3	97.2		92.7	85.7		80.0	69.4	57.5							
Class 900	155.1	155.1	-	154.6	150.5	145.8	-	139.0	128.6	-	120.1	104.2	86.3							
Class 1500	258.6	258.6		257.6	250.8	243.2		231.8	214.4		200.1	173.6	143.8							
Class 2500	430.9	430.9		429.4	418.1	405.4		386.2	357.1		333.5	289.3	239.7							
Cast steel · A 217 WC6 (-29 ... 500 °C)																				
Temp. [°C]	-29	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 300	51.7	51.7		51.5	49.7	48.0		46.3	42.9		40.3	36.5		33.7	25.7					
Class 600	103.4	103.4		103.0	99.5	95.9		92.7	85.7		80.4	73.3		67.7	51.5					
Class 900	155.1	155.1	-	154.4	149.2	143.9	-	139.0	128.6	-	120.7	109.8	-	101.4	77.2					
Class 1500	258.6	258.6		257.4	248.7	239.8		231.8	214.4		201.1	183.1		169.0	128.6					
Class 2500	430.9	430.9		429.0	414.5	399.6		386.2	357.1		335.3	304.9		281.8	214.4					
Cast steel · A 217 WC9 (-29 ... 600 °C)																				
Temp. [°C]	-29	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 150	19.8	19.8		17.7	15.8	13.8		12.1	10.2		8.4	6.5		4.6	2.8			1.4	1.4	
Class 300	51.7	51.7		51.5	50.3	48.6		46.3	42.9		40.3	36.5		33.7	28.2			15.6	6.9	
Class 600	103.4	103.4		103.0	100.3	97.2		92.7	85.7		80.4	73.3		67.7	56.5			31.3	13.8	
Class 900	155.1	155.1	-	154.6	150.6	145.8	-	139.0	128.6	-	120.7	109.8	-	101.4	84.7	-		46.9	20.7	
Class 1500	258.5	258.5		257.6	250.8	243.4		231.8	214.4		201.1	183.1		169.0	140.9			78.2	34.4	
Class 2500	430.9	430.9		429.4	418.2	405.4		386.2	357.1		335.3	304.9		281.8	235.0			130.3	57.4	
Cast steel · A 352 LCC (-46 ... 345 °C)																				
Temp. [°C]	-46	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 150	19.8	19.8		17.7	15.8	13.8		12.1	10.2	8.5										
Class 300	51.7	51.7		51.5	50.2	48.6		46.3	42.9	40.3										
Class 600	103.4	103.4		103.0	100.3	97.2		92.7	85.7	80.5										
Class 900	155.1	155.1	-	154.6	150.5	145.8	-	139.0	128.6	120.9										
Class 1500	258.6	258.6		257.6	250.8	243.2		231.8	214.4	201.5										
Class 2500	430.9	430.9		429.4	418.1	405.4		386.2	357.1	335.8										
Cast steel · A 352 LC3 (-101 ... 345 °C)																				
Temp. [°C]	-101	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 150	19.8	19.8		17.7	15.8	13.8		12.1	10.2	8.5										
Class 300	51.7	51.7		51.5	50.2	48.6		46.3	42.9	40.3										
Class 600	103.4	103.4		103.0	100.3	97.2		92.7	85.7	80.5										
Class 900	155.1	155.1	-	154.6	150.5	145.8	-	139.0	128.6	120.9										
Class 1500	258.6	258.6		257.6	250.8	243.2		231.8	214.4	201.5										
Class 2500	430.9	430.9		429.4	418.1	405.4		386.2	357.1	335.8										

Cast stainless steel · A 351 CF8M (–254 ... 700 °C)																				
Temp. [°C]	–254	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 150	19.0	19.0		16.2	14.8	13.7		12.1	10.2		8.4	6.5		4.6	2.8		1.4	1.4	1.4	1.4
Class 300	49.6	49.6		42.2	38.5	35.7		33.4	31.6		30.3	29.4		28.8	28.2		25.0	19.9	12.7	8.4
Class 600	99.3	99.3		84.4	77.0	71.3		66.8	63.2		60.7	58.9		57.7	56.5		49.8	39.8	25.3	16.8
Class 900	148.9	148.9	–	126.6	115.5	107.0	–	100.1	94.9	–	91.0	88.3	–	86.5	84.7	–	74.8	59.7	38.0	25.1
Class 1500	248.2	248.2		211.0	192.5	178.3		166.9	158.1		151.6	147.2		144.2	140.9		124.9	99.5	63.3	41.9
Class 2500	413.7	413.7		351.6	320.8	297.2		278.1	263.5		252.7	245.3		240.4	235.0		208.0	165.9	105.5	69.8

Cast stainless steel · A 351 CF8 (–254 ... 538 °C)																				
Temp. [°C]	–254	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 150	19.0	19.0		15.7	14.2	13.2		12.1	10.2		8.4	6.5		4.6	2.8	1.4				
Class 300	49.6	49.6		40.9	37.0	34.5		32.5	30.9		29.6	28.4		27.4	26.5	24.4				
Class 600	99.3	99.3		81.7	74.0	69.0		65.0	61.8		59.3	56.9		54.8	53.0	48.9				
Class 900	148.9	148.9	–	122.6	111.0	103.4	–	97.5	92.7	–	88.9	85.3	–	82.2	79.5	73.3				
Class 1500	248.2	248.2		204.3	185.0	172.4		162.4	154.6		148.1	142.2		137.0	132.4	122.1				
Class 2500	413.7	413.7		340.4	308.4	287.3		270.7	257.6		246.9	237.0		228.4	220.7	203.6				

Forged stainless steel · A 316 L (–254 ... 538 °C)																				
Temp. [°C]	–254	38	65	100	150	200	232	250	300	345	350	400	425	450	500	538	550	600	650	700
Class 150	19.0	19.0		16.2	14.8	13.7		12.1	10.2		8.4	6.5		4.6	2.8	1.4				
Class 300	49.6	49.6		42.2	38.5	35.7		33.4	31.6		30.3	29.4		28.8	28.2	25.2				
Class 600	99.3	99.3		84.4	77.0	71.3		66.8	63.2		60.7	58.9		57.7	56.5	50.0				
Class 900	148.9	148.9	–	126.6	115.5	107.0	–	100.1	94.9	–	91.0	88.3	–	86.5	84.7	75.2				
Class 1500	248.2	248.2		211.0	192.5	178.3		166.9	158.1		151.6	147.2		144.2	140.9	125.5				
Class 2500	413.7	413.7		351.6	320.8	297.2		278.1	263.5		252.7	245.3		240.4	235.0	208.9				

Table 4b · Permissible operating pressure depending on temperature (°F) · Materials according to ANSI · Pressures in psi

Cast iron · A 126 B (-20 ... 450 °F)																				
Temp. [°F]	-20	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 125	200.1	-	200.1	184.1	160.9	139.2	124.7													
Class 250	500.2		500.2	448.0	371.2	297.2	249.4													
Cast steel · A 216 WCC (-20 ... 797 °F)																				
Temp. [°F]	-20	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 150	287.1	287.1		256.6	229.1	200.1		175.4	147.9		121.8	94.2	79.9							
Class 300	749.6	749.6		746.7	727.9	704.7		671.3	622.0		580.0	503.1	417.6							
Class 600	1499.3	1499.3		1493.5	1454.3	1409.4		1344.1	1242.6		1160.0	1006.3	833.7							
Class 900	2248.9	2248.9	-	2241.7	2182.2	2114.1	-	2015.5	1864.7	-	1741.4	1510.9	1251.3							
Class 1500	3749.7	3749.7		3735.2	3636.6	3526.4		3361.1	3108.8		2901.4	2517.2	2085.1							
Class 2500	6248.0	6248.0		6226.3	6062.4	5878.3		5599.9	5177.9		4835.7	4194.8	3475.6							
Cast steel · A 217 WC6 (-20 ... 932 °F)																				
Temp. [°F]	-20	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 300	749.6	749.6		746.7	720.6	696.0		671.3	622.0		584.3	529.2		488.6	372.6					
Class 600	1499.3	1499.3		1493.5	1442.7	1390.5		1344.1	1242.6		1165.8	1062.8		981.6	746.7					
Class 900	2248.9	2248.9		2238.8	2163.4	2086.5		2015.5	1864.7		1750.1	1592.1		1470.3	1119.4					
Class 1500	3749.7	3749.7		3732.3	3606.1	3477.1		3361.1	3108.8		2915.9	2654.9		2450.5	1864.7					
Class 2500	6248.0	6248.0		6220.5	6010.2	5794.2		5599.9	5177.9		4861.8	4421.0		4086.1	3108.8					
Cast steel · A 217 WC9 (-20 ... 1099 °F)																				
Temp. [°F]	-20	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 150	287.1	287.1		256.6	229.1	200.1		175.4	147.9		121.8	94.2		66.7	40.6			20.3	19.9	
Class 300	749.6	749.6		746.7	729.3	704.7		671.3	622.0		584.3	529.2		488.6	408.9			226.2	100.3	
Class 600	1499.3	1499.3		1493.5	1454.3	1409.4		1344.1	1242.6		1165.8	1062.8		981.6	819.2			453.8	199.5	
Class 900	2248.9	2248.9	-	2241.7	2183.7	2114.1	-	2015.5	1864.7	-	1750.1	1592.1	-	1470.3	1228.1	-		680.0	299.9	-
Class 1500	3748.2	3748.2		3735.2	3636.6	3529.3		3361.1	3108.8		2915.9	2654.9		2450.5	2043.0			1133.9	498.8	
Class 2500	6248.0	6248.0		6226.3	6063.9	5878.3		5599.9	5177.9		4861.8	4421.0		4086.1	3407.5			1889.3	831.9	
Cast steel · A 352 LCC (-51 ... 653 °F)																				
Temp. [°F]	-51	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 150	287.1	287.1		256.6	229.1	200.1		175.4	147.9	123.2										
Class 300	749.6	749.6		746.7	727.9	704.7		671.3	622.0	582.9										
Class 600	1499.3	1499.3		1493.5	1454.3	1409.4		1344.1	1242.6	1167.2										
Class 900	2248.9	2248.9	-	2241.7	2182.2	2114.1	-	2015.5	1864.7	1753.0										
Class 1500	3749.7	3749.7		3735.2	3636.6	3526.4		3361.1	3108.8	2921.7										
Class 2500	6248.0	6248.0		6226.3	6062.4	5878.3		5599.9	5177.9	4869.1										
Cast steel · A 352 LC3 (-150 ... 653 °F)																				
Temp. [°F]	-150	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 150	287.1	287.1		256.6	229.1	200.1		175.4	147.9	123.2										
Class 300	749.6	749.6		746.7	727.9	704.7		671.3	622.0	582.9										
Class 600	1499.3	1499.3		1493.5	1454.3	1409.4		1344.1	1242.6	1167.2										
Class 900	2248.9	2248.9	-	2241.7	2182.2	2114.1	-	2015.5	1864.7	1753.0										
Class 1500	3749.7	3749.7		3735.2	3636.6	3526.4		3361.1	3108.8	2921.7										
Class 2500	6248.0	6248.0		6226.3	6062.4	5878.3		5599.9	5177.9	4869.1										

Cast stainless steel · A 351 CF8M (–425 ... 1292 °F)																				
Temp. [°F]	–425	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 150	275.5	275.5		234.9	214.6	198.6		175.4	147.9		121.8	94.2		66.7	40.6		20.3	20.3	20.3	20.3
Class 300	719.2	719.2		611.9	558.2	517.6		484.3	458.2		439.3	426.3		417.6	408.9		362.5	288.5	184.1	121.8
Class 600	1439.8	1439.8		1223.8	1116.5	1033.8		968.6	916.4		880.1	854.0		836.6	819.2		722.1	577.1	366.8	243.6
Class 900	2159.0	2159.0	–	1835.7	1674.7	1551.5	–	1451.4	1376.0	–	1319.5	1280.3	–	1254.2	1228.1	–	1084.6	865.6	551.0	363.9
Class 1500	3598.9	3598.9		3059.5	2791.2	2585.3		2420.0	2292.4		2198.2	2134.4		2090.9	2043.0		1811.0	1442.7	917.8	607.5
Class 2500	5998.6	5998.6		5098.2	4651.6	4309.4		4032.4	3820.7		3664.1	3556.8		3485.8	3407.5		3016.0	2405.5	1529.7	1012.1

Cast stainless steel · A 351 CF8 (–425... 1000 °F)																				
Temp. [°F]	–425	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 150	275.5	275.5		227.6	205.9	191.4		175.4	147.9		121.8	94.25		66.7	40.6	20.3				
Class 300	719.2	719.2		593.0	536.5	500.2		471.2	448.0		429.2	411.8		397.3	384.2	353.8				
Class 600	1439.8	1439.8		1184.6	1073.0	1000.5		942.5	896.1		859.8	825.0		794.6	768.5	709.0				
Class 900	2159.0	2159.0	–	1777.7	1609.5	1499.3	–	1413.7	1344.1	–	1289.0	1236.8	–	1191.9	1152.7	1062.8				–
Class 1500	3598.9	3598.9		2962.3	2682.5	2499.8		2354.8	2241.7		2147.4	2061.9		1986.5	1919.8	1770.4				
Class 2500	5998.6	5998.6		4935.8	4471.8	4165.8		3925.1	3735.2		3580.0	3436.5		3311.8	3200.1	2952.2				

Forged stainless steel · A 316 L (–425 ... 1000 °F)																				
Temp. [°F]	–425	100	149	212	302	392	450	482	572	653	662	752	797	842	932	1000	1022	1112	1202	1292
Class 150	275.5	275.5		234.9	214.6	198.6		175.4	147.9		121.8	94.2		66.7	40.6	20.3				
Class 300	719.2	719.2		611.9	558.2	517.6		484.3	458.2		439.3	426.3		417.6	408.9	365.4				
Class 600	1439.8	1439.8		1223.8	1116.5	1033.8		968.6	916.4		880.1	854.0		836.6	819.2	725.0				
Class 900	2159.0	2159.0	–	1835.7	1674.7	1551.5	–	1451.4	1376.0	–	1319.5	1280.3	–	1254.2	1228.1	1090.4				–
Class 1500	3598.9	3598.9		3059.5	2791.2	2585.3		2420.0	2292.4		2198.2	2134.4		2090.9	2043.0	1819.7				
Class 2500	5998.6	5998.6		5098.2	4651.6	4309.4		4032.4	3820.7		3664.1	3556.8		3485.8	3407.5	3029.0				



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