

THORSA es una empresa certificada bajo ISO 9001, que cumple con las más exigentes normas internacionales de diseño y construcción.

MATERIALES

IDENTIFICACION	COMPOSICIÓN QUÍMICA												
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	W	Fe	Co
F6	0.15	1.00	1.00	0.040	0.030	0.50	11.50 13.50	--	--	--	--	--	--
304	0.08	1.00	2.00	0.040	0.030	8.00 11.00	18.00 20.00	--	--	--	--	--	--
F310	0.15	1.00	2.00	0.040	0.030	19.00 22.00	24.00 26.00	--	--	--	--	--	--
MONEL	0.30	0.50	2.00	--	0.024	63.00 70.00	--	--	24.50 31.50	--	--	2.50	--
316	0.08	1.00	2.00	0.040	0.030	10.00 14.00	16.00 18.00	2.00 3.00	--	--	--	--	--
Alloy 20	0.07	1.50	1.50	0.040	0.040	27.50 30.50	19.00 22.00	2.00 3.00	--	--	--	--	--
Co-Cr A	0.90	1.50	1.00	--	--	3.00	27.00 31.00	1.50	--	--	3.50 5.50	3.00	52.00 58.50

EQUIVALENCIA ENTRE MATERIALES

UNS	ASTM	BS	DIN	AFNOR	JIS	MARCA REGISTRADA
J03002	A216 WCB	161 -480	GS-CK25	A480 CP-M	SCPH2	--
J12524	A217 C1	240	GS-22Mo4	20MN5-M	SCPH11	--
J12072	A217 WC6	621	GS-17CrMo55	15CD5,05M	SCPH21	--
J21890	A217 WC9	622	GS-12GrMo910	15CD9,10M	SCPH32-CF	--
J42045	A217 C5	625	GS-12CrMo19,5	Z15CD5,05M	SCPH61	--
J82090	A217 C12	629	G-X12CrMo101	--	--	--
J92500	A351 CF3	304 C12	G-X2CrNi189	Z2CN18,10M	SCS19	--
J925800	A351 CF3M	316 C12	G-X2CrNiMo1810	Z2CN18,12M	SCS16	--
J92600	A351 CF8	304 C15	G-X6CrNi189	Z6CN19,10M	SCS13	--
J92710	A351 CF8C	--	--	--	--	--
J92900	A351 CF8M	315-C16	G-XcrNiMo1810	Z6CN18,12M	SCS14	--
N08007	A351 CN7M	332 C11	G-XNiCrMoCuNb2520	Z6NCDU252004M	SCS23	--
N10001	A494 N-12MV	--	NiMo30	--	--	Hastelloy B
N10002	A494 CW-12MW	--	NiMo16GW	--	--	Hastelloy C
N04400	A494 M35-1	NA13	NiCu30Fe	--	--	Monel 400
N06625	A494CW-6MC	--	NiCr22Mo9Nb	--	--	Iconel 625
N08825	--	Na16	NiCr21Mo	--	--	Incoloy 825
S31803	--	--	X2CrNiMoN2253	--	--	SAF 2205
S31254	--	--	X1NiCrMoCuN25206	--	--	254 SMO
S32550	--	--	--	--	--	Ferralium 255
J03003	352 LCB	161-480	GS-CK24	--	SCPL1	--
J31550	A352 LC3	503-LT60	GS-10Ni14	--	SCPL31	--



MATERIALES

IDENTIFICACION	COMPOSICIÓN QUÍMICA												PROPIEDADES MECÁNICAS			
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	W	N	R (Mpa)	S (Mpa)	A (%)	K (%)
A216 WCB	0.30	0.60	0.10	0.040	0.045	0.50	0.50	0.20	0.30	0.03	-	-	485 655	250	22	35
A217 WC1	0.25	0.60	0.50 0.80	0.040	0.045	0.50	0.35	0.45	0.50	-	0.10	-	450 620	240	24	35
A217 WC6	0.05 0.20	0.60	0.50 0.80	0.040	0.045	0.50	1.00	0.65 0.45	0.50	-	0.10	-	485 655	275	20	35
A217 WC9	0.05 0.18	0.60	0.40 0.70	0.040	0.045	0.50	1.50 2.00	0.65 0.90	0.50	-	0.10	-	485 655	275	20	35
A217 C5	0.20	0.75	0.40 0.70	0.040	0.045	0.50	2.75 4.00	1.2 0.45	0.50	-	0.10	-	620 795	415	18	35
A217 C12	0.20	1.00	0.35 0.65	0.040	0.045	0.50	6.50 8.00	0.65 0.90	0.50	-	0.10	-	620 795	415	18	35
A352 LCB	0.30	0.60	1.00	0.040	0.045	0.50	10.00 0.50	1.20 0.20	0.30	0.03	-	-	450 620	240	24	35
A352 LCC	0.25	0.60	1.20	0.040	0.045	0.50	0.50	0.20	0.30	0.03	-	-	485 655	275	22	35
A352 LC2	0.25	0.60	0.50 0.80	0.040	0.045	2.00 3.00	-	-	-	-	-	-	485 655	275	24	35
A352 LC3	0.15	0.60	0.50 0.80	0.040	0.045	4.00 5.00	-	-	-	-	-	-	485 655	275	24	35
A351 CF3	0.03	2.00	1.50	0.040	0.040	8.00 12.00	17.00 21.00	0.50	-	-	-	-	485	205	35	-
A351 CF3M	0.03	1.50	1.50	0.040	0.040	9.00 13.00	17.00 21.00	2.00 3.00	-	-	-	-	485	205	30	-
A351 CF8	0.08	2.00	1.50	0.040	0.040	8.00 11.00	18.00 21.00	0.50	-	-	-	-	485	205	35	-
A351 CF8C	0.08	2.00	1.50	0.040	0.040	9.00 12.00	18.00 21.00	0.50	-	-	-	-	485	205	35	-
A351 CF8M	0.08	1.50	1.50	0.040	0.040	9.00 12.00	18.00 21.00	2.00 3.00	-	-	-	-	485	205	30	-
A351 CN7M	0.07	1.50	1.50	0.040	0.040	27.50 30.50	19.00 22.00	2.00 3.00	-	-	-	-	425	170	35	-
A351 CK3McuN	0.025	1.00	1.20	0.45	0.010	17.50 19.50	19.50 20.50	6.00 7.00	0.50 1.00	-	-	0.18 0.24	550	260	35	-
A105	0.35	0.35	0.60 1.05	0.040	0.050	0.40	0.30	0.12	0.40	0.030	0.02	-	485	250	30	22
A182 F1	0.28	0.15 0.35	0.60 0.90	0.045	0.045	-	-	0.44 0.65	-	-	-	-	485	275	20	30
A182 F1 - CL 1	0.05 0.15	0.50 1.00	0.30 0.60	0.030	0.030	-	1.00 1.50	0.44 0.65	-	-	-	-	415	205	20	45
A182 F22 - CL 1	0.05 0.15	0.50	0.30 0.60	0.040	0.040	-	2.00 2.50	0.87 1.13	-	-	-	-	415	205	20	35
A182 F5	0.15	0.50	0.30 0.60	0.030	0.030	0.50	4.00 6.00	0.44 0.65	-	-	-	-	485	275	20	35
A182 F304	0.08	1.00	2.00	0.040	0.030	8.00 11.00	18.00 20.00	-	-	-	-	-	515	205	30	50
A182 F304L	0.035	1.00	2.00	0.040	0.030	8.00 13.00	18.00 20.00	-	-	-	-	-	485	170	30	50
A182 F316	0.08	1.00	2.00	0.040	0.030	10.00 14.00	16.00 18.00	2.00 3.00	-	-	-	-	515	205	30	50
A182 F316L	0.035	1.00	2.00	0.040	0.030	10.00 15.00	16.00 18.00	2.00 3.00	-	-	-	-	485	170	30	50
A182 F321	0.08	1.00	2.00	0.040	0.030	9.00 12.00	17.00	-	-	-	-	-	515	205	30	50
A350 LF2	0.30	0.15 0.30	0.60 1.35	0.035	0.040	0.40	0.30	0.12	0.40	0.030	0.020	-	655 485	250	22	30

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CORRESPONDENCIA ENTRE MATERIALES

FUNDICIÓN	FORJA	CHAPA	BARRA	TUBO
A216 WCB	A105	A516 gr 70	A105	A106 gr B
A217 WC1	A182 F1	A204 gr A	--	A335 P1
A217 WC6	A182 F11	A387 gr 11	A739 B11	A335 P11
A217 WC9	A182 F22	A387 gr 22	A739 B22	A335 P22
A217 C5	A182 F5	A387 gr 5	A182 F5	A335 P5
A217 C12	A182 F9	A387 gr 9	A182 F9	A395 P9
A217 CA15	A182 F6	A240 tp 410	A479 tp 410	--
A352 LCB	A350 LF2	A516 gr 70	A696 gr C	A333 gr 6
A352 LC2	--	A203 gr B	--	A333 gr 7
A352 LC3	A350 LF3	A203 gr E	--	A333 gr 3
A351 CF3	A182 F304L	A240 tp 304L	A479 tp 304L	A312 tp 304 L
A351 CF3M	A182 F316L	A240 tp 316L	A479 tp 316L	A312 tp 306 L
A351 CF8	A182 A304	A240 tp 304	A479 tp 304	A312 tp 304
A351 CF8C	A182 F347	A240 tp 347	A479 tp 347	A312 tp 347
A351 CF8M	A182 F316	A240 tp 316	A479 tp 316	A312 tp 316

RANGOS DE PRESIÓN Y TEMPERATURA SEGÚN ASME B 16.34 PARA ASTM A 216 WCB

TEMPERATURA Cº	PRESIÓN DE TRABAJO POR LA CLASE STANDARD [BAR]						PRESIÓN DE TRABAJO POR LA CLASE ESPECIAL [BAR]					
	150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 a 38	19.6	51.1	102.1	153.2	255.3	425.5	20.0	51.7	103.4	155.2	258.6	431.0
50	19.2	50.1	100.2	150.2	250.4	417.3	20.0	51.7	103.4	155.2	258.6	431.0
100	17.7	46.4	92.8	139.1	231.9	386.5	20.0	51.7	103.4	155.2	258.6	431.0
150	15.8	45.2	90.5	135.7	226.1	376.9	20.0	51.7	103.4	155.2	258.6	425.0
200	14.0	43.8	87.6	131.5	219.1	365.2	20.0	51.7	103.4	155.2	258.6	421.0
250	12.1	41.7	83.4	125.2	208.6	347.7	20.0	51.7	103.4	155.2	258.6	421.0
300	10.2	38.7	77.5	116.2	193.7	322.8	19.1	49.9	99.7	149.6	249.3	407.0
350	8.4	37.0	73.9	110.9	184.8	308.0	18.4	48.1	96.3	144.4	240.6	392.0
375	7.4	36.5	72.9	109.4	182.3	303.9	18.1	47.2	94.5	141.7	236.2	393.6
400	6.5	34.5	69.0	103.5	172.5	287.5	16.5	43.1	86.3	129.4	215.6	359.4
425	5.6	28.8	57.5	86.3	143.8	239.6	13.8	35.9	71.9	107.8	179.7	299.6
Prueba Hidrostática Cuerpo	29	77	154	230	384	639	30	78	156	233	388	647
Prueba Hidrostática Cierre	22	56	113	169	281	468	22	57	114	171	285	475



RANGOS DE PRESIÓN Y TEMPERATURA SEGÚN ASME B 16.34 PARA ASTM A 352 LCB

TEMPERATURA C°	PRESIÓN DE TRABAJO POR LA CLASE STANDARD [BAR]						PRESIÓN DE TRABAJO POR LA CLASE ESPECIAL [BAR]					
	150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 a 38	18.4	47.9	95.7	143.6	239.4	398.9	18.4	47.9	95.8	143.6	239.4	399.0
50	18.1	47.3	94.6	141.9	236.5	394.2	18.4	47.9	95.8	143.6	239.4	399.0
100	17.3	45.1	90.2	135.3	225.5	375.9	18.4	47.9	95.8	143.6	239.4	399.0
150	15.8	44.0	87.9	131.9	219.8	366.3	18.4	47.9	95.8	143.6	239.4	399.0
200	14.0	42.7	85.4	128.0	213.4	355.6	18.4	47.9	95.8	143.6	239.4	399.0
250	12.1	40.6	81.2	121.8	202.9	338.2	18.4	47.9	95.8	143.6	239.4	398.5
300	10.2	37.7	75.4	113.1	188.5	314.2	18.3	47.9	95.7	143.6	239.3	398.8
350	8.4	36.0	71.9	107.9	179.8	299.7	17.9	46.7	93.3	140.0	239.3	388.8
Prueba Hidrostática Cuerpo	28	72	144	216	359	599	28	72	144	216	359	599
Prueba Hidrostática Cierre	21	53	106	159	264	439	21	53	106	159	264	439

RANGOS DE PRESIÓN Y TEMPERATURA SEGÚN ASME B 16.34 PARA ASTM A 217 WC6

TEMPERATURA C°	PRESIÓN DE TRABAJO POR LA CLASE STANDARD [BAR]						PRESIÓN DE TRABAJO POR LA CLASE ESPECIAL [BAR]					
	150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 a 38	20.0	51.7	103.4	155.1	258.6	431.0	20.0	51.7	103.4	155.2	258.6	431.0
50	19.2	51.1	102.3	153.4	255.7	426.2	20.0	51.7	103.4	155.2	258.6	431.0
100	17.7	48.8	97.5	146.3	243.8	406.4	20.0	51.7	103.4	155.2	258.6	431.0
150	15.8	46.4	92.7	139.1	231.9	386.4	20.0	51.7	103.4	155.2	258.6	431.0
200	14.0	45.5	91.0	136.4	227.4	379.0	20.0	51.7	103.4	155.2	258.6	431.0
250	12.1	44.5	88.9	133.4	222.3	370.6	20.0	51.7	103.4	155.2	258.6	431.0
300	10.2	42.4	84.9	127.3	212.1	353.5	20.0	51.7	103.4	155.2	258.6	431.0
350	8.4	40.2	80.5	120.7	201.2	335.3	18.8	49.2	98.3	147.5	245.8	409.7
375	7.4	38.8	77.6	116.4	194.0	323.4	18.1	47.3	94.7	142.0	236.7	394.5
400	6.5	36.6	73.2	109.8	182.9	304.9	17.5	45.7	91.5	137.2	228.7	381.1
425	5.6	35.1	70.2	105.3	175.5	292.5	16.8	43.9	87.7	131.6	219.3	365.6
450	4.7	33.8	67.6	101.4	169.0	281.7	16.2	42.3	84.5	126.8	211.3	352.1
475	3.7	31.7	63.3	95.0	158.3	263.8	15.2	39.6	79.1	118.7	197.8	329.7
500	2.8	27.8	55.6	83.4	139.0	231.6	13.3	34.7	69.5	104.2	173.7	289.6
525	1.9	20.3	40.5	60.8	101.3	168.9	9.7	25.3	50.7	76.0	126.7	211.1
550	1.3 (I)	12.8	25.5	38.3	63.8	106.4	6.1	16.0	31.9	47.9	79.8	133.0
575	1.3 (I)	8.5	17.0	25.5	42.5	70.8	4.1	10.6	21.2	31.9	53.1	88.5
600	1.3 (I)	5.9	11.8	17.6	29.4	49.0	2.8	7.4	14.7	22.1	36.8	61.3
Prueba Hidrostática Cuerpo	30	78	156	233	388	647	30	78	156	233	388	647
Prueba Hidrostática Cierre	22	57	114	171	285	475	22	57	114	171	285	475

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RANGOS DE PRESIÓN Y TEMPERATURA SEGÚN ASME B 16.34 PARA ASTM A 217 C5

TEMPERATURA C°	PRESIÓN DE TRABAJO POR LA CLASE STANDARD [BAR]						PRESIÓN DE TRABAJO POR LA CLASE ESPECIAL [BAR]					
	150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 a 38	20.0	51.7	103.4	155.2	258.6	431.0	20.0	51.7	103.4	155.2	258.6	431.0
50	19.2	51.7	103.4	155.2	258.6	431.0	20.0	51.7	103.4	155.2	258.6	431.0
100	17.7	51.5	103.1	154.6	257.7	429.5	20.0	51.7	103.4	155.2	258.6	431.0
150	15.8	50.2	100.4	150.6	251.0	418.3	20.0	51.7	103.4	155.2	258.6	431.0
200	14.0	48.8	97.6	146.4	243.9	406.6	20.0	51.7	103.4	155.2	258.6	431.0
250	12.1	46.3	92.7	139.0	231.7	386.1	20.0	51.7	103.4	155.2	258.6	431.0
300	10.2	42.4	84.9	127.3	212.1	353.5	20.0	51.7	103.4	155.2	258.6	431.0
350	8.4	40.2	80.5	120.7	201.2	335.3	19.6	51.1	102.2	153.3	255.4	425.7
375	7.4	38.8	77.6	116.4	194.0	323.4	19.4	50.5	101.0	151.5	252.5	420.8
400	6.5	36.6	73.2	109.8	182.9	304.9	18.1	47.1	94.2	141.3	235.6	392.6
425	5.6	34.5	69.0	103.5	172.5	287.5	16.5	43.1	86.2	129.4	215.6	359.4
450	4.7	30.9	61.8	92.7	154.5	257.6	14.8	38.6	77.3	115.9	193.2	322.0
475	3.7	25.9	51.8	77.7	129.5	215.8	12.4	32.4	64.7	97.1	161.8	269.7
500	2.8	20.3	40.5	60.8	101.3	168.9	9.7	25.3	50.7	76.0	126.7	211.1
525	1.9	15.4	30.8	46.3	77.1	128.5	7.4	19.3	38.5	57.8	96.4	160.6
550	1.3(I)	11.7	23.4	35.0	58.4	97.3	5.6	14.6	29.2	43.8	73.0	121.7
575	1.3(I)	8.8	17.6	26.4	44.1	73.4	4.2	11.0	22.0	33.0	55.1	91.8
600	1.3(I)	6.5	13.1	19.6	32.6	54.4	3.1	8.2	16.3	24.5	40.8	68.0
625	1.3(I)	4.5	9.0	13.5	22.5	37.5	2.2	5.6	11.2	16.9	28.1	46.8
650	1.3(I)	3.0	6.0	9.0	15.0	25.1	1.4	3.8	7.5	11.3	18.8	31.3
P.H. cuerpo	30	78	156	233	388	647	30	78	156	233	388	647
P.H. cierre	22	57	114	171	285	475	22	57	114	171	285	475

(I) Para válvulas extremos para soldar únicamente. Para las bridas los rangos de operación terminan en 525°C

RANGOS DE PRESIÓN Y TEMPERATURA SEGÚN ASME B 16.34 PARA ASTM A 351 CF8

TEMPERATURA C°	PRESIÓN DE TRABAJO POR LA CLASE STANDARD [BAR]						PRESIÓN DE TRABAJO POR LA CLASE ESPECIAL [BAR]					
	150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 a 38	19.0	49.6	99.2	148.9	1248.1	413.5	20.0	51.7	103.4	155.1	258.5	430.8
50	18.4	47.8	95.7	143.5	239.2	398.6	19.3	50.4	100.7	151.1	251.8	419.7
100	15.7	40.9	81.8	122.6	204.4	340.7	17.2	44.9	89.8	134.7	224.6	374.3
150	13.9	36.3	72.7	109.0	181.7	302.8	15.5	40.4	80.8	121.2	202.0	336.7
200	12.6	32.8	65.5	98.3	163.8	273.0	14.0	36.4	72.8	109.2	182.1	303.4
250	11.7	30.5	61.1	91.6	152.7	254.5	13.1	34.1	68.1	102.2	170.3	283.3
300	10.2	29.1	58.1	87.2	145.3	242.1	12.4	32.4	64.8	97.2	162.0	270.0
350	8.4	28.1	56.1	84.2	140.3	233.8	12.0	31.3	62.5	93.8	156.3	260.5
375	7.4	27.8	55.5	83.3	138.8	231.3	11.9	31.0	62.0	92.9	154.9	258.2
400	6.5	27.5	54.9	82.4	137.3	228.9	11.7	30.6	61.3	91.9	153.2	255.4
425	5.6	27.2	54.3	81.5	135.8	226.4	11.6	30.2	60.4	90.5	150.9	251.5
450	4.7	26.9	53.7	80.6	134.3	223.9	11.5	29.9	59.8	89.7	149.5	249.2
475	3.7	26.6	53.1	79.7	132.8	221.4	11.4	29.6	59.3	88.9	148.2	246.9
500	2.8	26.1	52.1	78.2	130.3	217.2	11.1	29.0	58.0	87.0	144.9	241.6
525	1.9	23.9	47.8	71.6	119.4	199.0	10.8	28.2	56.4	84.6	141.0	234.9
550	1.3(I)	21.8	43.6	65.4	109.1	181.8	10.5	27.3	54.5	81.8	136.3	227.2
575	1.3(I)	20.1	40.1	60.2	100.4	167.3	9.6	25.1	50.2	75.3	125.5	209.1
600	1.3(I)	16.7	33.4	50.1	83.6	139.3	8.0	20.9	41.8	61.7	104.5	174.1
625	1.3(I)	13.1	26.2	39.2	65.4	109.0	6.3	16.4	32.7	49.1	81.8	136.3
650	1.3(I)	10.5	21.0	31.6	52.6	87.6	5.0	13.1	26.3	39.4	65.7	109.6
375	1.3(I)	7.8	15.5	23.3	38.8	64.6	3.7	9.7	19.4	29.1	48.4	80.7
700	1.3(I)	6.0	12.0	17.9	29.9	49.8	2.9	7.5	14.9	22.4	37.4	62.3
725	1.3(I)	4.6	9.3	13.9	23.1	38.5	2.2	5.8	11.6	17.3	28.9	48.2
750	1.3(I)	3.7	7.3	11.0	18.3	30.4	1.7	4.6	9.1	13.7	22.8	38.0
775	1.3(I)	2.8	5.6	8.4	14.0	23.3	1.3	3.5	7.0	10.5	17.5	29.2
800	1.0(I)	2.1	4.1	6.2	10.3	17.1	1.0	2.6	5.1	7.7	12.8	21.4
P.H. cuerpo	29	74	149	224	373	621	30	78	156	233	388	647
P.H. cierre	21	55	110	164	273	456	22	57	114	171	285	475

(I) Para válvulas extremos para soldar únicamente. Para las bridas los rangos de operación terminan en 525°C



RANGOS DE PRESIÓN Y TEMPERATURA SEGÚN ASME B 16.34 PARA ASTM A 351 CF8M

TEMPERATURA C°	PRESIÓN DE TRABAJO POR LA CLASE STANDARD [BAR]						PRESIÓN DE TRABAJO POR LA CLASE ESPECIAL [BAR]					
	150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 a 38	19.0	49.6	99.3	148.9	248.1	413.6	19.8	51.7	103.4	155.1	258.5	430.9
50	18.4	48.1	96.3	144.4	240.6	401.0	19.4	50.7	101.4	152.1	253.4	422.4
100	16.2	42.2	84.4	126.6	211.0	351.7	17.8	46.4	92.8	139.2	232.0	386.6
150	14.8	38.5	77.0	115.5	192.5	320.9	16.1	41.9	83.9	125.8	209.6	349.4
200	13.7	35.7	71.3	107.0	178.4	297.3	15.2	39.6	79.2	118.8	198.0	330.1
250	12.1	33.4	66.8	100.2	166.9	278.2	14.2	37.1	74.3	111.4	185.6	309.4
300	10.2	31.6	63.3	94.9	158.1	263.6	13.5	35.3	70.5	105.8	176.3	293.9
350	8.4	30.4	60.8	91.3	152.1	253.8	13.0	33.8	67.7	101.5	169.2	282.1
375	7.4	29.7	59.4	89.1	148.5	247.5	12.7	33.1	66.3	99.4	165.7	276.2
400	6.5	29.1	58.2	87.3	145.6	242.6	12.5	32.5	65.0	97.5	162.5	270.8
425	5.6	28.7	57.3	86.0	143.3	238.9	12.3	32.0	64.0	96.0	160.0	266.6
450	4.7	28.1	56.2	84.2	140.4	234.0	12.0	31.3	62.7	94.0	156.7	261.2
475	3.7	27.4	54.7	82.1	136.8	228.0	11.7	30.5	61.1	91.6	152.7	254.5
500	2.8	26.8	53.7	80.5	134.1	223.6	11.5	29.9	59.9	89.8	149.7	249.5
525	1.9	25.8	51.6	77.4	129.0	214.9	11.2	29.3	58.7	88.0	146.7	244.5
550	1.3(1)	25.0	49.9	74.9	124.8	208.0	11.1	29.0	58.0	87.0	145.0	241.7
575	1.3(1)	24.1	48.2	72.3	120.5	200.8	11.0	28.6	57.2	85.8	142.9	238.2
600	1.3(1)	21.4	42.9	64.3	107.2	178.6	10.3	26.8	53.6	80.4	134.0	223.3
625	1.3(1)	18.3	36.5	54.8	91.3	152.1	8.1	22.8	45.6	68.5	114.1	190.1
650	1.3(1)	14.1	28.2	42.4	70.6	117.1	6.8	17.7	35.3	53.0	88.3	147.1
375	1.3(1)	12.6	25.3	37.9	63.2	105.3	6.1	15.8	31.6	46.9	78.9	131.6
700	1.3(1)	9.9	19.9	29.8	49.7	82.9	4.8	12.4	24.9	37.3	62.2	103.6
725	1.3(1)	7.7	15.4	23.1	38.5	64.2	3.7	9.6	19.3	28.9	48.2	80.3
750	1.3(1)	5.9	11.0	17.6	29.4	49.0	2.8	7.4	14.7	22.1	36.8	61.3
775	1.3(1)	4.6	9.1	13.7	22.8	38.0	2.2	5.7	11.4	17.1	28.5	47.5
800	1.0(1)	3.5	7.0	10.5	17.5	29.2	1.7	4.4	8.7	13.1	21.9	36.5
Prueba Hidrostática Cuerpo	29	74	149	224	373	621	30	78	156	233	388	647
Prueba Hidrostática Cierre	21	55	110	164	273	456	22	57	114	171	285	475

(1) Para válvulas extremos para soldar únicamente. Para las bridas los rangos de operación terminan en 525°C

RANGOS DE TEMPERATURA PARA LOS DISTINTOS MATERIALES DE CIERRE

MATERIAL	RANGO DE TEMPERATURA
410 SS	-29 a 538 °C
316 SS	-267 a 815 °C
316 L SS	-267 a 815 °C
STELLITE ® N°6	-267 a 815 °C
VITON A ®	-40 a 204 °C
VITON B ®	-20 a 200 °C
BUNA N	-57 a 121 °C
NEOPRENE	-40 a 121 °C
TEFLON ®	-129 a 232 °C