TECHNICAL BULLETIN

TEMPERATURE / PRESSURE RATINGS FOR FIKE BOLTED TYPE BURSTING DISC HOLDERS

The following tables may be used as a reference to determine the appropriate ANSI flange rating for a given operating temperature and pressure for both ASME B16.5 and EN 1092-1.

MAXIMUM NON-SHOCK SERVICE PRESSURE RATINGS

Service Temperatures Up to °F		ASME B16.5 (2017) Max Working Pressures by Classes (PSI)					
	Material [1]	150	300	600	900	1500	2500
−20 to 100	Carbon Steel	285	740	1480	2220	3705	6170
	316 SST	275	720	1440	2160	3600	6000
	304 SST	275	720	1440	2160	3600	6000
200	Carbon Steel	260	680	1360	2035	3395	5655
	316 SST	235	620	1240	1860	3095	5160
	304 SST	230	600	1200	1800	3000	5000
300	Carbon Steel	230	655	1310	1965	3270	5450
	316 SST	215	560	1120	1680	2795	4660
	304 SST	205	540	1075	1615	2690	4480
400	Carbon Steel	200	635	1265	1900	3170	5280
	316 SST	195	515	1025	1540	2570	4280
	304 SST	190	495	995	1490	2485	4140
500	Carbon Steel	170	605	1205	1810	3015	5025
	316 SST	170	480	955	1435	2390	3980
	304 SST	170	465	930	1395	2330	3880
600	Carbon Steel	140	570	1135	1705	2840	4730
	316 SST	140	450	900	1355	2255	3760
	304 SST	140	440	885	1325	2210	3680
650	Carbon Steel	125	550	1100	1650	2745	4575
	316 SST	125	440	885	1325	2210	3680
	304 SST	125	430	865	1295	2160	3600
700	Carbon Steel	110	530	1060	1590	2655	4425
	316 SST	110	435	870	1305	2170	3620
	304 SST	110	420	845	1265	2110	3520

Service Temperatures Up to °F		ASME B16.5 (2017) Max Working Pressures by Classes (PSI)					
	Material [1]	**150**	**300**	**600**	**900**	**1500**	**2500**
750	Carbon Steel	95	505	1015	1520	2535	4230
	316 SST	95	425	855	1280	2135	3560
	304 SST	95	415	825	1240	2065	3440
800	Carbon Steel	80	410	825	1235	2055	3430
	316 SST	80	420	845	1265	2110	3520
	304 SST	80	405	810	1215	2030	3380
850	Carbon Steel	65	320	640	955	1595	2655
	316 SST	65	420	835	1255	2090	3480
	304 SST	65	395	790	1190	1980	3300
900	Carbon Steel	50	230	460	690	1150	1915
	316 SST	50	415	830	1245	2075	3460
	304 SST	50	390	780	1165	1945	3240
950	Carbon Steel	35	135	275	410	685	1145
	316 SST	35	385	775	1160	1930	3220
	304 SST	35	380	765	1145	1910	3180
1000	Carbon Steel	20	85	170	255	430	715
	316 SST	20	365	725	1090	1820	3030
	304 SST	20	355	710	1065	1770	2950

(1) Materials shown above:

- Carbon Steel per ASTM A105, A350-LF2 from Table II-2-1.1 Pressure–Temperature Ratings for Group 1.1 Materials
- 316 SST per ASTM A182, A240 from Table II-2-2.2 Pressure–Temperature Ratings for Group 2.2 Materials
- 304 SST per ASTM A182, A240 from Table II-2-2.1 Pressure–Temperature Ratings for Group 2.1 Materials

Consult ASME B16.5 for other materials.

Service Temperatures Up to °C		ASME B16.5 (2017) Max Working Pressures by Classes (BAR)					
	Material [1]	150	300	600	900	1500	2500
−29 to 38	Carbon Steel	19.6	51.1	102.1	153.2	255.3	425.5
	316 SST	19.0	49.6	99.3	148.9	248.2	413.7
	304 SST	19.0	49.6	99.3	148.9	248.2	413.7
50	Carbon Steel	19.2	50.1	100.2	150.4	250.6	417.7
	316 SST	18.4	48.1	96.2	144.3	240.6	400.9
	304 SST	18.3	47.8	95.6	143.5	239.1	398.5
100	Carbon Steel	17.7	46.6	93.2	139.8	233.0	388.3
	316 SST	16.2	42.2	84.4	126.6	211.0	351.6
	304 SST	15.7	40.9	81.7	122.6	204.3	340.4
150	Carbon Steel	15.8	45.1	90.2	135.2	225.4	375.6
	316 SST	14.8	38.5	77.0	115.5	192.5	320.8
	304 SST	14.2	37.0	74.0	111.0	185.0	308.4
200	Carbon Steel	13.8	43.8	87.6	131.4	219.0	365.0
	316 SST	13.7	35.7	71.3	107.0	178.3	297.2
	304 SST	13.2	34.5	69.0	103.4	172.4	287.3
250	Carbon Steel	12.1	41.9	83.9	125.8	209.7	349.5
	316 SST	12.1	33.4	66.8	100.1	166.9	278.1
	304 SST	12.1	32.5	65.0	97.5	162.4	270.7
300	Carbon Steel	10.2	39.8	79.6	119.5	199.1	331.8
	316 SST	10.2	31.6	63.2	94.9	158.1	263.5
	304 SST	10.2	30.9	61.8	92.7	154.6	257.6
325	Carbon Steel	9.3	38.7	77.4	116.1	193.6	322.6
	316 SST	9.3	30.9	61.8	92.7	154.4	257.4
	304 SST	9.3	30.2	60.4	90.7	151.1	251.9
350	Carbon Steel	8.4	37.6	75.1	112.7	187.8	313.0
	316 SST	8.4	30.3	60.7	91.0	151.6	252.7
	304 SST	8.4	29.6	59.3	88.9	148.1	246.9
375	Carbon Steel	7.4	36.4	72.7	109.1	181.8	303.1
	316 SST	7.4	29.9	59.8	89.6	149.4	249.0
	304 SST	7.4	29.0	58.1	87.1	145.2	241.9

Service Temperatures Up to °C		ASME B16.5 (2017) Max Working Pressures by Classes (BAR)					
	Material (1)	150	300	600	900	1500	2500
400	Carbon Steel	6.5	34.7	69.4	104.2	173.6	289.3
	316 SST	6.5	29.4	58.9	88.3	147.2	245.3
	304 SST	6.5	28.4	56.9	85.3	142.2	237.0
425	Carbon Steel	5.5	28.8	57.5	86.3	143.8	239.7
	316 SST	5.5	29.1	58.3	87.4	145.7	242.9
	304 SST	5.5	28.0	56.0	84.0	140.0	233.3
450	Carbon Steel	4.6	23.0	46.0	69.0	115.0	191.7
	316 SST	4.6	28.8	57.7	86.5	144.2	240.4
	304 SST	4.6	27.4	54.8	82.2	137.0	228.4
475	Carbon Steel	3.7	17.4	34.9	52.3	87.2	145.3
	316 SST	3.7	28.7	57.3	86.0	143.4	238.9
	304 SST	3.7	26.9	53.9	80.8	134.7	224.5
500	Carbon Steel	2.8	11.8	23.5	35.3	58.8	97.9
	316 SST	2.8	28.2	56.5	84.7	140.9	235.0
	304 SST	2.8	26.5	53.0	79.5	132.4	220.7
538	Carbon Steel	1.4	5.9	11.8	17.7	29.5	49.2
	316 SST	1.4	25.2	50.0	75.2	125.5	208.9
	304 SST	1.4	24.4	48.9	73.3	122.1	203.6

(1) Materials shown in above:

- Carbon Steel per ASTM A105, A350-LF2 from Table 2-1.1 Pressure–Temperature Ratings for Group 1.1 Materials
- 316 SST per ASTM A182, A240 from Table 2-2.2 Pressure–Temperature Ratings for Group 2.2 Materials
- 304 SST per ASTM A182, A240 from Table 2-2.1 Pressure–Temperature Ratings for Group 2.1 Materials

Consult ASME B16.5 for other materials.

Service temperatures			FLANGES EN 1092-1 (2007) Maximum Pressure Rating (BARG)										
°C / °F	Material / Group[1]		PN6	PN10	PN16	PN25	PN40	PN63	PN100	PN160	PN250	PN320	PN400
<50 / 122	1.0460 [2]	3E0	6.0	10.0	16.0	25.0	40.0	63.0	100.0	160.0	250.0	320.0	400.0
	1.4401	14E0	6.0	10.0	16.0	25.0	40.0	63.0	100.0	160.0	250.0	320.0	400.0
	1.4404	13E0	6.0	10.0	16.0	25.0	40.0	63.0	100.0	160.0	250.0	320.0	400.0
100 / 212	1.0460 [2]	3E0	5.5	9.2	14.8	23.2	37.1	58.5	92.8	148.5	232.1	297.1	371.4
	1.4401	14E0	6.0	10.0	16.0	25.0	40.0	63.0	100.0	160.0	250.0	320.0	400.0
	1.4404	13E0	5.6	9.4	15.1	23.6	37.9	59.7	94.7	151.6	236.9	303.2	379.0
150 / 302	1.0460 [2]	3E0	5.2	8.8	14.0	22.0	35.2	55.5	88.0	140.9	220.2	281.9	352.3
	1.4401	14E0	5.4	9.0	14.5	22.7	36.3	57.3	90.9	145.5	227.3	291.0	363.8
	1.4404	13E0	5.1	8.6	13.7	21.5	34.4	54.3	86.1	137.9	215.4	275.8	344.7
200 / 392	1.0460 [2]	3E0	5.0	8.3	13.3	20.8	33.3	52.5	83.3	133.3	208.3	266.6	333.3
	1.4401	14E0	5.0	8.4	13.4	21.0	33.7	53.1	84.2	134.8	210.7	269.7	337.1
	1.4404	13E0	4.7	7.9	12.7	19.8	31.8	50.1	79.5	127.2	198.8	254.4	318.0
250 / 482	1.0460 [2]	3E0	4.5	7.6	12.1	19.0	30.4	48.0	76.1	121.9	190.4	243.8	304.7
	1.4401	14E0	4.7	7.9	12.7	19.8	31.8	50.1	79.5	127.2	198.8	254.4	318.0
	1.4404	13E0	4.4	7.4	11.9	18.6	29.9	47.1	74.7	119.6	186.9	239.2	299.0
300 / 572	1.0460 [2]	3E0	4.1	6.9	11.0	17.2	27.6	43.5	69.0	110.4	172.6	220.9	276.1
	1.4401	14E0	4.4	7.4	11.8	18.5	29.7	46.8	74.2	118.8	185.7	237.7	297.1
	1.4404	13E0	4.1	6.9	11.0	17.2	27.6	43.5	69.0	110.4	172.6	220.9	276.1
350 / 662	1.0460 [2]	3E0	3.8	6.4	10.2	16.0	25.7	40.5	64.2	102.8	160.7	205.7	257.1
	1.4401	14E0	4.2	7.1	11.4	17.8	28.5	45.0	71.4	114.2	178.5	228.5	285.7
	1.4404	13E0	3.9	6.6	10.5	16.5	26.4	41.7	66.1	105.9	165.4	211.8	264.7
400 / 752	1.0460 [2]	3E0	3.5	5.9	9.5	14.8	23.8	37.5	59.5	95.2	148.8	190.4	238.0
	1.4401	14E0	4.1	6.8	10.9	17.1	27.4	43.2	68.5	109.7	171.4	219.4	274.2
	1.4404	13E0	3.8	6.4	10.2	16.0	25.7	40.5	64.2	102.8	160.7	205.7	257.1
450 / 842 [3]	1.0460 [2]	3E0	*1.9*	*3.2*	*5.2*	*8.2*	*13.1*	*20.7*	*32.8*	*52.5*	*82.1*	*105.1*	*131.4*
	1.4401	14E0	4.0	6.7	10.7	16.8	26.9	42.4	67.3	107.8	168.4	215.6	269.5
	1.4404	13E0	3.7	6.2	10.0	15.6	25.0	39.4	62.6	100.1	156.5	200.3	250.4
500 / 932	-	-											
	1.4401	14E0	3.9	6.6	10.5	16.5	26.4	41.7	66.1	105.9	165.4	211.8	264.7
	1.4404	13E0	3.6	6.0	9.7	15.2	24.3	38.4	60.9	97.5	152.3	195.0	243.8
550 / 1022	-	-											
	1.4401	14E0	3.9	6.5	10.4	16.3	26.0	41.1	65.2	104.3	163.0	208.7	260.9
	-	-											
560 / 1040	-	-											
	1.4401	14E0	3.8	6.4	10.3	16.0	25.7	40.5	64.3	103.0	160.9	206.0	257.5
	-	-											

Service temperatures			FLANGES EN 1092-1 (2007) Maximum Pressure Rating (BARG)										
°C / °F	Material / Group(1)		PN6	PN10	PN16	PN25	PN40	PN63	PN100	PN160	PN250	PN320	PN400
570 / 1058	-	-											
	1.4401	14E0	3.8	6.3	10.1	15.8	25.4	40.0	63.5	101.6	158.8	203.3	254.1
	-	-											
580 / 1076	-	-											
	1.4401	14E0	3.7	6.2	10.0	15.6	25.0	39.5	62.7	100.3	156.7	200.6	250.8
	-	-											
590 / 1094 (3)	-	-											
	1.4401	14E0	*3.7*	*6.1*	*9.9*	*15.4*	*24.7*	*39.0*	*61.9*	*99.0*	*154.7*	*198.0*	*247.6*
	-	-											
600 / 1112 (3)	-	-											
	1.4401	14E0	*3.3*	*5.6*	*8.9*	*14.0*	*22.4*	*35.4*	*56.1*	*89.9*	*140.4*	*179.8*	*224.7*
	-	-											

(1) Materials shown above:

- Werkstoff number 1.0460, Group 3E0 Carbon Steel
- Werkstoff number 1.4401, Group 14E0 is similar to 316 SST
- Werkstoff number 1.4404, Group 13E0 is similar to 316L SST

Consult EN 1092-1 for other materials.

(2) EN 1092-1 material 1.0460 (Carbon Steel) flange pressure rating values are based on **flange thicknesses (V_R) ≤50mm**, which represents flange diameters beginning with the smallest. Flanges of larger diameters move into a thickness (V_R) >50mm, which varies by size and pressure rating class, and results in lower flange pressure rating values.

The material group 3E0 is assigned to ASME SA 105 Carbon Steel and 1.0460 in EN 1092-1 Table D.1. Material group 8E2 is assigned to ASME SA 350 LF2 Class 1 & 2 Carbon Steel in EN 1092-1 Table D.1 and includes 1.0487 in EN 1092-1 Table G.1.1-1. Material group 8E2 flange pressure rating values vary significantly from 3E0 with temperature and flange thickness.

(3) 100 000 hours creep considered for values in italic.

Service Temperatures			FLANGES EN 1092-1 (2007) Maximum Pressure Rating (PSI)										
°C / °F	Material / Group[1]		PN6	PN10	PN16	PN25	PN40	PN63	PN100	PN160	PN250	PN320	PN400
<50 / 122	1.0460 [2]	3E0	87	145	232	363	580	914	1450	2321	3626	4641	5802
	1.4401	14E0	87	145	232	363	580	914	1450	2321	3626	4641	5802
	1.4404	13E0	87	145	232	363	580	914	1450	2321	3626	4641	5802
100 / 212	1.0460 [2]	3E0	80	133	215	336	538	848	1346	2154	3366	4309	5387
	1.4401	14E0	87	145	232	363	580	914	1450	2321	3626	4641	5802
	1.4404	13E0	81	136	219	342	550	866	1374	2199	3436	4398	5497
150 / 302	1.0460 [2]	3E0	75	128	203	319	511	805	1276	2044	3194	4089	5110
	1.4401	14E0	78	131	210	329	526	831	1318	2110	3297	4221	5276
	1.4404	13E0	74	125	199	312	499	788	1249	2000	3124	4000	4999
200 / 392	1.0460 [2]	3E0	73	120	193	302	483	761	1208	1933	3021	3867	4834
	1.4401	14E0	73	122	194	305	489	770	1221	1955	3056	3912	4889
	1.4404	13E0	68	115	184	287	461	727	1153	1845	2883	3690	4612
250 / 482	1.0460 [2]	3E0	65	110	175	276	441	696	1104	1768	2762	3536	4419
	1.4401	14E0	68	115	184	287	461	727	1153	1845	2883	3690	4612
	1.4404	13E0	64	107	173	270	434	683	1083	1735	2711	3469	4337
300 / 572	1.0460 [2]	3E0	59	100	160	249	400	631	1001	1601	2503	3204	4005
	1.4401	14E0	64	107	171	268	431	679	1076	1723	2693	3448	4309
	1.4404	13E0	59	100	160	249	400	631	1001	1601	2503	3204	4005
350 / 662	1.0460 [2]	3E0	55	93	148	232	373	587	931	1491	2331	2983	3729
	1.4401	14E0	61	103	165	258	413	653	1036	1656	2589	3314	4144
	1.4404	13E0	57	96	152	239	383	605	959	1536	2399	3072	3839
400 / 752	1.0460 [2]	3E0	51	86	138	215	345	544	863	1381	2158	2762	3452
	1.4401	14E0	59	99	158	248	397	627	994	1591	2486	3182	3977
	1.4404	13E0	55	93	148	232	373	587	931	1491	2331	2983	3729
450 / 842 [3]	1.0460 [2]	3E0	*28*	*46*	*75*	*119*	*190*	*300*	*476*	*761*	*1191*	*1524*	*1906*
	1.4401	14E0	58	97	155	244	390	615	976	1564	2442	3127	3909
	1.4404	13E0	54	90	145	226	363	571	908	1452	2270	2905	3632
500 / 932	-	-											
	1.4401	14E0	57	96	152	239	383	605	959	1536	2399	3072	3839
	1.4404	13E0	52	87	141	220	352	557	883	1414	2209	2828	3536
550 / 1022	-	-											
	1.4401	14E0	57	94	151	236	377	596	946	1513	2364	3027	3784
	-	-											
560 / 1040	-	-											
	1.4401	14E0	55	93	149	232	373	587	933	1494	2334	2988	3735
	-	-											

Service Temperatures			FLANGES EN 1092-1 (2007) Maximum Pressure Rating (PSI)										
°C / °F	Material / Group[1]		PN6	PN10	PN16	PN25	PN40	PN63	PN100	PN160	PN250	PN320	PN400
570 / 1058	-	-											
	1.4401	14E0	55	91	146	229	368	580	921	1474	2303	2949	3685
	-	-											
580 / 1076	-	-											
	1.4401	14E0	54	90	145	226	363	573	909	1455	2273	2909	3638
	-	-											
590 / 1094 [3]	-	-											
	1.4401	14E0	*54*	*88*	*144*	*223*	*358*	*566*	*898*	*1436*	*2244*	*2872*	*3591*
	-	-											
600 / 1112 [3]	-	-											
	1.4401	14E0	*48*	*81*	*129*	*203*	*325*	*513*	*814*	*1304*	*2036*	*2608*	*3259*
	-	-											

(1) Materials shown above:

- Werkstoff number 1.0460, Group 3E0 Carbon Steel
- Werkstoff number 1.4401, Group 14E0 is similar to 316 SST
- Werkstoff number 1.4404, Group 13E0 is similar to 316L SST

Consult EN 1092-1 for other materials.

(2) EN 1092-1 material 1.0460 (Carbon Steel) flange pressure rating values are based on **flange thicknesses (V_R) ≤50mm**, which represents flange diameters beginning with the smallest. Flanges of larger diameters move into a thickness (V_R) >50mm, which varies by size and pressure rating class, and results in lower flange pressure rating values.

The material group 3E0 is assigned to ASME SA 105 Carbon Steel and 1.0460 in EN 1092-1 Table D.1. Material group 8E2 is assigned to ASME SA 350 LF2 Class 1 & 2 Carbon Steel in EN 1092-1 Table D.1 and includes 1.0487 in EN 1092-1 Table G.1.1-1. Material group 8E2 flange pressure rating values vary significantly from 3E0 with temperature and flange thickness.

(3) 100 000 hours creep considered for values in italic.