



ADDENDA

**ANSI/ASHRAE Addendum f to
ANSI/ASHRAE Standard 15-2016**

Safety Standard for Refrigeration Systems

Approved by the ASHRAE Standards Committee on January 28, 2017; by the ASHRAE Tech Council on February 1, 2017; and by the American National Standards Institute on February 2, 2017.

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FOREWORD

This addendum deletes Section 8.12(d); moves Table 9.7.9.3 to Normative Appendix D, “Allowable Equivalent Length of Discharge Piping,” and renames it Table D-2; and adds additional data for Piping Nominal Diameter NPS.DN and Tubing Diameter O.D. (based on Type L copper) to Table D-2.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strike-through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum f to Standard 15-2016

Modify Section 8.12 as shown (I-P and SI).

8.12 Machinery Room, Special Requirements. In cases specified in the rules of Section 7.4, a refrigerating machinery room shall meet the following special requirements in addition to those in Section 8.11:

- a. There shall be no flame-producing device or continuously operating hot surface over 800°F (427°C) permanently installed in the room.
- b. Doors communicating with the building shall be approved, self-closing, tight-fitting fire doors.

- c. Walls, floor, and ceiling shall be tight and of noncombustible construction. Walls, floor, and ceiling separating the refrigerating machinery room from other occupied spaces shall be of at least one-hour fire-resistant construction.
- d. ~~The refrigerating machinery room shall have a door that opens directly to the outdoors or through a vestibule equipped with self-closing, tight-fitting doors.~~
- e.d. Exterior openings, if present, shall not be under any fire escape or any open stairway.
- f.e. All pipes piercing the interior walls, ceiling, or floor of such rooms shall be tightly sealed to the walls, ceiling, or floor through which they pass.
- g.f. When refrigerants of Groups A2, A3, B2, and B3 are used, the machinery room shall conform to Class 1, Division 2, of the *National Electrical Code*.⁵ When refrigerant Groups A1 and B1 are used, the machinery room is not required to meet Class 1, Division 2, of the *National Electrical Code*.

Exception: When ammonia is used, the requirements of Class 1, Division 2, of the *National Electrical Code* shall not apply, providing the requirements of Section 8.12(h) are met.

Modify Section 9.7.9.3 as shown (I-P and SI).

9.7.9.3 The maximum length of the discharge piping installed on the outlet of pressure-relief devices and fusible plugs discharging to the atmosphere shall be determined by the method in Normative Appendix D. See Table 9.7.9.3 D-2 for the flow capacity of various equivalent lengths of discharge piping for conventional relief valves.

Rename and modify Table 9.7.9.3 as shown (I-P and SI).

Table 9.7.9.3 Table D-2 Table Pressure Relief Valve Discharge Line Capacity (lb/min of air) of Various Discharge Line Lengths

Set Pressure, psig	Length, ft	Nominal Pipe Size, NPS in./DN mm)										Nominal Pipe Size, NPS in./DN mm)													
		0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)	0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)		
5	2	2.8	5.8	10.7	21.3	31.4	57.8	88.8	148.0	278.9	469	704	15	15	1.9	3.9	7.3	14.8	22.1	41.7	65.3	111.6	218.0	379	583
5	3	2.3	4.8	9.0	18.1	26.8	49.9	77.3	130.4	249.8	426	647	15	20	1.6	3.4	6.4	13.0	19.4	36.8	57.9	99.4	195.8	344	532
5	4	2.0	4.2	7.9	16.0	23.7	44.5	69.4	117.8	228.2	393	601	15	25	1.5	3.1	5.7	11.7	17.5	33.3	52.5	90.5	179.3	316	492
5	5	1.8	3.8	7.1	14.4	21.5	40.6	63.5	108.3	211.4	367	564	15	30	1.3	2.8	5.3	10.7	16.1	30.7	48.4	83.6	166.3	295	460
5	6	1.7	3.5	6.6	13.3	19.8	37.5	58.9	100.8	197.8	346	533	15	40	1.2	2.4	4.6	9.4	14.0	26.8	42.4	73.5	147.1	262	411
5	8	1.5	3.0	5.7	11.6	17.4	33.1	52.0	89.5	177.0	312	484	15	60	1.0	2.0	3.8	7.7	11.6	22.1	35.1	61.0	122.7	220	347
5	10	1.3	2.7	5.1	10.5	15.7	29.9	47.1	81.3	161.7	286	446	15	100	0.7	1.5	2.9	6.0	9.0	17.3	27.5	47.9	96.8	175	276
5	15	1.1	2.2	4.2	8.6	12.9	24.7	39.2	67.9	135.9	243	380	15	160	0.6	1.2	2.3	4.7	7.1	13.7	21.8	38.1	77.3	140	222
5	20	0.9	1.9	3.7	7.5	11.3	21.6	34.2	59.4	119.5	214	337	15	250	0.5	1.0	1.9	3.8	5.7	11.0	17.5	30.6	62.3	113	179
5	25	0.8	1.7	3.3	6.7	10.1	19.4	30.8	53.5	107.9	194	306	25	2	5.7	11.3	20.0	37.6	53.5	93.2	137.5	219.2	390.5	628	918
5	30	0.8	1.6	3.0	6.2	9.3	17.8	28.2	49.1	99.1	179	282	25	3	4.9	9.9	17.8	34.0	48.8	86.5	128.8	207.5	374.4	608	893
5	40	0.7	1.4	2.6	5.3	8.0	15.4	24.5	42.8	86.5	156	247	25	4	4.4	8.9	16.2	31.3	45.3	81.0	121.6	197.6	360.1	589	869
5	60	0.5	1.1	2.1	4.4	6.6	12.6	20.1	35.1	71.2	129	205	25	5	4.0	8.2	14.9	29.1	42.3	76.4	115.5	188.9	347.3	572	848
5	100	0.4	0.9	1.7	3.4	5.1	9.8	15.6	27.3	55.6	101	160	25	6	3.7	7.6	13.9	27.4	39.9	72.6	110.2	181.3	335.8	556	828
5	160	0.3	0.7	1.3	2.7	4.0	7.8	12.4	21.7	44.1	80	127	25	8	3.3	6.7	12.4	24.6	36.1	66.4	101.5	168.5	315.9	529	791
5	250	0.3	0.6	1.0	2.1	3.2	6.2	9.9	17.4	35.3	64	102	25	10	3.0	6.1	11.3	22.6	33.3	61.5	94.6	158.1	299.1	505	759
15	2	4.6	9.3	16.7	32.0	46.0	81.6	121.8	196.5	355.2	577	849	25	15	2.5	5.1	9.5	19.1	28.3	52.9	82.1	138.7	266.6	457	694
15	3	3.9	8.0	15.5	28.3	41.0	74.0	111.6	182.3	334.5	550	815	25	20	2.1	4.5	8.3	16.8	25.0	47.1	73.5	125.0	242.9	420	643
15	4	3.5	7.1	13.0	25.6	37.4	68.1	103.6	170.8	317.1	526	784	25	25	1.9	4.0	7.5	15.2	22.7	42.9	67.1	114.7	224.5	391	602
15	5	3.1	6.5	11.9	23.6	34.6	63.5	97.1	161.2	302.2	506	757	25	30	1.8	3.7	6.9	14.0	20.9	39.6	62.2	106.6	209.8	367	568
15	6	2.9	6.0	11.0	22.0	32.3	59.7	91.7	153.1	289.2	487	732	25	40	1.5	3.2	6.0	12.2	18.3	34.8	54.9	94.5	187.3	331	514
15	8	2.5	5.2	9.7	19.5	28.9	53.8	83.2	140.0	267.5	455	689	25	60	1.3	2.6	4.9	10.1	15.1	28.9	45.7	79.1	158.0	281	440
15	10	2.3	4.7	8.8	17.8	26.3	49.3	76.7	129.7	250.1	429	683	25	100	1.0	2.0	3.8	7.9	11.8	22.7	36.0	62.5	125.8	226	356

SI Conversions: kPa = psig × 6.895; mm = in. × 25.4; kg/s = lb/min × 0.007559; m = ft × 0.3048

Table 9.7.9.3 Table D-2 Table Pressure Relief Valve Discharge Line Capacity (lb/min of air) of Various Discharge Line Lengths (Continued)

Set Pressure, psig	Nominal Pipe Size, NPS in./DN mm)	Nominal Pipe Size, NPS in./DN mm)						Nominal Pipe Size, NPS in./DN mm)						Nominal Pipe Size, NPS in./DN mm)						Nominal Pipe Size, NPS in./DN mm)					
		0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)	0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)		
25	160	0.8	1.6	3.1	6.3	9.4	18.1	28.7	50.0	101.1	183	289	75	15	4.5	9.2	16.9	33.2	48.4	88.0	133.7	220	407	675	1004
25	250	0.6	1.3	2.4	5.0	7.6	14.5	32.1	40.3	81.7	148	235	75	20	4.0	8.2	15.1	29.9	43.8	80.5	123.1	204	383	641	960
50	2	7.6	14.7	25.4	46.5	65.3	111.7	162.8	256	451	718	1045	75	25	3.6	7.4	13.7	27.4	40.3	74.6	114.8	192	363	612	921
50	3	6.8	13.2	23.2	43.4	61.4	106.3	156.1	248	439	704	1027	75	30	3.3	6.8	12.7	25.4	37.6	69.8	107.9	181	345	587	887
50	4	6.1	12.2	21.6	40.8	58.1	101.6	150.2	240	429	691	1011	75	40	2.9	6.0	11.2	22.5	33.4	62.5	97.2	164	317	544	828
50	5	5.7	11.3	20.2	38.6	55.2	97.4	144.9	233	419	678	996	75	60	2.4	5.0	9.3	16.8	28.0	52.9	82.8	141	276	481	739
50	6	5.3	10.6	19.1	36.7	52.8	93.8	140.1	226	410	666	981	75	100	1.9	3.9	7.3	14.8	22.2	42.2	66.5	115	227	401	623
50	8	4.7	9.5	17.3	33.6	48.7	87.5	131.8	215	393	644	953	75	160	1.5	3.1	5.8	11.9	17.8	34.0	53.8	93	186	332	520
50	10	4.3	8.7	15.9	31.2	45.5	82.4	124.8	205	378	624	927	75	250	1.2	2.5	4.7	9.6	14.4	27.5	43.6	76	153	274	432
50	15	3.6	7.4	13.6	26.9	39.6	72.7	113.3	185	347	582	872	100	2	10.3	19.4	32.9	59.3	82.2	138.8	200.8	314	547	868	1258
50	20	3.1	6.5	12.0	24.0	35.5	65.8	101.4	170	323	547	825	100	3	9.4	17.9	30.9	56.4	78.9	134.4	195.4	307	539	857	1246
50	25	2.8	5.9	10.9	21.9	32.4	60.5	93.8	158	303	517	785	100	4	8.7	16.8	29.2	54.0	75.9	130.3	190.4	301	531	847	1234
50	30	2.6	5.4	10.0	20.3	30.1	56.3	87.6	148	286	492	750	100	5	8.1	15.8	27.8	51.8	73.2	126.6	185.9	295	523	837	1222
50	40	2.3	4.7	8.8	17.8	26.6	50.1	78.3	133	260	451	692	100	6	7.6	15.0	26.5	49.9	70.8	123.2	181.7	289	515	828	1210
50	60	1.9	3.9	7.3	14.8	22.1	42.0	66.0	113	224	393	608	100	8	6.9	13.7	24.5	46.6	66.6	117.2	174.0	279	501	810	1188
50	100	1.4	3.0	5.7	11.6	17.4	33.3	52.6	91	182	323	504	100	10	6.3	12.7	22.8	43.9	63.1	112.0	167.2	270	488	793	1167
50	160	1.1	2.4	4.5	9.3	13.9	26.7	42.3	73	148	265	416	100	15	5.4	10.9	19.9	38.7	56.3	101.4	153.1	250	459	756	1120
50	250	0.9	1.9	3.6	7.5	11.2	21.5	34.2	59	120	217	342	100	20	4.7	9.7	17.8	35.1	51.3	93.4	142.1	234	435	723	1077
75	2	9.1	17.2	29.4	53.3	74.3	126.0	182.7	286	501	795	1154	100	25	4.3	8.8	16.3	32.3	47.4	87.0	133.2	221	415	694	1039
75	3	8.2	15.8	27.3	50.4	70.7	121.2	176.9	279	491	783	1140	100	30	4.0	8.2	15.1	30.1	44.3	81.8	125.8	210	397	668	1005
75	4	7.5	14.6	25.7	47.8	67.6	116.9	171.6	272	482	772	1127	100	40	3.5	7.2	13.3	26.7	39.5	73.7	114.0	192	367	625	946
75	5	7.0	13.7	24.3	45.7	64.8	113.1	166.8	266	474	762	1114	100	60	2.9	5.9	11.1	22.4	33.4	62.7	97.9	166	323	558	853
75	6	6.5	13.0	23.1	43.7	62.4	109.6	162.3	260	466	751	1101	100	100	2.2	4.7	8.7	17.8	26.6	50.4	79.2	136	268	471	728
75	8	5.9	11.8	21.1	40.6	58.3	103.4	154.4	249	450	732	1077	100	160	1.8	3.7	7.0	14.3	21.4	40.7	64.3	111	222	393	614
75	10	5.4	10.8	19.6	38.0	54.9	98.2	147.5	240	437	714	1054	100	250	1.4	3.0	5.6	11.5	17.3	33.0	52.3	91	182	326	513

SI Conversions: kPa = psig × 6.895; mm = in. × 25.4; kg/s = lb/min × 0.007559; m = ft × 0.3048

Table 9.7.9.3 Table D-2 Table Pressure Relief Valve Discharge Line Capacity (lb/min of air) of Various Discharge Line Lengths (Continued)

Set Pressure, psig	Length, ft	Nominal Pipe Size, NPS in./DN mm)										Nominal Pipe Size, NPS in./DN mm)													
		0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)	0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)		
150	2	12.5	23.3	39.2	70.1	96.8	162.7	234.5	366	636	1006	1457	200	25	6.8	13.9	24.3	49.5	72.0	130.1	196.6	322	592	967	1447
150	3	11.6	21.8	37.2	67.4	93.7	158.5	229.6	360	628	996	1446	200	30	6.3	12.9	23.6	46.5	67.9	123.4	187.6	309	572	949	1412
150	4	10.8	20.6	35.5	64.9	90.8	154.7	225.1	354	621	987	1435	200	40	5.6	11.4	21.1	41.8	61.4	112.8	172.6	287	538	901	1349
150	5	10.2	19.6	34.0	62.8	88.1	151.2	220.7	348	613	979	1425	200	60	4.6	9.6	17.7	35.5	52.5	97.7	151.1	254	484	823	1245
150	6	9.6	18.7	32.7	60.8	85.7	147.8	216.6	343	606	970	1414	200	100	3.6	7.5	14.1	28.5	42.4	79.9	124.7	212	413	714	1094
150	8	8.8	17.3	30.5	57.3	81.4	141.8	209.1	333	593	954	1394	200	160	2.9	6.0	11.3	23.0	34.4	65.2	102.5	176	347	610	944
150	10	8.1	16.1	28.7	54.4	77.7	136.5	202.3	324	581	938	1375	200	250	2.3	4.9	9.1	18.6	27.9	53.3	84.1	145	290	514	802
150	15	6.9	14.0	25.2	48.7	70.3	125.4	187.8	304	553	902	1330	250	2	16.5	30.4	50.7	89.9	123.8	207.0	297.7	463	803	1268	1836
150	20	6.2	12.5	22.8	44.5	64.6	116.6	176.0	288	529	870	1289	250	3	15.5	28.8	48.6	87.2	120.7	203.0	293.0	457	796	1260	1826
150	25	5.6	11.4	21.0	41.2	60.2	109.4	166.2	274	507	841	1251	250	4	14.6	27.5	46.9	84.7	117.8	199.3	288.5	452	789	1251	1815
150	30	5.2	10.6	19.5	38.6	56.5	103.4	157.9	261	488	815	1217	250	5	13.8	26.4	45.2	82.4	115.1	195.7	284.2	446	782	1243	1805
150	40	4.5	9.4	17.3	34.5	50.8	93.9	144.5	241	456	769	1156	250	6	13.2	25.4	43.8	80.3	112.5	192.3	280.2	441	775	1234	1795
150	60	3.8	7.8	14.5	29.2	43.3	80.8	125.4	212	407	696	1058	250	8	12.2	23.6	41.3	76.6	107.9	186.1	272.5	431	762	1219	1776
150	100	2.9	6.1	11.5	23.3	34.7	65.6	102.7	175	343	597	918	250	10	11.3	22.2	39.1	73.3	103.9	180.4	265.4	422	750	1203	1757
150	160	2.3	4.9	9.2	18.7	28.0	53.3	84.0	145	286	505	785	250	15	9.8	19.6	35.0	66.7	95.4	168.2	249.8	401	721	1167	1713
150	250	1.9	3.9	7.4	15.2	22.7	43.4	68.6	119	238	423	662	250	20	8.8	17.7	31.9	61.5	88.7	158.1	236.7	383	696	1135	1672
200	2	14.6	26.9	45.0	80.2	110.6	185.2	266.6	415	721	1139	1649	250	25	8.0	16.3	29.5	57.5	83.3	149.7	225.5	368	673	1104	1634
200	3	13.6	25.4	43.1	77.5	107.4	181.2	261.9	409	713	1130	1638	250	30	7.4	15.1	27.6	54.1	78.7	142.5	215.7	354	652	1076	1598
200	4	12.7	24.2	41.3	75.1	104.6	177.4	257.4	404	706	1121	1628	250	40	6.5	13.4	24.7	48.8	71.5	130.7	199.5	330	616	1026	1533
200	5	12.0	23.1	39.8	72.8	101.9	173.9	253.1	398	699	1113	1618	250	60	5.4	11.3	20.9	41.7	61.5	114.0	175.6	294	558	944	1423
200	6	11.5	22.1	38.4	70.8	99.4	170.6	249.1	393	692	1105	1608	250	100	4.3	8.9	16.6	33.6	49.9	93.7	145.9	248	479	826	1261
200	8	10.5	20.5	36.0	67.2	95.0	164.5	241.5	383	679	1089	1588	250	160	3.4	7.1	13.4	27.2	40.6	76.8	120.5	207	406	710	1096
200	10	9.7	19.2	34.0	64.1	91.1	159.0	234.6	374	667	1073	1570	250	250	2.7	5.8	10.8	22.1	33.0	62.9	99.2	171	340	602	937
200	15	8.4	16.8	30.2	57.9	83.2	147.3	219.6	354	639	1038	1525	300	2	18.4	33.7	56.1	99.4	136.7	228.3	328	510	884	1395	2019
200	20	7.5	15.2	27.5	53.2	77.0	137.9	207.2	337	614	1005	1485	300	3	17.3	32.1	54.0	96.0	133.5	224.2	323	504	877	1386	2009

SI Conversions: kPa = psig × 6.895; mm = in. × 25.4; kg/s = lb/min × 0.007559; m = ft × 0.3048

Table 9.7.9.3 Table D-2 Table Pressure Relief Valve Discharge Line Capacity (lb/min of air) of Various Discharge Line Lengths (Continued)

Set Pressure, psig	Length, ft	Nominal Pipe Size, NPS in./DN mm)										Nominal Pipe Size, NPS in./DN mm)													
		0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)	0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)	4 (100)	5 (125)	6 (150)		
300	4	16.4	30.8	52.2	94.1	130.6	220.4	319	498	869	1378	1998	350	25	10.3	20.8	37.6	72.8	105	187	280	455	827	1347	1992
300	5	15.6	29.6	50.5	91.7	127.8	216.8	314	493	862	1369	1988	350	30	9.6	19.4	35.3	68.8	99	178	269	440	804	1317	1954
300	6	14.9	28.5	49.0	89.6	125.2	213.4	310	488	856	1361	1978	350	40	8.5	17.3	31.7	62.4	91	163	250	413	764	1262	1885
300	8	13.8	26.6	46.3	85.6	120.4	206.9	302	478	843	1345	1959	350	60	7.1	14.6	26.9	53.7	79	145	222	372	699	1170	1765
300	10	12.8	25.1	44.1	82.2	116.2	201.0	295	468	830	1330	1940	350	100	5.6	11.6	21.6	43.5	64	120	186	316	607	1034	1582
300	15	11.2	22.2	39.6	75.1	107.2	188.3	279	447	801	1293	1895	350	160	4.5	9.3	17.4	35.4	52	99	155	266	519	897	1390
300	20	10.0	20.1	36.2	69.6	100.1	177.7	265	428	775	1260	1853	350	250	3.6	7.5	14.1	28.8	43	81	128	222	438	766	1200
300	25	9.2	18.6	33.6	65.2	94.2	168.7	253	412	751	1229	1814	400	2	22.0	40.2	66.6	117.7	161.7	269.6	387	601	1041	1642	2376
300	30	8.5	17.3	31.5	61.5	89.2	160.9	243	397	729	1200	1777	400	3	20.9	38.5	64.5	114.8	158.4	265.5	382	595	1034	1633	2366
300	40	7.5	15.4	28.2	55.6	81.3	148.2	225	372	691	1148	1710	400	4	19.8	37.0	62.5	112.2	155.3	261.5	378	589	1026	1625	2355
300	60	6.3	12.9	23.9	47.7	70.2	129.7	199	333	639	1061	1595	400	5	18.9	35.7	60.7	109.7	152.4	257.7	373	584	1019	1616	2345
300	100	4.9	10.3	19.1	38.5	57.2	107.1	167	282	544	934	1422	400	6	18.2	34.5	59.1	107.4	149.6	254.1	369	578	1012	1608	2335
300	160	3.9	8.2	15.4	31.3	46.6	88.1	138	236	463	807	1243	400	8	16.9	32.5	56.1	103.1	144.5	247.3	360	568	999	1591	2315
300	250	3.2	6.6	12.5	25.4	38.0	72.3	114	196	389	687	1068	400	10	15.8	30.7	53.6	99.3	139.9	241.0	353	558	986	1575	2295
350	2	20.3	37.0	61.4	108.6	149	249	358	556	963	1519	2199	400	15	13.9	27.4	48.5	91.5	130.1	227.1	335	535	955	1537	2249
350	3	19.1	35.3	59.3	105.8	146	245	353	550	956	1510	2189	400	20	12.5	24.9	44.6	85.2	122.0	215.4	320	515	927	1502	2205
350	4	18.1	33.9	57.4	103.3	143	241	348	544	949	1502	2178	400	25	11.4	23.0	41.6	80.1	115.3	205.4	307	497	902	1469	2164
350	5	17.3	32.7	55.7	100.9	140	237	344	539	941	1493	2168	400	30	10.6	21.5	39.0	75.8	109.6	196.6	296	481	878	1438	2125
350	6	16.6	31.5	54.1	98.6	137	234	340	534	935	1484	2158	400	40	9.4	19.2	35.1	68.9	100.4	182.0	276	453	836	1382	2052
350	8	15.3	29.6	51.3	94.5	132	227	331	523	921	1468	2139	400	60	7.9	16.2	26.9	59.4	87.2	160.4	246	409	767	1286	1927
350	10	14.4	28.0	48.9	90.9	128	221	324	514	908	1452	2120	400	100	6.2	12.9	24.0	48.3	71.5	133.4	207	349	669	1143	1734
350	15	12.5	24.8	44.1	83.5	119	208	307	492	879	1414	2075	400	160	5.0	10.4	19.4	39.3	58.5	110.3	173	294	574	996	1529
350	20	11.3	22.6	40.5	77.6	111	196	293	473	852	1379	2032	400	250	4.0	8.4	15.7	32.0	47.9	90.9	143	246	468	854	1324

SI Conversions: kPa = psig × 6.895; mm = in. × 25.4; kg/s = lb/min × 0.007559; m = ft × 0.3048

Table 9.7.9.3 Table D-2 Table Pressure Relief Valve Discharge Line Capacity (lb/min of air) of Various Discharge Line Lengths (Continued)

Set Pressure, psig	Length, ft	Nominal Pipe Size, NPS in. (DN mm)						Nominal Pipe Size, NPS in. (DN mm)			
		0.5 (15)	0.75 (20)	1 (25)	1.25 (32)	1.5 (40)	2 (50)	2.5 (65)	3 (80)		
450	5	20.6	38.7	65	118	164	277	401	=		
450	10	17.2	33.4	58	108	151	260	380	=		
450	15	15.2	29.9	53	99	141	245	362	=		
450	20	13.7	27.3	48.7	93	132	233	346	=		
450	25	12.6	25.2	44.9	87	125	222	333	=		
450	30	11.7	23.6	42.7	83	119	213	320	=		
450	40	10.4	21.1	38.5	76	109	198	299	493		
450	60	8.7	17.8	32.8	65	95	175	267	446		
450	100	6.9	14.2	26.4	53	78	146	226	382		
450	160	5.5	11.4	21.4	43.3	64	120	189	323		
450	250	4.4	9.2	17.3	35.3	52	99	156	269		
500	5	22.2	41.6	70.5	127	176	297	430	=		
500	10	18.7	36.1	62.8	116	162	279	408	=		
500	15	16.5	32.4	57.1	107	152	264	389	=		
500	20	14.9	29.6	52.8	100	142	251	373	=		
500	25	13.7	27.4	49.3	94	134	240	359	=		
500	30	12.7	25.7	46.4	88	129	230	346	=		
Set Pressure, psig	Length, ft	Type L Copper Tubing Outer Diameter (OD), in.						Type L Copper Tubing Outer Diameter (OD), in.			
		3/8	1/2	5/8	3/4	7/8	1-1/8	1-3/8	1-5/8	Set Pressure, psig	Length, ft
100	5	2.1	4.3	7.4	11.7	16.9	30.5	48.1	69.7	100	25
100	10	=	3.4	6.1	9.8	14.3	26.6	42.8	63.0	100	30
100	15	=	2.9	5.3	8.6	12.7	24.0	39	58	100	40
100	20	=	2.6	4.7	7.7	11.5	22.0	36	54	100	60
										100	100

SI Conversions: kPa = psig × 6.895; mm = in. × 25.4; kg/s = lb/min × 0.007559; m = ft × 0.3048

Table 9.7.9.3 Table D-2 Table Pressure Relief Valve Discharge Line Capacity (lb/min of air) of Various Discharge Line Lengths (Continued)

Set Pressure, psig	Length, ft	Type L Copper Tubing Outer Diameter (OD), in.						Set Pressure, psig	Length, ft	Type L Copper Tubing Outer Diameter (OD), in.									
		3/8	1/2	5/8	3/4	7/8	1-1/8	1-3/8	1-5/8	3/8	1/2	5/8	3/4	7/8	1-1/8	1-3/8	1-5/8		
100	160	==	==	3.1	4.7	9.4	16.0	24.8		250	15	==	5.3	9.3	14.9	21.8	40.1	64.2	94.1
100	250	==	==	==	3.8	7.6	13.0	20.2		250	20	==	4.8	8.5	13.7	20.2	37.5	60.6	89.4
150	5	==	5.3	9	14.3	20.5	36.5	57.2	82.6	250	25	==	4.4	7.8	12.7	18.9	35.4	57.5	85.4
150	10	==	4.4	7.6	12.2	17.8	32.6	52.0	76.1	250	30	==	4.1	7.3	12.0	17.7	33.6	54.9	81.8
150	15	==	3.8	6.7	10.9	16.0	29.7	48.0	73.9	250	40	==	3.4	6.6	10.8	16.1	30.6	50.5	75.9
150	20	==	3.4	6.1	9.9	14.6	27.5	44.8	73.9	250	60	==	==	6.0	9.1	13.7	26.5	44.2	67.1
150	25	==	3.1	5.6	9.1	13.6	25.7	42.2	63.1	250	100	==	==	4.4	7.3	11.1	21.7	36.5	55.9
150	30	==	2.9	5.2	8.5	12.7	24.2	40	60.1	250	160	==	==	3.5	5.9	9.0	17.7	30.1	46.4
150	40	==	4.6	7.6	11.3	21.9	36.4	55.1		250	250	==	==	4.8	7.3	14.5	24.7	38.2	
150	60	==	3.8	6.4	9.6	18.7	31.5	48.0		300	5	4.0	8.0	13.5	21	29.8	52.6	81.8	117.1
150	100	==	3.0	5.1	7.7	15.1	25.6	39.5		300	10	==	6.8	11.7	18.6	26.8	48.4	76.3	110.7
150	160	==	==	==	4.1	6.2	12.2	20.9	32.3	300	15	==	6.0	10.5	16.9	24.6	45.0	71.8	105.0
150	250	==	==	==	3.3	5.0	10.0	17.0	26.5	300	20	==	5.4	9.6	15.5	22.8	32.2	68.0	100.1
200	5	3.1	6.2	10.7	16.6	23.7	42.1	65.8	94.7	300	25	==	5.0	9.0	14.5	21.4	39.9	64.7	95.8
200	10	==	5.2	9.1	14.4	20.8	38.1	60.5	88.2	300	30	==	4.7	8.4	13.6	20.2	38.0	62.0	92.1
200	15	==	4.5	8	13.0	19.0	35.1	56.3	82.8	300	40	==	4.2	7.5	12.3	18.3	34.8	57.2	85.7
200	20	==	4.1	7.3	11.9	17.5	32.6	52.9	78.3	300	60	==	3.5	6.3	10.5	15.7	30.3	50.3	76.1
200	25	==	3.6	6.7	11.0	16.2	30.7	50.0	74.5	300	100	==	==	5.1	8.4	12.7	24.8	41.7	63.8
200	30	==	3.5	6.3	10.2	15.3	29.1	47.6	71.2	300	160	==	==	4.1	6.8	9.3	20.3	34.5	53.1
200	40	==	3.1	5.6	9.2	13.8	26.4	43.6	65.7	300	250	==	==	3.3	5.5	8.4	16.6	28.4	43.9
200	60	==	4.7	7.8	11.7	22.7	40.5	57.8		350	5	4.4	8.9	14.9	23.1	32.8	57.7	89.6	128.5
200	100	==	3.7	6.2	9.4	18.4	31.2	47.9		350	10	3.6	7.6	13.1	20.6	29.6	53.3	83.9	121.1
200	160	==	3.0	5.0	7.6	13.6	25.5	39.5		350	15	3.2	6.7	11.8	18.7	27.3	49.8	83.9	115.6
200	250	==	==	4.1	6.2	12.2	20.9	32.5		350	20	==	6.1	10.8	17.3	25.4	46.8	75.2	110.1
250	5	3.5	7.1	12.1	18.8	26.8	47.5	73.9	106.3	350	25	==	5.6	10.0	16.2	23.8	44.4	71.8	106
250	10	==	6.0	10.4	16.5	23.9	43.3	68.5	99.6	350	30	==	5.2	9.4	15.2	22.5	42.3	68.9	102

SI Conversions: kPa = psig × 6.895; mm = in. × 25.4; kg/s = lb/min × 0.007559; m = ft × 0.3048

Table 9.7.9.3 Table D-2 Table Pressure Relief Valve Discharge Line Capacity (lb/min of air) of Various Discharge Line Lengths (Continued)

Set Pressure psig	Length ft	Type L Copper Tubing Outer Diameter (OD), in.					Set Pressure psig	Length ft	Type L Copper Tubing Outer Diameter (OD), in.										
		3/8	1/2	5/8	3/4	7/8			3/8	1/2	5/8	3/4	7/8	1-1/8	1-3/8	1-5/8			
350	40	—	4.7	8.4	13.8	20.5	38.8	66.1	95.2	450	160	—	3.1	5.7	9.4	14.3	28.0	47.4	73
350	60	—	3.9	7.1	11.8	17.7	34.0	56.2	84.9	450	250	—	—	4.6	7.7	11.7	23.0	39.2	59
350	100	—	3.1	5.7	9.5	14.3	28.0	46.9	71.6	500	5	5.7	11.3	18.9	29.1	41.3	72.4	112.1	161
350	160	—	—	4.5	7.9	11.7	22.9	38.8	59.7	500	10	4.8	9.8	16.8	26.3	37.8	67.5	105.9	153
350	250	—	—	3.7	6.2	9.5	18.8	32.0	49.5	500	15	4.2	8.8	15.2	24.2	35.1	63.5	100.6	146
400	5	4.8	9.7	16.3	25.1	35.7	62.7	97.2	139.3	500	20	3.8	8.0	14.1	22.5	32.8	60.2	96.1	141
400	10	4.0	8.3	14.3	22.5	32.4	58.1	91.4	132.1	500	25	3.5	7.4	13.1	21.1	31.0	57.3	92.1	135
400	15	3.5	7.4	12.9	20.6	29.9	54.4	86.5	126.0	500	30	3.2	6.9	12.3	20.0	29.4	54.8	88.6	130
400	20	—	6.7	11.9	19.1	27.9	51.4	82.3	120.7	500	40	—	6.2	11.1	18.1	26.9	50.7	82.4	123
400	25	—	6.2	11.9	19.1	27.9	51.4	82.3	120.7	500	60	—	5.2	9.5	15.6	23.3	44.5	73.6	111
400	30	—	5.8	10.4	16.8	24.9	46.5	75.6	111.8	500	100	—	4.2	7.6	12.7	19.1	37.0	61.9	94
400	40	—	5.2	9.3	15.2	22.7	42.8	70.1	104.6	500	160	—	3.4	6.2	10.3	15.6	30.5	51.5	79
400	60	—	4.4	7.9	13.1	19.6	39.9	62.1	93.6	500	250	—	—	5	8.4	12.7	25.1	42.7	65
400	100	—	3.5	6.4	10.6	15.9	31.0	52.0	79.2	550	5	6.1	12.1	20.2	31.1	44.1	77	119	171
400	160	—	—	5.1	8.8	13.0	26.2	43.1	66.3	550	10	5.1	10.5	18.0	28.2	40.4	72	113	163
400	250	—	—	4.2	7	10.6	20.9	35.6	55.0	550	15	4.5	9.4	16.4	26.0	37.5	68	107	156
450	5	5.2	10.5	17.6	27.1	38.5	67.5	104.7	150	550	20	4.1	8.6	15.1	24.2	35.3	64	103	150
450	10	4.4	9.1	15.6	24.4	35.1	62.8	98.7	143	550	25	3.7	8.0	14.1	22.8	33.3	61	98	145
450	15	3.8	8.1	14.1	22.4	32.5	59.0	93.6	136	550	30	3.5	7.5	13.3	21.5	31.6	59	95	140
450	20	3.5	7.4	13.0	20.8	30.4	55.8	89.2	130	550	40	3.1	6.5	12.0	19.6	28.9	54	89	132
450	25	3.2	6.8	12.1	19.5	28.6	53.1	85.4	125	550	60	—	5.6	10.3	16.9	25.1	47.9	79	119
450	30	—	6.4	11.4	18.4	27.2	50.7	82.1	120	550	100	—	4.5	8.3	13.5	20.5	40.0	67	101
450	40	—	5.2	10.2	16.7	24.8	46.8	76.4	114	550	160	—	3.6	6.7	11.2	17.4	33.1	56	85
450	60	—	4.8	8.7	14.3	21.5	41.1	67.9	102	550	250	—	3.0	5.4	9.1	13.8	27.2	46.2	71
450	100	—	3.8	7.0	11.6	17.5	34.0	56.9	87										

SI Conversions: kPa = psig × 6.895; mm = in. × 25.4; kg/s = lb/min × 0.007559; m = ft × 0.3048

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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About ASHRAE

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration, and sustainability. Through research, Standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today.

For more information or to become a member of ASHRAE, visit www.ashrae.org.

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IMPORTANT NOTICES ABOUT THIS STANDARD

To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

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