Pressure Valves
Series 867-42T-20 and 867-43T

30.93

867-42T-20

867-43T

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ½ – 16"/DN40 – DN400

Function

- **867-42T-20:** Pilot Operated, Pressure Reducing Check Valve
- **867-43T:** Pilot Operated, Safety Pressure Relief Valve

Maximum Operating Temperature by Material

- **Standard:** NR - Fabric Reinforced Polyisoprene 122°F/50°C
- **Optional:** Fabric Reinforced Nitrile (Buna-N) 176°F/80°C

End Connections

- Grooved (OGS)
- Flanged[1,2]
- Threaded[2]

Application

- For hydraulic control applications in fire protection systems designed to NFPA 13 and NFPA 14
- Series 867-43T Safety Pressure Relief Valves are not designed to be used as circulation relief valves. For circulation relief valves, use the Series 867-3HC publication 30.98 and the Series 867-7UF publication 30.95

[1] Valves 10"/DN250 – 16"/DN400 are only available with flanged end connections.
[2] By special order only.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

2.0 CERTIFICATION/LISTINGS

Available Sizes, Pressure Ratings and Agency Approvals[3]

Product Config.	Nominal Size Range inches DN	FM Approval							UL Listed						
		Grooved			Class 300		Class 150		Grooved			Class 300 Flange		Class 150 Flange	
		Rating psi bar	Standard Pressure Pilot Range psi bar	High Pressure Pilot Range psi bar	Rating psi bar	Pilot Range psi bar	Rating psi bar	Pilot Range psi bar	Rating psi bar	Standard Pressure Pilot Range psi bar	High Pressure Pilot Range psi bar	Rating psi bar	Pilot Range psi bar	Rating psi bar	Pilot Range psi bar
867-42T-20	1½ – 2 DN40 – DN50	365 25	30 – 235 2 – 16	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	400 27.6	60 – 220 4 – 15	–	400 27.6	60 – 220 4 – 15	250 17	60 – 220 4 – 15
	2½	365 25	30 – 235 2 – 16	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	400 27.6	60 – 220 4 – 15	–	400 27.6	60 – 220 4 – 15	250 17	60 – 220 4 – 15
	3 – 8 DN80 – DN200	365 25	30 – 235 2 – 16	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	365 25	60 – 175 4 – 12	–	365 25	60 – 175 4 – 12	250 17	60 – 175 4 – 12
	10[4] DN250	–	–	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	–	–	–	365 25	60 – 175 4 – 12	250 17	60 – 175 4 – 12
	12 – 16[4] DN300 – DN400	–	–	–	300 20	30 – 235 2 – 16	250 17	30 – 235 2– 16	–	–	–	300 20	60 – 175 4 – 12	250 17	60 – 175 4 – 12
867-43T	1½ – 2 DN40 – DN50	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16	365 25	60 – 235 4 – 16	125 – 365 9 – 25	–	–	–	–
	2½	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16	365 25	60 – 235 4 – 16	125 – 365 9 – 25	–	–	–	–
	3 – 8 DN80 – DN200	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 300 9 – 20	235 16	60 – 235 4 – 16	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16
	10[4] DN250	–	–	–	300 20	125 – 300 9 – 20	235 16	60 – 235 4 – 16	–	–	–	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16

[3] Selecting optional valve body materials may change listing or approval. Contact Victaulic for details.

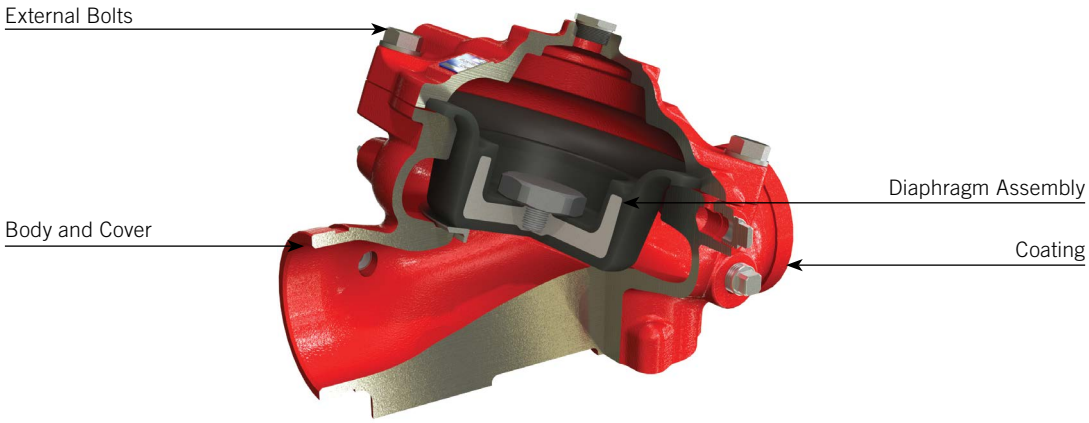
[4] Valves 10"/DN250 are only available with flanged end connections.

NOTES

- Max recommended pressure differential: 175 psi/12 Bar when normal inlet operation pressure is below 330 psi/23 Bar
- Max recommended pressure differential: 200 psi/14 Bar when normal inlet operation pressure is above 330 psi/23 Bar

3.0 SPECIFICATIONS - MATERIAL

Series 867-42T-20 and 867-43T Body Style



Body and Cover: (specify choice)[5,6]

- ☐ Standard: Ductile Iron ASTM A536 Grade 65-45-12
- ☐ Optional: Cast Steel ASTM A216 Grade WCB
- ☐ Optional: Stainless Steel 316 ASTM A351 Grade CF8M
- ☐ Optional: Nickel Aluminum Bronze ASTM B148, Grade C95800
- ☐ Optional: Super Duplex ASTM A890 Grade 5A
- ☐ Optional: Hastelloy[7] ASTM B336 Grade C276
- ☐ Optional: Titanium ASTM B367 Grade C2/C3

Diaphragm Assembly: (specify choice)

- ☐ Standard: NR - Fabric Reinforced Polyisoprene
- ☐ Optional: Fabric Reinforced Nitrile (Buna-N)

Coating: (specify choice)

- ☐ Standard: Electrostatic Powder Coating Polyester
- ☐ Optional: High Build Epoxy Fusion-Bonded with UV Protection, Anti-Corrosion

External Bolts: (specify choice)

- ☐ Standard: Stainless steel 316 ASTM A276

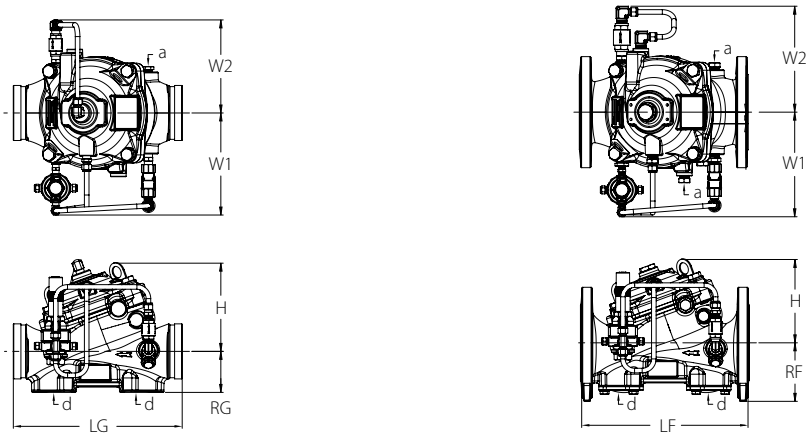
5 Selecting optional valve body materials may change listing or approval. Contact Victaulic for details.

6 Flanged end connection available in all materials, grooved and threaded available in ductile iron only.

7 Hastelloy is a registered trademark of Haynes International.

4.0 DIMENSIONS

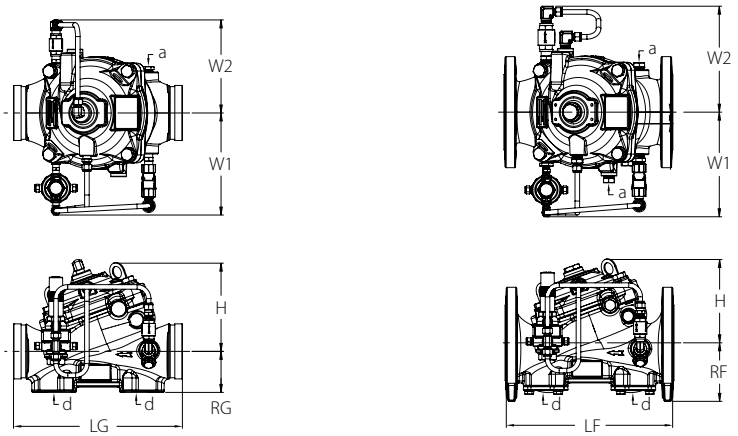
Series 867-42T-20 and 867-43T



Size		Flanged Class 150						Flange Class 300					
Nominal inches DN	**Actual Outside Diameter** inches mm	**LF** inches mm	**RF** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** inches mm	**LF** inches mm	**RF** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** lb kg
1 ½ DN40	1.900 48.3	9.06 230	2.56 65	4.93 125	6.10 155	3.05 77	25.3 11.5	9.06 230	2.56 65	4.93 125	6.10 155	3.05 77	30.5 13.8
2 DN50	2.375 60.3	9.06 230	3.03 77	4.93 125	6.10 155	3.05 77	28.2 12.8	9.25 235	3.03 77	4.93 125	6.10 155	3.05 77	32.9 14.9
2½	2.875 73.0	–	–	–	–	–	–	–	–	–	–	–	–
3 DN80	3.500 88.9	12.21 310	4.18 106	6.03 153	9.88 251	3.94 100	60.5 27.4	12.84 326	4.18 106	6.03 153	9.88 251	3.94 100	71.0 32.2
4 DN100	4.500 114.3	13.79 350	4.77 121	6.42 163	10.47 266	4.53 115	82.5 37.4	14.50 368	4.77 121	6.42 163	10.47 266	4.53 115	104.0 47.2
6 DN150	6.625 168.3	18.91 480	5.79 147	9.14 232	14.65 372	5.51 140	178.2 80.8	19.94 506	5.79 147	9.14 232	14.65 372	5.51 140	222.8 101.1
8 DN200	8.625 219.1	23.64 600	7.09 180	11.82 300	19.29 490	6.77 172	321.2 145.7	24.66 626	7.09 180	11.82 300	19.29 490	6.77 172	382.0 173.3
10 DN250	10.750 273.0	28.76 731	8.04 204	11.82 300	19.29 490	8.03 204	379.0 171.9	28.76 731	8.04 204	11.82 300	19.29 490	8.03 204	459.0 208.2
12 DN300	12.750 323.9	33.46 850	9.72 247	17.36 441	25.83 656	9.53 242	712.0 323.0	28.76 731	9.72 247	17.36 441	25.83 656	9.53 242	712.0 323.0
14 DN350	14.000 355.6	38.58 980	10.71 272	17.36 441	25.83 656	9.53 242	784.0 355.6	38.58 980	10.71 272	17.36 441	25.83 656	9.53 242	784.0 355.6
16 DN400	16.000 406.4	43.31 1100	12.44 316	17.76 451	25.83 656	9.53 242	886.0 401.9	43.31 1100	12.44 316	17.76 451	25.83 656	9.53 242	886.0 401.9

4.0 DIMENSIONS (CONTINUED)

Series 867-42T-20 and 867-43T



Size		Grooved						Threaded						All	
Nominal inches DN	**Actual Outside Diameter** inches mm	**LG** inches mm	**RG** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** lb kg	**LT** inches mm	**RT** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** lb kg	**a** inches DN	**d** inches DN
1 ½ DN40	1.900 48.3	9.06 230	0.95 24	4.93 125	6.10 155	3.05 77	20.2 9.2	9.06 230	0.95 24	4.93 125	6.10 155	3.05 77	20.2 9.2	½ DN15	¾ DN20
2 DN50	2.375 60.3	9.06 230	1.19 30	4.93 125	6.10 155	3.05 77	18.7 8.5	9.06 230	1.19 30	4.93 125	6.10 155	3.05 77	20.3 9.2	½ DN15	¾ DN20
2 ½	2.875 73.0	9.25 235	1.44 37	4.93 125	6.10 155	3.05 77	28.2 12.8	–	–	–	–	–	–	½ DN15	¾ DN20
3 DN80	3.500 88.9	12.21 310	1.75 44	6.03 153	9.88 251	3.94 100	36.8 16.7	–	–	–	–	–	–	½ DN15	1 ½ DN40
4 DN100	4.500 114.3	13.79 350	2.25 57	6.42 163	10.47 266	4.53 115	50.3 22.8	–	–	–	–	–	–	½ DN15	2 DN50
6 DN150	6.625 168.3	18.91 480	3.31 84	9.14 232	14.65 372	5.51 140	99.0 44.9	–	–	–	–	–	–	½ DN15	2 DN50
8 DN200	8.625 219.1	23.64 600	4.33 110	11.82 300	19.29 490	6.77 172	262.0 118.8	–	–	–	–	–	–	½ DN15	2 DN50
10 DN250	10.750 273.0	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50
12 DN300	12.750 323.9	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50
14 DN350	14.000 355.6	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50
16 DN400	16.000 406.4	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50

5.0 PERFORMANCE

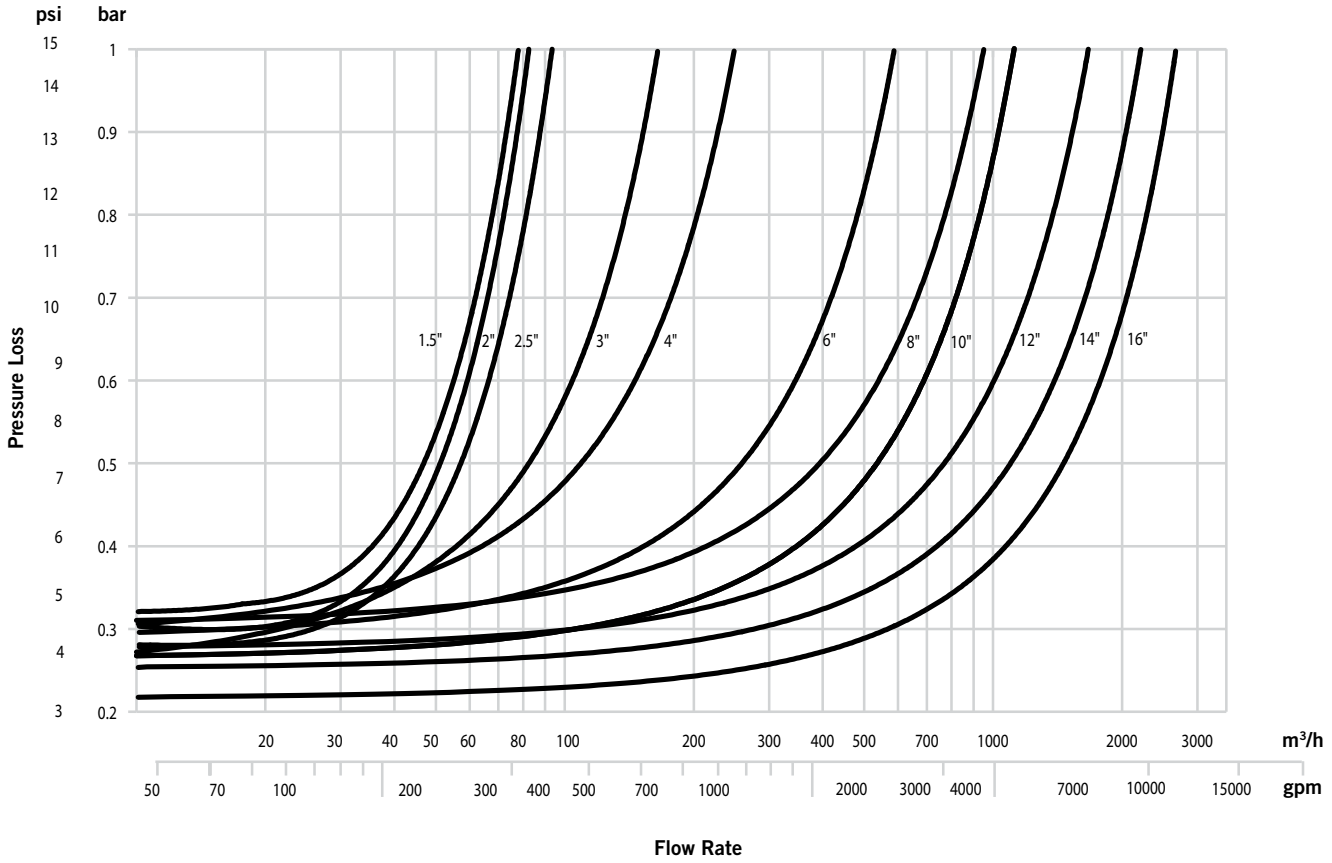
Relief Valve Sizing for Series 867-43T

Systems must be designed with adequate downstream pressure relief valves to protect components from over-pressurization during normal system operation.

To maintain FM Approvals and/or meet NFPA 13 and 14 design requirements, a listed pressure relief valve shall be installed on the downstream side of all pressure reducing valves. The size of the pressure relief valve shall be adequately sized as to not exceed the rated working pressures of the downstream system components. Refer to Victaulic I-867-42T-20 manual for sizing requirements.

5.1 PERFORMANCE

Series 867-42T-20 Pressure Reducing Valve Pressure Drop

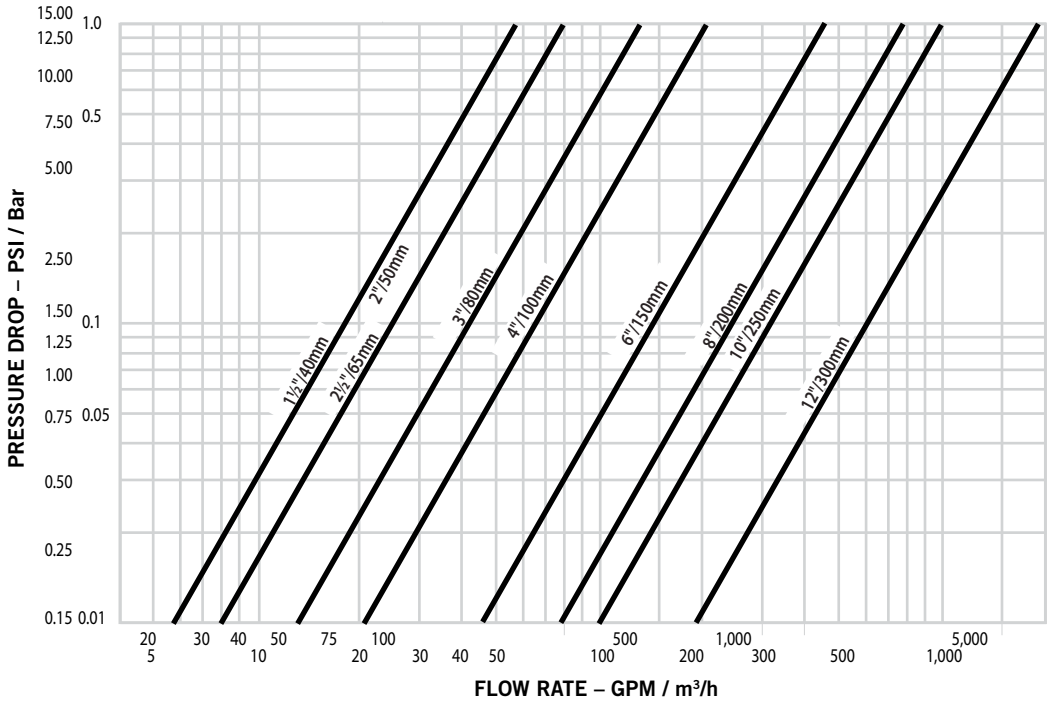


NOTE

- Use this graph to determine the pressure loss when the water supply pressure is equal to or less than the downstream valve set pressure.
- Use this chart to determine friction loss through the second valve in a redundant pressure reducing setup. The first valve is intended to reduce pressure while the second valve is setup for bypass requiring a higher pressure setting than the first valve.

5.1 PERFORMANCE (CONTINUED)

Flow Chart: Series 867-42T-20 and 867-43T-PS



NOTE

- Use this chart to determine the sizing of the valve. The chart represents the minimum and maximum GPM range for the correctly sized valve. If your GPM exceeds the chart, please contact Victaulic.

6.0 NOTIFICATIONS

⚠ WARNING

- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Wear safety glasses, hardhat, and foot protection.**

Failure to follow these instructions could result in death or serious personal injury and property damage.

- **These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.**
- **The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**
- **It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.**
- **The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.**

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

29.01: Victaulic Terms and Conditions

30.98: Victaulic® Direct Acting Pressure Relief Valve/Fire Pump Casing Relief Valve Series 867-3HC

I-100: Field Installation Handbook

I-867-42T IOM: Installation, Operation and Maintenance Manual Series 867-42T-20 IOM

I-867-43T: Installation, Operation and Maintenance Manual Series 867-43T

User Responsibility for Product Selection and Suitability
Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note
This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation
Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty
Refer to the Warranty section of the current Price List or contact Victaulic for details.

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