

Victaulic® Check Valves

Series 716 Check Valve

Series 716H High Pressure Check Valve



Series 716H
(2 – 3"/DN50 – DN80)



Series 716
(2 ½ – 3"/73.0 mm – DN80)



Series 716
(4 – 12"/DN100 – DN300)

1.0 PRODUCT DESCRIPTION

Available Sizes

- Series 716H: 2 – 3"/DN50 – DN80
- Series 716: 2 ½ – 12"/73.0 mm – DN300

Maximum Working Pressure

- Accommodates pressures ranging from full vacuum (29.9 in Hg/760 mm Hg) up to 365 psi/2500 kPa/25 Bar – see section 5.0 Performance for more information
- Working pressure dependent on size of pipe, valve size, and approval requirements

Operating Temperature

- Dependent on seat selection from section 3.0

Application

- Prevents backflow
- Single-disc mechanism incorporates a spring-assisted feature for non-slamming operation
- Can be installed either vertically (flow upwards only) or horizontally
- Valve body cast with arrow indicator to assist with proper valve orientation
- Optional upstream and downstream pressure taps included on select sizes – see section 3.0

End Preparation

- Victaulic Original Groove System (OGS) groove

2.0 CERTIFICATION/LISTINGS



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

3.0 SPECIFICATIONS – MATERIAL

Body: (specify choice)

- ☐ Ductile iron conforming to ASTM A536, Grade 65-45-12.
- ☐ Ductile iron conforming to ASTM A395, Grade 65-45-15, is available upon special request.

Body Coating: (specify choice)

- ☐ Series 716H body: Black paint
- ☐ Series 716H endface: Electroless nickel conforming to ASTM B733
- ☐ Series 716 (2 ½ – 3"/73.0 mm – DN80): PPS coating
- ☐ Series 716 (4 – 12"/DN100 – DN300): Black paint

Body Seat: (specify choice)

- ☐ Series 716H: O-ring installed into an electroless nickel plating conforming to ASTM B733
- ☐ Series 716 (2 ½ – 3"/73.0 mm – DN80): PPS coated ductile iron
- ☐ Series 716 (4 – 12"/DN100 – DN300): Ductile iron with electroless nickel plating conforming to ASTM B733

Seat: (specify choice)

- ☐ **Victaulic EPDM**
(Green color code). Temperature range –30°F to +230°F/–34°C to +110°C. NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.
- ☐ **Victaulic Nitrile**
(Orange color code). Temperature range –20°F to +180°F/–29°C to +82°C. Not compatible with hot water services over +150°F/+66°C or for hot dry air over +140°F/+60°C. NOT COMPATIBLE FOR USE WITH STEAM SERVICES.
- ☐ **Victaulic Fluoroelastomer**
(Blue color code). Temperature range +20°F to +300°F/–7°C to +149°C. May be specified for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons. NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.

Disc: (specify choice)

- ☐ Series 716H: CF8M cast stainless steel
- ☐ Series 716 (2 ½ – 3"/73.0 mm – DN80): Aluminum bronze with elastomer seal
- ☐ Series 716 (4 – 12"/DN100 – DN300): Ductile iron disc conforming to ASTM A536, Grade 65-45-12 encapsulated in rubber

Shaft: (specify choice)

- ☐ Series 716H: Brass
- ☐ Series 716 (2 ½ – 3"/73.0 mm – DN80): Type 416 stainless steel
- ☐ Series 716 (4 – 12"/DN100 – DN300): Type 316 stainless steel

Spring: Type 302/304 stainless steel

Shaft Plug: Carbon steel zinc plated

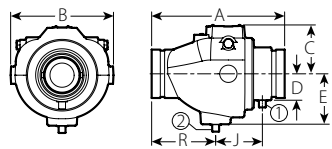
Pipe Plug: Carbon steel zinc plated

Optional Pressure Taps: (specify choice)

- ☐ Series 716H: Available on all sizes
- ☐ Series 716: Available on sizes 4 – 12"/DN100 – DN300

4.0 DIMENSIONS

Series 716H High Pressure Check Valve



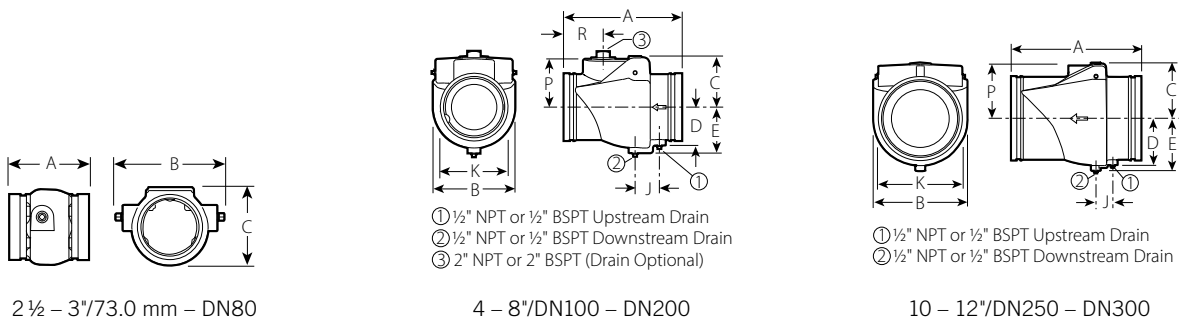
① ½" NPT or ½" BSPT Upstream Drain
② ½" NPT or ½" BSPT Downstream Drain

2 – 3"/DN50 – DN80

Size		Dimensions							Weight
Nominal inches DN	Actual Outside Diameter inches mm	E to E A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	J inches mm	R inches mm	Approximate (Each) lb kg
2 DN50	2.375 60.3	8.75 222	6.50 165	3.25 83	1.50 38	3.13 79	2.88 73	4.25 108	10.7 4.9
2 ½	2.875 73.0	9.38 238	7.00 178	3.38 86	1.75 44	3.50 89	3.38 86	4.38 111	13.8 6.3
DN65	3.000 76.1	9.38 238	7.00 178	3.38 86	1.75 44	3.50 89	3.38 86	4.38 111	13.8 6.3
3 DN80	3.500 88.9	9.63 244	7.50 191	3.63 92	2.00 51	3.75 95	3.38 86	4.63 117	20.0 9.1

4.1 DIMENSIONS

Series 716 Check Valve



Size		Dimensions									Weight
Nominal inches DN	Actual Outside Diameter inches mm	E to E A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	J inches mm	K inches mm	P inches mm	R inches mm	Approximate (Each) lb kg
2 ½	2.875 73.0	3.88 98	4.25 108	3.63 92	–	–	–	–	–	–	3.6 1.6
DN65	3.000 76.1	3.88 98	4.25 108	3.63 92	–	–	–	–	–	–	3.6 1.6
3 DN80	3.500 88.9	4.25 108	5.13 130	4.25 108	–	–	–	–	–	–	4.5 2.0
4 DN100	4.500 114.3	9.63 244	6.00 152	3.88 98	2.75 70	3.50 89	2.00 51	4.50 114	3.50 89	3.38 86	20.0 9.1
DN125	5.500 139.7	10.50 267	6.88 175	4.50 114	–	4.25 108	2.25 57	5.88 149	4.13 105	4.00 102	27.0 12.2
5	5.563 141.3	10.50 267	6.88 175	4.50 114	–	4.50 114	2.25 57	5.88 149	4.13 105	4.00 102	27.0 12.2
	6.500 165.1	11.50 292	8.00 203	5.00 127	–	4.50 114	2.38 60	6.75 171	4.75 121	3.88 86	38.0 17.2
6 DN150	6.625 168.3	11.50 292	8.00 203	5.00 127	–	4.50 114	2.38 60	6.75 171	4.75 121	3.88 86	38.0 17.2
8 DN200	8.625 219.1	14.00 356	9.88 251	6.13 156	5.13 130	5.75 146	2.25 57	8.88 225	5.75 146	5.75 146	64.0 29.0
10 DN250	10.750 273.0	17.00 432	12.00 305	7.13 181	6.00 152	6.75 171	2.25 57	11.00 279	6.75 171	–	100.0 45.4
12 DN300	12.750 323.9	19.50 495	14.00 356	8.13 206	7.00 178	7.75 197	2.50 64	12.88 327	7.75 197	–	140.0 63.5

5.0 PERFORMANCE

Series 716H High Pressure Check Valve

Size		Maximum Working Pressure
Nominal inches DN	Actual Outside Diameter inches mm	
2 DN50	2.375 60.3	365 2500
2 ½	2.875 73.0	365 2500
DN65	3.000 76.1	365 2500
3 DN80	3.500 88.9	365 2500

NOTE

- WARNING: FOR ONE-TIME FIELD TEST ONLY, the Maximum Working Pressure may be increased to 1 ½ times the figures shown.

Series 716 Check Valve

Size		Maximum Working Pressure
Nominal inches DN	Actual Outside Diameter inches mm	
2 ½	2.875 73.0	300 2100
DN65	3.000 76.1	300 2100
3 DN80	3.500 88.9	300 2100
4 DN100	4.500 114.3	365 2500
	5.500 139.7	365 2500
5 DN125	5.563 141.3	365 2500
	6.500 165.1	365 2500
6 DN150	6.625 168.3	365 2500
8 DN200	8.625 219.1	365 2500
10 DN250	10.750 273.0	300 2100
12 DN300	12.750 323.9	300 2100

NOTE

- WARNING: FOR ONE-TIME FIELD TEST ONLY, the Maximum Working Pressure may be increased to 1 ½ times the figures shown.

5.1 PERFORMANCE

The Series 716/716H check valve seat provides leak-free sealing under conditions as low as five feet of head. C_v/K_v values for flow of water at +60°F/+16°C with a fully open valve are shown in the table below.

Formulas for C_v/K_v values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C_v = Flow Coefficient

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (m³/hr)

ΔP = Pressure Drop (Bar)

K_v = Flow Coefficient

Series 716H High Pressure Check Valve

Size		C_v K_v (Full Open)
Nominal inches DN	Actual Outside Diameter inches mm	
2	2.375	160
DN50	60.3	138
2½	2.875	215
	73.0	186
DN65	3.000	215
	76.1	186
3	3.500	315
DN80	88.9	272

Series 716 Check Valve

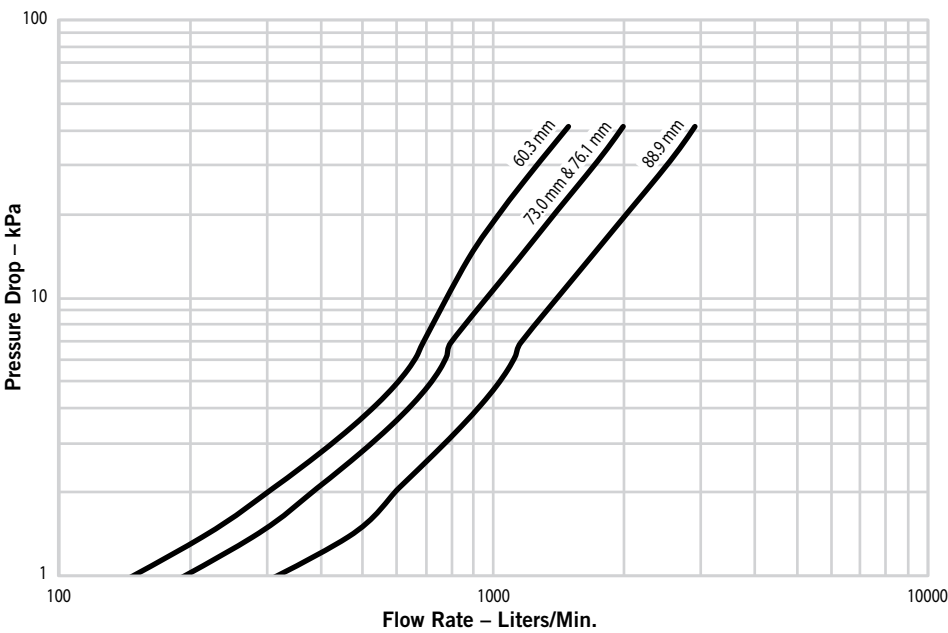
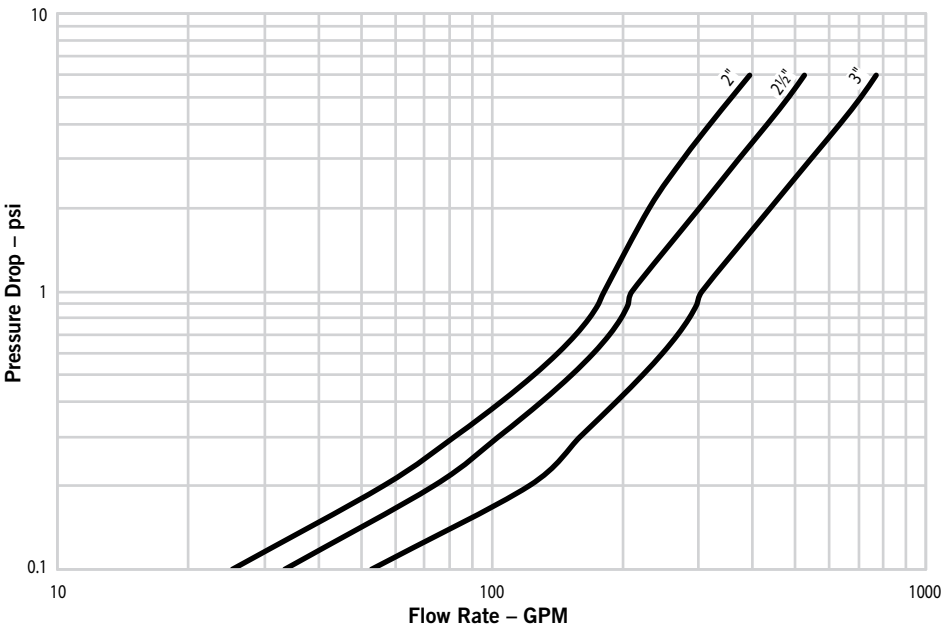
Size		C_v K_v (Full Open)
Nominal inches DN	Actual Outside Diameter inches mm	
2½	2.875	140
	73.0	121
DN65	3.000	140
	76.1	121
3	3.500	250
DN80	88.9	216
4	4.500	390
DN100	114.3	337
DN125	5.500	700
	139.7	606
5	5.563	1000
	141.3	865
	6.500	1000
	165.1	865
6	6.625	1000
DN150	168.3	865
8	8.625	1800
DN200	219.1	1557
10	10.750	3000
DN250	273.0	2595
12	12.750	4200
DN300	323.9	3633

5.2 PERFORMANCE

Flow Characteristics

The charts below express the flow of water at 60°F/16°C through valve.

Series 716H High Pressure Check Valve

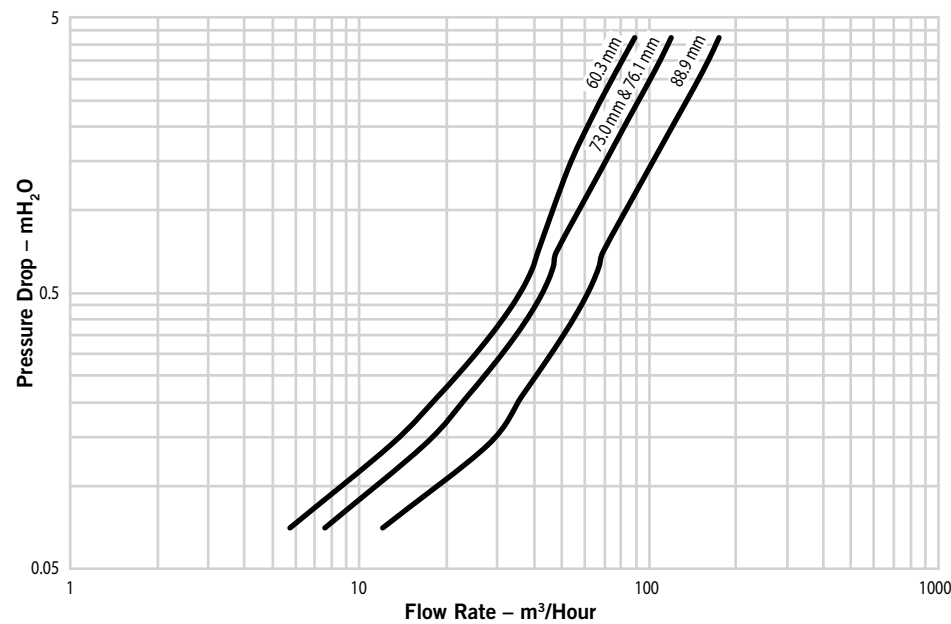


5.2 PERFORMANCE (CONTINUED)

Flow Characteristics

The charts below express the flow of water at 60°F/16°C through valve.

Series 716H High Pressure Check Valve

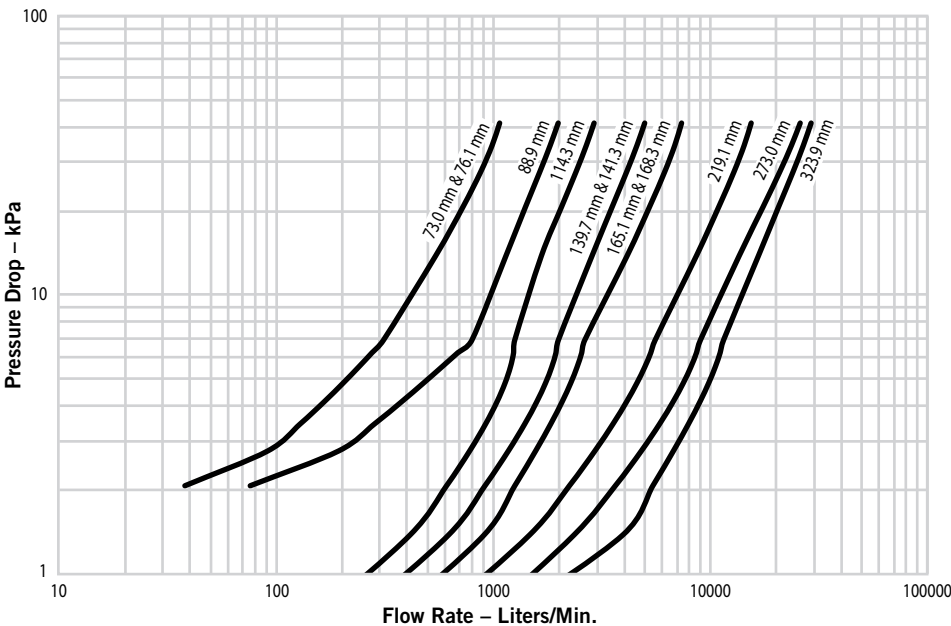
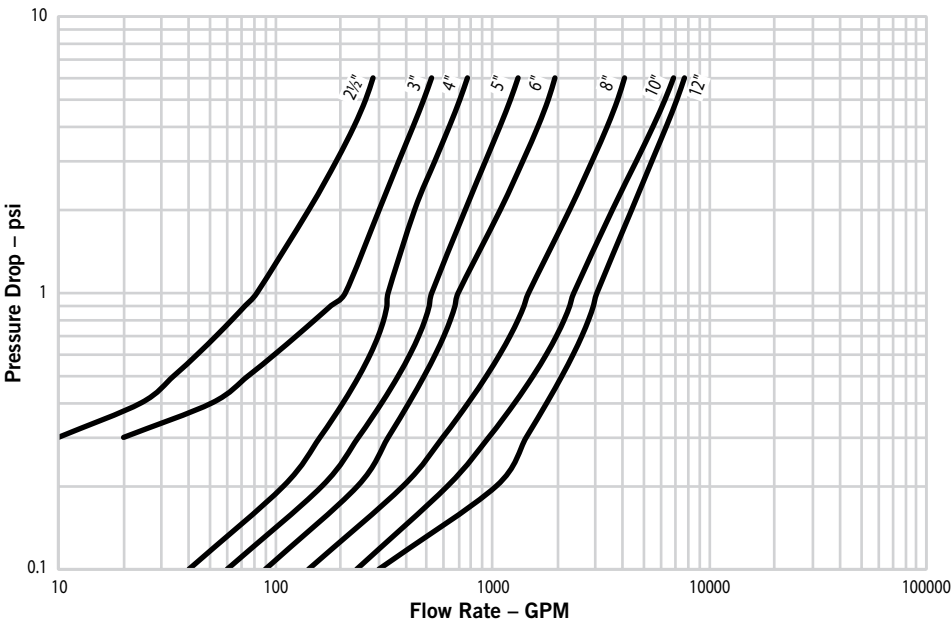


5.2 PERFORMANCE (CONTINUED)

Flow Characteristics

The charts below express the flow of water at 60°F/16°C through valve.

Series 716 Check Valve

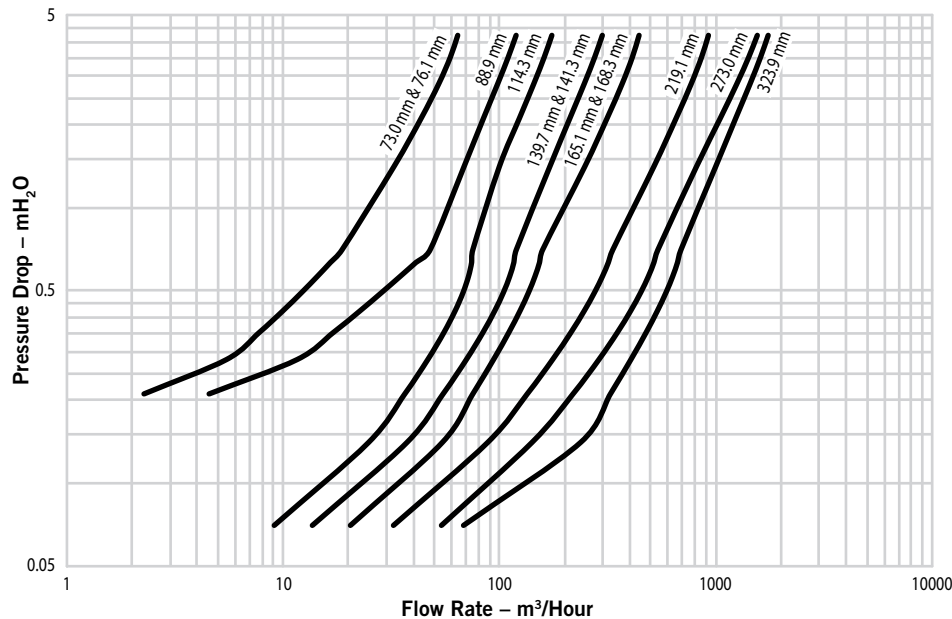


5.2 PERFORMANCE (CONTINUED)

Flow Characteristics

The charts below express the flow of water at 60°F/16°C through valve.

Series 716 Check Valve



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.
- Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, foot protection, and hearing protection.

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

7.0 REFERENCE MATERIALS

- [05.01: Victaulic Seal Selection Guide](#)
- [29.01: Victaulic Terms and Conditions/Warranty](#)
- [I-100: Victaulic Field Installation Handbook](#)
- [I-716-717-KIT4 Check Valve Replacement Parts](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation 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, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the [Victaulic Installation Handbook](#) or installation instructions for 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 [victaulic.com](#).

Warranty

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

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