

# Victaulic® Stainless Steel Rigid Coupling

## Style 489



### 1.0 PRODUCT DESCRIPTION

#### Available Sizes:

- 1½ – 12"/DN40 – DN300

#### Pipe Material:

- Stainless steel

#### Maximum Working Pressure:

- Accommodates pressures up to 600 psi/4136 kPa
- Working pressure dependent on material, wall thickness and size of pipe

#### Application:

- Provides a rigid pipe joint designed to restrict axial or angular movement

#### Pipe Preparation:

- Exclusively for use with fittings, valves, accessories and pipe which feature ends formed with the Victaulic OGS groove profile (see Section 7.0 for Reference Materials)

#### NOTE

- For duplex and super duplex options, please see [publication 17.33](#) for the Style 489DX coupling.

### 2.0 CERTIFICATION/LISTINGS



This system is certified to ISO 9001:2008 by the LPCB under certificate No. 104

- See [publication 02.06](#): Victaulic Potable Water Approvals ANSI/NSF for potable water approvals if applicable.

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

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

### 3.0 SPECIFICATIONS – MATERIAL

**Housing:** Type 316 stainless steel, conforming to ASTM A351, A743 and A744, Grade CF8M.

**Gasket: (specify choice<sup>1</sup>)**

**Grade “E” EPDM**

EPDM (Green stripe color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil free air and many chemical services. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. **NOT COMPATIBLE FOR PETROLEUM SERVICES OR STEAM SERVICES.**

**Grade “EF” EPDM<sup>2</sup>**

EPDM (Green “X” color code). May be specified for hot and cold water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Also meets hot and cold potable water requirements per DVGW W270, UBA Elastomer Guideline, ÖVGW, SVGW, and French ACS approved for EN681-1 Type WA cold potable, and Type WB hot potable water service. WRAS approved material to BS 6920:2014 for cold and hot potable water service up to +149°F/+65°C. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**

**Grade “EW” EPDM**

EPDM (Green W stripe color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. WRAS approved material to BS 6920 for cold and hot potable water service up to +149°F/+65°C. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**

**Grade “T” Nitrile**

Nitrile (Orange stripe color code). Temperature range -20°F to +180°F/-29°C to +82°C. May be specified for petroleum products, hydrocarbons, air with oil vapors, vegetable and mineral oils within the specified temperature range; not compatible for hot dry air over +140°F/+60°C and water over +150°F/+66°C. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**

**Grade “O” Fluoroelastomer**

Fluoroelastomer (Blue stripe 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.**

**Grade “A” White Nitrile**

White nitrile (White gasket). Temperature range +20°F to +180°F/-7°C to +82 °C. No carbon black content. Meets FDA requirements. Conforms to CFR Title 21 Part 177.2600. Not compatible for hot water services over +150°F/+66°C or for hot, dry air over+140°F/+60°C. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES.**

**Others**

For alternate gasket selection, reference Victaulic [publication 05.01](#): Victaulic Seal Selection Guide.

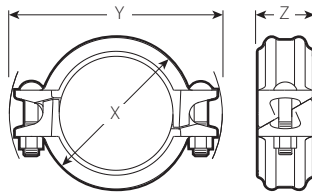
<sup>1</sup> Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest [Victaulic Seal Selection Guide](#) for specific gasket service guidelines and for a listing of services which are not compatible.

<sup>2</sup> Available exclusively in Europe.

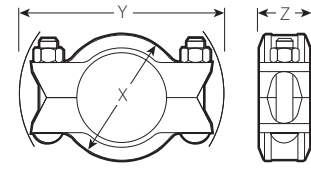
**Bolt/Nuts:**

Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Stainless steel heavy nuts meeting the mechanical property requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling reducing coating.

## 4.0 DIMENSIONS



1 1/2 – 4"/DN40 – DN100 sizes



5 – 12"/141.3 mm – DN300 sizes

Size		Pipe End Separation <sup>3</sup>	Bolt/Nut <sup>4</sup>			Dimensions				Weight
Nominal inches DN	Actual Outside Diameter inches mm	Allowable inches mm	Qty.	Size inches		Nut Torque ft-lbs N·m	X inches mm	Y inches mm	Z inches mm	Approximate (Each) lb kg
1 1/2 DN40	1.900 48.3	0.05 1.3	2	3/8	x 2 1/2	18 - 22 25 - 30	2.86 73	4.42 118	1.84 47	1.6 0.7
2 DN50	2.375 60.3	0.05 1.3	2	3/8	x 2 1/2	18 - 22 25 - 30	3.34 85	5.19 132	1.86 47	1.6 0.7
2 1/2	2.875 73.0	0.05 1.3	2	3/8	x 2 1/2	18 - 22 25 - 30	3.92 100	5.62 143	1.86 47	1.9 0.9
DN65	3.000 76.1	0.05 1.3	2	3/8	x 2 1/2	18 - 22 25 - 30	4.02 102	5.72 145	1.86 47	2.0 0.9
3 DN80	3.500 88.9	0.05 1.3	2	1/2	x 2 3/4	45 - 50 60 - 68	4.54 115	6.78 172	1.86 47	2.8 1.3
4 DN100	4.500 114.3	0.19 4.8	2	1/2	x 2 3/4	45 - 50 60 - 68	5.77 147	7.90 201	2.07 53	4.0 1.8
5	5.563 141.3	0.25 6.4	2	3/4	x 4 1/4	85 - 125 115 - 170	7.05 179	10.63 270	2.25 57	12.50 5.7
DN125	5.500 139.7	0.25 6.4	2	3/4	x 4 1/4	75 - 100 100 - 135	7.07 180	11.13 283	2.38 60	12.0 5.5
	6.500 165.1	0.25 6.4	2	7/8	x 5 1/2	125 - 200 170 - 275	8.16 207	12.68 321	2.50 64	15.5 7.0
6 DN150	6.625 168.3	0.25 6.4	2	7/8	x 5 1/2	125 - 200 170 - 275	8.16 207	12.68 321	2.50 64	15.5 7.0
	8.515 216.3	0.25 6.4	2	1	x 5 1/2	200 - 300 275 - 400	10.63 270	15.00 381	2.75 70	24.0 10.9
8 DN200	8.625 219.1	0.25 6.4	2	1	x 5 1/2	200 - 300 275 - 400	10.63 270	15.00 381	2.75 70	24.0 10.9
	10.528 267.4	0.25 6.4	2	1	x 6 1/2	200 - 300 275 - 400	13.09 332	17.25 438	3.00 76	33.0 15.0
10 DN250	10.750 273.0	0.25 6.4	2	1	x 6 1/2	200 - 300 275 - 400	13.09 332	17.25 438	3.00 76	33.0 15.0
	12.539 318.5	0.25 6.4	2	1	x 6 1/2	200 - 300 275 - 400	15.13 384	19.13 486	3.13 80	40.0 18.1
12 DN300	12.750 323.9	0.25 6.4	2	1	x 6 1/2	200 - 300 275 - 400	15.13 384	19.13 486	3.13 80	40.0 18.1

<sup>3</sup> The allowable pipe end separation dimension shown is for system layout purposes only. Style 489 rigid couplings are considered rigid connections and will not accommodate expansion/contraction or angular movement of the piping system. Contact Victaulic for torsional resistance information.

<sup>4</sup> Metric thread size bolts are available for all coupling sizes upon request. Contact Victaulic for details.

## 5.0 PERFORMANCE

### Performance on ANSI wall thicknesses

Pipe Diameter		Style 489				
Nominal inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness		Groove Type	Maximum	
		inches mm	ANSI Schedule Number		Working Pressure psi kPa	End Load lb N
1 ½ DN40	1.900 48.3	0.200 5.1	80S	C	600 4136	1701 7,566
		0.145 3.7	40S	Std/C	600 4136	1701 7,566
		0.109 2.8	10S	RX	300 2065	849 3,777
		0.065 1.7	5S	RX	200 1379	567 2,522
2 DN50	2.375 60.3	0.218 5.5	80S	C	600 4136	2658 11,821
		0.154 3.9	40S	Std/C	600 4136	2658 11,821
		0.109 2.8	10	RX	300 2065	1327 5,902
		0.065 1.7	5S	RX	200 1379	886 3,941
2 ½	2.875 73.0	0.276 7.0	80S	C	600 4136	3894 17,323
		0.203 5.2	40S	Std/C	600 4136	3894 17,323
		0.120 3.1	10S	RX	300 2065	1944 8,649
		0.083 2.1	5S	RX	232 1600	1506 6,699
3 DN80	3.500 88.9	0.300 7.6	80S	C	600 4136	5771 25,673
		0.216 5.5	40S	Std/C	600 4136	5771 25,673
		0.120 3.1	10S	RX	300 2065	2882 12,818
		0.083 2.1	5S	RX	232 1600	2232 9,929
4 DN100	4.500 114.3	0.337 8.6	80S	C	600 4136	9541 42,439
		0.237 6.0	40S	Std/C	600 4136	9541 42,439
		0.120 3.1	10S	RX	300 2065	4763 21,189
		0.083 2.1	5S	RX	232 1600	3690 16,413
5	5.563 141.3	0.375 6.6	80S	C	600 4136	14580 64,857
		0.258 6.6	40S	Std/C	600 4136	14580 64,857
		0.134 3.4	10S	RX	375 2586	9115 40,544
		0.109 2.8	5S	RX	275 1896	6684 29,732

RX = Roll Set for light wall stainless steel pipe marked with the prefix "RX"

Std = Standard roll set marked with the prefix "R"

C = Cut groove

**NOTE**

- For pressure ratings on wall thickness not mentioned please contact Victaulic

## 5.0 PERFORMANCE (Continued)

### Performance on ANSI wall thicknesses

Pipe Diameter		Style 489				
Nominal inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness		Groove Type	Maximum	
		inches mm	ANSI Schedule Number		Working Pressure psi kPa	End Load lb N
6 DN150	6.625 168.3	0.432 11.0	80S	C	750 5171	25854 115,003
		0.280 7.1	40S	Std/C	750 5171	25854 115,003
		0.134 3.4	10S	RX	300 2065	10324 45,925
		0.109 2.8	5S	RX	250 1724	8618 38,334
8 DN200	8.625 219.1	0.500 12.7	80S	C	600 4136	35049 155,903
		0.322 8.2	40S	Std/C	600 4136	35049 155,903
		0.148 3.8	10S	RX	300 2065	17499 77,838
		0.109 2.8	5S	RX	200 1379	11686 51,980
10 DN250	10.750 273.0	0.500 12.7	80S	C	600 4136	54446 242,188
		0.365 9.3	40S	Std/C	600 4136	54446 242,188
		0.165 4.2	10S	RX	300 2065	27184 120,918
		0.134 3.4	5S	RX	250 1724	22691 100,933
12 DN300	12.750 323.9	0.500 12.7	80S	C	600 4136	76590 340,687
		0.375 9.5	40S	Std/C	600 4136	76590 340,687
		0.180 4.6	10S	RX	300 2065	38239 170,097
		0.156 4.0	5S	RX	200 1379	25536 113,590

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#### NOTES

- For pressure ratings on wall thickness not mentioned please contact Victaulic
- Working Pressure and End Load are total, from all internal and external loads, based on stainless steel pipe, roll grooved with Victaulic rolls in accordance with Victaulic specifications. "RX" rolls must be used for Schedules 5S, 10S and 10. Standard rolls should be used for Schedule 40S and Standard Weight pipe.
- Contact Victaulic for performance on other pipe. See [publication 24.01](#): Pipe Preparation Tool Specifications for more information pertaining to tools.
- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown. Metric thread size bolts are available for all coupling sizes upon request. Contact Victaulic for details.

## 5.1 PERFORMANCE

### Performance on ISO wall thicknesses

Pipe Diameter		Style 489			
Nominal inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness	Groove Type	Maximum	
		mm inches		Working Pressure kPa psi	End Load N lb
DN40	1.900 48.3	5.0 0.197	C	4136 600	7,566 1701
		3.6 0.142	Std/C	3792 550	6,937 1559
		3.2 0.126	Std	2930 425	5,360 1205
		2.6 0.102	RX	1896 275	3,468 780
		2.0 0.079	RX	1600 232	2,927 658
		1.6 0.063	RX	1379 200	2,522 567
		2 DN50	2.375 60.3	5.6 0.220	C
4.0 0.157	Std/C			4136 600	11,821 2658
3.6 0.142	Std			3620 525	10,346 2326
3.2 0.126	Std			3620 525	7,882 1772
2.9 0.114	Std			2241 325	6,404 1440
2.6 0.102	RX			1896 275	5,419 1218
2.3 0.091	RX			1724 250	4,927 1108
2.0 0.079	RX			1600 232	4,537 1028
1.6 0.063	RX			1379 200	3,941 886
DN65	3.000 76.1			7.1 0.280	C
		6.4 0.252	C	4136 600	18,862 4240
		5.0 0.197	Std/C	3275 475	14,935 3358
		4.0 0.157	Std	2586 375	11,791 2651
		3.6 0.142	Std	2413 350	11,005 2474
		3.1 0.122	Std	2065 300	9,417 2117
		2.9 0.114	RX	2065 300	9,433 2121
		2.6 0.102	RX	1896 275	8,647 1944
		2.3 0.091	RX	1724 250	7,875 1770
		2.1 0.083	RX	1600 232	7,297 1640
		2.0 0.079	RX	1600 232	7,297 1640

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Std = Standard roll set marked with the prefix "R"

C = Cut groove

**NOTE**

- For pressure ratings on wall thickness not mentioned please contact Victaulic.

5.1 PERFORMANCE (Continued)

Performance on ISO wall thicknesses

Pipe Diameter		Style 489			
Nominal inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness	Groove Type	Maximum	
		mm inches		Working Pressure kPa psi	End Load N lb
3 DN80	3.500 88.9	8.0 0.315	C	4136 600	25,673 5771
		5.6 0.220	Std/C	4136 600	25,673 5771
		4.0 0.157	Std	2758 400	17,119 3848
		3.6 0.142	Std	2413 350	14,979 3367
		3.2 0.126		2065 300	12,839 2886
		2.9 0.114	RX	2065 300	12,839 2886
		2.6 0.102	RX	1896 275	11,769 2646
		2.3 0.091	RX	1724 250	10,719 2410
		2.0 0.079	RX	1600 232	9,931 2233
4 DN100	4.500 114.3	8.8 0.346	C	4136 600	42,439 9541
		6.3 0.248	C	4136 600	42,439 9541
		4.5 0.177	Std	3103 450	31,836 7157
		3.6 0.142	Std	2065 300	21,224 4771
		2.9 0.114	RX	2065 300	21,224 4771
		2.6 0.102	RX	1896 275	19,455 4374
		2.0 0.079	RX	1600 232	16,417 3691

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C = Cut groove

**NOTE**

- For pressure ratings on wall thickness not mentioned please contact Victaulic

### 5.1 PERFORMANCE (Continued)

#### Performance on ISO wall thicknesses

Pipe Diameter		Style 489					
Nominal inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness	Groove Type	Maximum			
		mm inches		Working Pressure kPa psi	End Load N lb		
DN125	5.500 139.7	10.0 0.394	C	4136 600	63,396 14252		
		7.1 0.280	C	4136 600	63,396 14252		
		6.6 0.260	Std/C	4136 600	63,396 14252		
		6.3 0.248	Std/C	3964 575	60,767 13661		
		5.6 0.220	Std/C	3447 500	52,841 11879		
		5.0 0.197	Std	3101 450	47,524 10684		
		4.0 0.157	Std	2413 350	36,989 8315		
		3.4 0.134	RX	2065 300	31,652 7116		
		3.2 0.126	RX	2065 300	31,704 7127		
		3.0 0.118	RX	1896 275	29,062 6534		
		2.8 0.110	RX	1896 275	29,062 6534		
		2.6 0.102	RX	1724 250	26,420 5940		
		2.0 0.079	RX	1600 232	24,525 5513		
		6 DN150	6.625 168.3	11.0 0.433	C	5171 750	115,003 25854
				7.1 0.280	Std/C	5171 750	115,003 25854
				5.0 0.197	Std	3447 500	76,668 17236
4.5 0.177	Std			3101 450	69,002 15512		
4.0 0.157	Std			2586 375	57,501 12927		
3.2 0.126	RX			1896 275	42,168 9480		
3.0 0.118	RX			1896 275	42,168 9480		
2.6 0.102	RX			1600 232	35,583 7999		
2.0 0.079	RX			1600 232	35,574 7997		

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C = Cut groove

**NOTE**

- For pressure ratings on wall thickness not mentioned please contact Victaulic



## 5.1 PERFORMANCE (Continued)

### Performance on ISO wall thicknesses

Pipe Diameter		Style 489			
Nominal inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness	Groove Type	Maximum	
		mm inches		Working Pressure kPa psi	End Load N lb
8 DN200	8.625 219.1	12.5 0.492	C	4136 600	155,903 35049
		8.0 0.315	Std/C	4136 600	155,903 35049
		6.5 0.256	Std/C	3275 475	123,449 27752
		6.3 0.248	Std/C	3275 475	123,449 27752
		5.0 0.197	Std	2586 375	97,459 21910
		4.0 0.157	Std	2241 325	84,465 18989
		3.6 0.142	RX	1896 275	71,470 16067
		32 0.126	RX	1600 232	60,295 13555
		3.0 0.118	RX	1551 225	58,476 13146
		2.6 0.102	RX	1207 175	45,481 10225
		2.0 0.079	RX	1034 150	38,984 3764
		10 DN250	10.750 273.0	14.2 0.559	C
12.5 0.492	C			4136 600	242,188 54446
10.0 0.394	C			4136 600	242,188 54446
6.3 0.248	Std/C			2930 425	171,585 38574
4.0 0.157	RX			2065 300	121,119 27229
3.6 0.142	RX			1724 250	100,933 22691
3.2 0.126	RX			1600 232	93,690 21062
3.0 0.118	RX			1379 200	80,746 18153
2.6 0.102	RX			1034 150	60,560 13614
2.0 0.079	RX			689 100	40,373 9076

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**NOTE**

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## 5.1 PERFORMANCE (Continued)

### Performance on ISO wall thicknesses

Pipe Diameter		Style 489			
Nominal inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness	Groove Type	Maximum	
		mm inches		Working Pressure kPa psi	End Load N lb
12 DN300	12.750 323.9	12.5 0.492	C	4136 600	340,687 76590
		10.0 0.394	C	4136 600	340,687 76590
		7.1 0.280	Std/C	3101 450	255,568 57454
		5.0 0.197	RX	2241 325	184,577 41495
		4.5 0.177	RX	2065 300	170,379 38303
		4.0 0.157	RX	1379 200	113,590 25536

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#### NOTES

- For pressure ratings on wall thickness not mentioned please contact Victaulic
- Working Pressure and End Load are total, from all internal and external loads, based on stainless steel pipe, roll grooved with Victaulic rolls in accordance with Victaulic specifications. "RX" rolls must be used for Schedules 5S, 10S and 10. Standard rolls should be used for Schedule 40S and Standard Weight pipe.
- Contact Victaulic for performance on other pipe. See [publication 24.01](#): Pipe Preparation Tool Specifications for more information pertaining to tools.
- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown. Metric thread size bolts are available for all coupling sizes upon request. Contact Victaulic for details.

## 6.0 NOTIFICATIONS

### WARNING

- Victaulic RX roll sets must be used when grooving light-wall/thin-wall stainless steel pipe for use with Victaulic Couplings.

Failure to use Victaulic RX roll sets when grooving light-wall/thin-wall stainless steel pipe may cause joint failure, resulting in serious personal injury and/or property damage.

### NOTICE

- Victaulic RX grooving rolls must be ordered separately. They are identified by a silver color and the designation RX on the front of the roll sets.

### WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.

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

## 7.0 REFERENCE MATERIALS

- [17.01: Victaulic® Stainless Steel Pipe End Preparation](#)
- [17.09: Victaulic® Ductile Iron Grooved Couplings Performance Data for Stainless Steel Pipe](#)
- [24.01: Victaulic® Pipe Preparation Tool Specifications](#)
- [26.01: Victaulic® Design Data](#)
- [29.01: Victaulic® Terms and Conditions/Warranty](#)
- [I-100: Victaulic® Field Installation Handbook](#)

### 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](http://www.victaulic.com).

### Warranty

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

### Trademarks

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