

# Victaulic® StrengThin™ 100 System Fittings for Stainless Steel



## 1.0 PRODUCT DESCRIPTION

### Available Sizes

- 2 – 12"/DN50 – DN300

### Maximum Working Pressure

- Fitting pressure ratings are equivalent to the coupling joint pressure rating of the Victaulic StrengThin™ 100 Style E497 Rigid Couplings used to install them (see section 5.0 in [publication 31.02: Victaulic StrengThin™ 100 System Style E497 Rigid Coupling for Stainless Steel Pipe](#)).
- For the pressure ratings for the No. E494G Adapter Nipples, see page 7 of this document.
- For the pressure ratings of the No. E498 Flange Adapters, see page 10 of this document.

### Function

- Connects pipe sections, provides change in direction, and adapts sizes or components.
- All fittings are supplied with the Victaulic StrengThin™ 100 groove profile. Fittings are exclusively for use with Victaulic StrengThin™ 100 couplings, valves, accessories and pipe which feature ends formed with the Victaulic StrengThin™ 100 groove profile (see section 7.0 for Reference Materials).

## 2.0 CERTIFICATION/LISTINGS

Product designed and manufactured under Victaulic's Quality Management System, as certified by LPCB in accordance with ISO-9001.

**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

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**Fittings:**

Investment Cast Fittings: Stainless steel per ASTM A351/A351M, Grade CF8 (304) or Grade CF8M (316).

Wrought Fittings: Stainless steel per EN 10088-1 No. 1.4307 (304L) or EN 10088-1 No. 1.4404 (316L).

**No. E498 Flange Adapter Nipples**

**Stub Material:** ASTM A403, Class WP, Grade 304/304L or 316/316L

**Flange Material (specify choice):**

Standard: Stainless steel flange per EN10222-5 1.4401/1.4404 (316/316L) according to EN1092-1 Type 02.

Optional:<sup>1</sup> Carbon steel.

**Flange Coating:** Hot dipped galvanized as per EN10240.

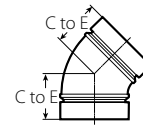
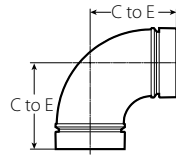
<sup>1</sup> Contact Victaulic for more details

## 4.0 DIMENSIONS

### Elbows

No. E490 90° Elbow

No. E491 45° Elbow



Size		No. E490 90° Elbow		No. E491 45° Elbow	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approximate Weight (Each) lb kg	C to E inches mm	Approximate Weight (Each) lb kg
2 DN50	2.375 60.3	3.13 (c) 79	1.7 0.8	1.88 (c) 48	1.2 0.5
DN65	3.000 76.1	3.75 (c) 95	2.6 1.2	2.00 (c) 51	1.8 0.8
3 DN80	3.500 88.9	4.50 (c) 114	2.9 1.3	2.13 (c) 54	2.2 1.0
4 DN100	4.500 114.3	6.00 152	2.9 1.3	2.50 64	1.5 0.7
DN125	5.500 139.7	7.50 191	4.5 2.0	3.13 80	1.8 0.8
6 DN150	6.625 168.3	9.00 229	6.5 3.0	3.75 95	3.2 1.5
8 DN200	8.625 219.1	12.00 305	16.9 7.7	5.00 127	8.5 3.9
10 DN250	10.750 273.0	15.00 381	26.4 12.0	6.25 159	13.2 6.0
12 DN300	12.750 323.9	18.00 457	37.6 17.1	7.50 191	18.8 8.5

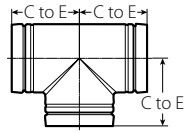
**NOTE**

- (c) = Cast fitting

## 4.1 DIMENSIONS

### Tee

#### No. E492

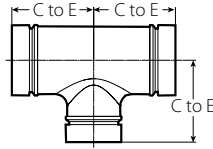


Size		No. E492 Tee	
Nominal inches DN	Actual Outside Diameter inches mm	C to E inches mm	Approximate Weight (Each) lb kg
2 DN50	2.375 60.3	3.25 83	2.1 1.0
DN65	3.000 76.1	3.75 95	2.9 1.3
3 DN80	3.500 88.9	4.00 102	2.1 1.0
4 DN100	4.500 114.3	4.59 114	3.2 1.5
DN125	5.500 139.7	5.25 133	4.6 2.1
6 DN150	6.625 168.3	5.88 149	6.8 3.1
8 DN200	8.625 219.1	7.75 197	16.0 7.3
10 DN250	10.750 273.0	8.88 226	30.0 13.6
12 DN300	12.750 323.9	10.38 264	51.0 23.1

## 4.2 DIMENSIONS

### Reducing Tee

#### No. E493



Size				No. E493 Reducing Tee							
Nominal inches DN				Actual Outside Diameter inches mm				C to E inches mm	Approximate Weight (Each) lb kg		
DN65	x	DN65	x	2 DN50	3.000 76.1	x	3.000 76.1	x	2.375 60.3	3.50 (c) 89	3.4 1.5
3 DN80	x	3 DN80	x	2 DN50	3.500 88.9	x	3.500 88.9	x	2.375 60.3	3.50 (c) 89	3.5 1.6
				DN65							
4 DN100	x	4 DN100	x	2 DN50	4.500 114.3	x	4.500 114.3	x	2.375 60.3	3.75 (c) 95	5.1 2.3
				DN65					3.000 76.1	4.50 114	3.2 1.5
				3 DN80					3.500 88.9	4.50 114	3.2 1.5
DN125	x	DN125	x	DN65	5.500 139.7	x	5.500 139.7	x	3.000 76.1	5.25 134	3.9 1.8
				3 DN80					3.500 88.9	5.25 134	4.0 1.8
				4 DN100					4.500 114.3	5.25 134	4.6 2.1
				6 DN150					6.625 168.3	5.88 150	5.6 2.5
8 DN200	x	8 DN200	x	4 DN100	8.625 219.1	x	8.625 219.1	x	4.500 114.3	7.78 198	15.3 6.9
				DN125					5.500 139.7	7.78 198	15.5 7.0
				6 DN150					6.625 168.3	7.78 198	15.8 7.2
10 DN250	x	10 DN250	x	DN125	10.750 273.0	x	10.750 273.0	x	5.500 139.7	8.88 226	27.0 12.2
				6 DN150					6.625 168.3	8.88 226	28.0 12.7
				8 DN200					8.625 219.1	8.88 226	29.0 13.2
				12 DN300					12.750 323.9	10.38 264	45.0 20.4
12 DN300	x	12 DN300	x	6 DN150	12.750 323.9	x	12.750 323.9	x	6.625 168.3	10.38 264	47.0 21.3
				8 DN200					8.625 219.1	10.38 264	49.0 22.2
				10 DN250					10.750 273.0	10.38 264	49.0 22.2

**NOTE**

- (c) = Cast fitting

### 4.3 DIMENSIONS

#### Adapter Nipple

No. E494 Plain End x StrenghThin™ 100 Grv.



Size		No. E494 Adapter Nipple		
Nominal inches DN	Actual Outside Diameter inches mm	Wall Thickness inches mm	E to E inches mm	Approximate Weight (Each) lb kg
2 DN50	2.375 60.3	0.079 2.0	4.00 102	0.6 0.3
DN65	3.000 76.1	0.079 2.0	4.00 102	0.8 0.4
3 DN80	3.500 88.9	0.079 2.0	4.00 102	1.1 0.5
4 DN100	4.500 114.3	0.079 2.0	6.00 152	2.4 1.1
DN125	5.500 139.7	0.079 2.0	6.00 152	3.8 1.7
6 DN150	6.625 168.3	0.079 2.0	6.00 152	3.9 1.8
8 DN200	8.625 219.1	0.118 3.0	6.00 152	4.2 1.9
10 DN250	10.750 273.3	0.118 3.0	6.00 152	7.0 3.2
12 DN300	12.750 323.9	0.118 3.0	6.00 152	7.5 3.4

### 4.3 DIMENSIONS (Continued)

#### Adapter Nipple

No. E494G Original Groove System (OGS) x StrenghThin™ 100 Groove



Cast



Wrought

Size		No. E494G Adapter Nipple			
Nominal inches DN	Actual Outside Diameter inches mm	E to E Cast inches mm	Approximate Weight (Each) lb kg	E to E Wrought inches mm	Approximate Weight (Each) lb kg
2 DN50	2.375 60.3	4.00 102	1.1 0.5	4.00 102	0.6 0.3
DN65	3.000 76.1	4.00 102	1.8 0.8	4.00 102	0.8 0.4
3 DN80	3.500 88.9	4.00 102	2.2 1.0	4.00 102	1.1 0.5
4 DN100	4.500 114.3	4.00 102	3.0 1.4	6.00 152	2.4 1.1
DN125	5.500 139.7	4.00 102	3.8 1.7	6.00 152	3.8 1.7
6 DN150	6.625 168.3	4.00 102	5.0 2.3	6.00 152	3.9 1.8
8 DN200	8.625 219.1	6.00 152	9.8 4.4	6.00 152	4.2 1.9
10 DN250	10.750 273.3	6.00 152	14.7 6.7	8.00 203	7.1 3.2
12 DN300	12.750 323.9	6.00 152	17.6 8.0	8.00 203	9.9 4.5

#### NOTES

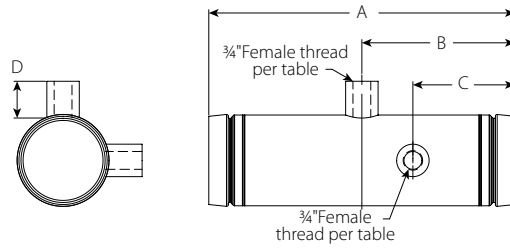
- When using the No. E494G Adapter Nipple, the piping system pressure rating shall be determined by the adjoining coupling/pipe joints. The coupling/pipe joint pressure rating is determined by the pipe size, material and wall thickness. The lower of the two coupling/pipe joint pressure ratings shall govern the piping system pressure rating.
- The No. E494G Adapter Nipple may be used to accommodate linear movement and angular deflection. This is accomplished by using a Victaulic flexible coupling for an OGS groove to adjoin two No. E494G Adapter Nipples. When adjoining the two No. E494G Adapter Nipples, the linear movement and angular deflection of the joint shall be determined by the flexible coupling used to join them. Reference the applicable coupling submittal for linear movement and angular deflection capabilities.
- When using the No. E494G Adapter Nipple to accommodate linear movement and angular deflection, the piping system pressure rating shall be determined by the lowest of the following coupling joint ratings:
  - Coupling/pipe joint rating of the Style E497 piping connection (see [publication 31.02](#): Victaulic StrenghThin™ 100 System Style E497 Rigid Coupling for Stainless Steel Pipe).
  - Coupling/adapter nipple joint rating of the OGS groove adapter connection. For this evaluation, the No. E494G Adapter Nipple shall be considered as pipe with a nominal wall thickness of schedule 40S (see [publication 17.09](#): Victaulic Grooved Couplings Performance Data for Stainless Steel Pipe)

The coupling/pipe joints pressure rating is determined by the pipe size, material, and pipe wall thickness

## 4.4 DIMENSIONS

### Instrumentation Nipple

No. E494I StrenghThin™ 100 Groove x StrenghThin™ 100 Groove



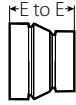
Size		No. E494I Instrumentation Nipple						
Nominal inches DN	Actual Outside Diameter inches mm	Wall Thickness T inches mm	A inches mm	B inches mm	C inches mm	D inches mm	Female Thread Size inches mm	Approximate Weight (Each) lb kg
2 DN50	2.375 60.3	0.08 2	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	2.0 0.9
DN65	3.000 76.1	0.08 2	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	2.6 1.2
3 DN80	3.500 88.9	0.08 2	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	3.3 1.5
4 DN100	4.500 114.3	0.08 2	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	4.9 2.2
DN125	5.500 139.7	0.08 2	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	6.0 2.7
6 DN150	6.625 168.3	0.08 2	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	7.3 3.3
8 DN200	8.625 219.1	0.12 3	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	10.6 4.8
10 DN250	10.750 273.3	0.12 3	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	12.8 5.8
12 DN300	12.750 323.9	0.12 3	11.81 300	5.91 150	3.94 100	1.42 36	0.75 26.9	15.2 6.9



## 4.5 DIMENSIONS

### Concentric Reducer

#### No. E495



Size		No. E495 Concentric Reducer				
Nominal inches DN		Actual Outside Diameter inches mm		E to E inches mm	Approximate Weight (Each) lb kg	
DN65	x 2 DN50	3.000 76.1	x 2.375 60.3	2.50 (c) 64	1.3 0.6	
DN80	x 3 DN50	3.500 88.9	x 2.375 60.3	4.13 (c) 105	1.8 0.8	
	DN65			3.000 76.1	5.13 130	1.1 0.5
DN100	x 4 DN50	4.500 114.3	x 2.375 60.3	4.41 (c) 112	2.4 1.1	
	DN65			3.000 76.1	5.63 143	1.3 0.6
	3 DN80			3.500 88.9	5.50 140	1.5 0.7
DN125	x 3 DN80	5.500 139.7	x 3.500 88.9	6.63 168	1.8 0.8	
	4 DN100			4.500 114.3	6.63 168	1.9 0.9
DN150	x 6 DN100	6.625 168.3	x 4.500 114.3	6.89 175	2.5 1.1	
	DN125			5.500 139.7	7.08 180	2.6 1.2
DN200	x 8 DN125	8.625 219.1	x 5.500 139.7	7.24 184	6.6 3.0	
	6 DN150			6.625 168.3	7.08 180	7.7 3.5
DN250	x 10 DN200	10.750 273.0	x 8.625 219.1	8.31 211	12.1 5.5	
DN300	x 12 DN250	12.750 323.9	x 10.750 273.0	8.78 223	16.5 7.5	

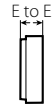
**NOTE**

- (c) = Cast fitting

## 4.6 DIMENSIONS

### Cap

#### No. E496



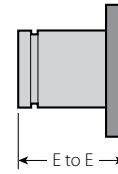
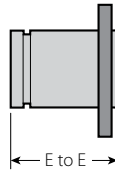
Size		No. E496 Cap	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approximate Weight (Each) lb kg
2 DN50	2.375 60.3	1.00 25	0.8 0.4
DN65	3.000 76.1	1.00 25	1.4 0.6
3 DN80	3.500 88.9	1.00 25	1.8 0.8
4 DN100	4.500 114.3	1.00 25	3.2 1.5
DN125	5.500 139.7	1.06 27	5.0 2.3
6 DN150	6.625 168.3	1.06 27	7.5 3.4
8 DN200	8.625 219.1	2.29 58	7.8 3.5
10 DN250	10.750 273.3	2.75 70	15.4 7.0
12 DN300	12.750 323.9	3.33 85	22.8 10.3

## 4.7 DIMENSIONS

### Flange Adapter Nipples

No. E498 PN10

No. E498 PN16



Size		No. E498 Flange Adapter Nipple PN10 (Serrated Raised Face)		No. E498 Flange Adapter Nipple PN16 (Serrated Raised Face)	
Nominal inches DN	Actual Outside Diameter inches mm	E to E inches mm	Approximate Weight (Each) lb kg	E to E inches mm	Approximate Weight (Each) lb kg
2 DN50	2.375 60.3	2.50 64	6.6 3.0	2.50 64	6.6 3.0
DN65	3.000 76.1	2.50 64	7.9 3.6	2.50 64	7.9 3.6
3 DN80	3.500 88.9	2.50 64	9.3 4.2	2.50 64	9.3 4.2
4 DN100	4.500 114.3	3.00 76	11.5 5.2	3.00 76	11.5 5.2
DN125	5.500 139.7	3.00 76	14.8 6.7	3.00 76	14.8 6.7
6 DN150	6.625 168.3	3.50 89	19.8 9.0	3.50 89	19.8 9.0
8 DN200	8.625 219.1	4.00 102	27.6 12.5	4.00 102	27.6 12.5
10 DN250	10.750 273.3	5.00 127	36.0 16.3	5.00 127	41.4 18.8
12 DN300	12.750 323.9	6.00 152	45.2 20.5	6.00 152	57.1 25.9

**NOTE**

- A smooth raised face is also available. Contact Victaulic for details.

## 5.0 PERFORMANCE

The chart expresses the frictional resistance of various Victaulic fittings as equivalent feet of straight stainless steel pipe with a 2 mm nominal wall thickness.

Size		Frictional Resistance (Equivalent Length of Straight Pipe)			
		Elbows		No. E492 Straight Tee	
Nominal inches DN	Actual Outside Diameter inches mm	No. E490 90° Elbow ft m	No. E491 45° Elbow ft m	Branch ft m	Run ft m
2 DN50	2.375 60.3	2.7 0.8	2.1 0.6	11.6 3.5	4.2 1.3
DN65	3.000 76.1	3.5 1.1	2.7 0.8	15.7 4.8	5.5 1.7
3 DN80	3.500 88.9	5.3 1.6	3.9 1.2	18.1 5.5	6.3 1.9
4 DN100	4.500 114.3	6.6 2.0	4.9 1.5	23.4 7.1	8.0 2.4
DN125	5.500 139.7	7.9 2.4	5.7 1.8	26.9 8.2	9.7 2.8
6 DN150	6.625 168.3	9.4 2.9	6.8 2.1	33.7 10.3	11.4 3.5
8 DN200	8.625 219.1	12.2 3.7	8.8 2.7	13.4 4.1	4.5 1.4
10 DN250	10.750 273.3	15.8 4.8	10.8 3.3	16.5 5.0	5.5 1.7
12 DN300	12.750 323.9	17.9 5.5	12.8 3.9	19.7 6.0	6.5 2.0

## 6.0 NOTIFICATIONS

### WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping 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.

## 7.0 REFERENCE MATERIALS

[05.01: Victaulic Seal Selection Guide](#)

[17.01: Victaulic Pipe Preparation for Use on Stainless Steel Pipe with Victaulic Products](#)

[17.09: Victaulic Grooved Couplings Performance Data for Stainless Steel Pipe](#)

[25.13: Victaulic StrengThin™ 100 Roll Groove Specifications](#)

[31.02: Victaulic StrengThin™ 100 System Style E497 Rigid Coupling for Stainless Steel Pipe](#)

[I-ENDCAP: Victaulic End Cap Installation Safety Instructions](#)

### 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.

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