

Pressfit® System for Carbon Steel Pipe

PRODUCT DESCRIPTION



See Victaulic publication 10.01 for details.



The Pressfit® System offers economy, speed and reliability for joining small diameter pipe for fire protection, heating/air conditioning and many other services.

Pressfit products for carbon steel pipe are externally zinc electroplated. It is the responsibility of designers of piping systems to verify that an adequate corrosion allowance, corrosion inhibitors or experience confirms system life will be adequate for the intended service. Schedule 5 carbon steel pipe compatible with Pressfit products provides corrosion resistance equivalent to ASTM A53, A135 and A795 pipe.

The system incorporates Schedule 5 steel pipe from 3/4" - 2" (20 - 50 mm), with a system of Pressfit couplings, elbows, tees, reducers and adapters. This system allows pipe assembly in seconds. A portable, hand-held tool assembles the fitting on the pipe with a permanent mechanical attachment.

Pressfit products for carbon steel are acceptable for use in mechanical systems in accordance with BOCA, SBCCI, ICBO (UMC) and ICC (IMC) mechanical codes. Request BOCA-ES research report No. 93-3, SBCCI-ES report No. 9535 and ICBO-ES report No. 5079 for details.

Pressfit System products are rugged and reliable. They are UL/ULC Listed and FM Approved for 175 psi (1200 kPa) fire protection service. UL/ULC and FM ratings apply only to Listed or Approved Schedule 5 carbon steel pipe installed with Pressfit fittings by a UL/ULC Listed and FM Approved Pressfit tool. The Pressfit System is also rated to 300 psi (2065 kPa) for other general service closed loop systems.

For product installation instructions, refer to Pressfit Product Assembly Instructions (I-500) and the appropriate Tool Operating and Maintenance Instructions Manual.

MATERIAL SPECIFICATIONS

⚠ WARNING

- Pressfit products must be used only on services compatible with o-ring and fitting materials.
- Incompatible services may result in leakage.

For services not listed or special services, contact Victaulic for recommendations.

Housing Body: Precision cold drawn carbon steel conforming to Victaulic specifications. Zinc electroplated conforming to ASTM B-633 (external only).

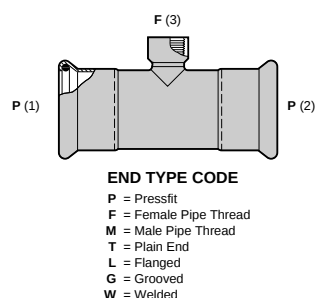
Threaded Outlets: ASTM A-53 pipe or steel bar conforming to ASTM A-108.

O-ring Seals: (Specify choice on order) O-ring seals shall be molded of synthetic rubber.

- **Grade "E" EPDM** EPDM (Green color code)
Temperature range -30°F to +230°F (-34°C to +110°C). Recommended for hot water service within the specified temperature range plus a variety of dilute acids, compressed air and many chemical services. NOT RECOMMENDED FOR PETROLEUM SERVICES. NOT RECOMMENDED FOR STEAM SERVICES.
- **Grade "T" nitrile** Nitrile (Orange color code). Temperature range -20°F to +180°F (-29°C to +82°C). Recommended for petroleum products, vegetable and mineral oils within the specified temperature range; except hot, dry air over +140°F (+60°C) and water over +150°F (+66°C). NOT RECOMMENDED FOR HOT WATER SERVICES.
- **Grade "O" fluoroelastomer**
Fluoroelastomer (Blue color code). Temperature range +20°F to +300°F (-7°C to +149°C). Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons to +300°F (+149°C).

Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

DIMENSIONAL INFORMATION

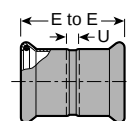


As self-contained mechanical fittings, products in the Pressfit System have unique center-to-end or end-to-end dimensions which incorporate specific, uniform "take-out" dimensions for easy fabrication calculations.

Victaulic female threaded products are designed to accommodate standard ANSI male pipe threads only. Use of products employing special features such as, probes, dry pendant sprinkler heads, escutcheon cups, etc., should be checked to be certain the thread standards and length of insertion are compatible with fitting dimensions. Failure to verify suitability in advance may result in difficulties in assembly or leakage.

Style 505 Coupling Standard (P X P)

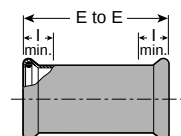
F-___ - 505 - Z - _ - P



Fitting Size		Dimensions – Inches/mm		Aprx. Weight Each Lbs./kg
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	E - E	Takeout U	
3/4 20	1.050 26,7	2.17 55	0.28 7	0.2 0,1
1 25	1.315 33,7	2.44 62	0.39 10	0.2 0,1
1 1/4 32	1.660 42,4	2.76 70	0.39 10	0.3 0,1
1 1/2 40	1.900 48,3	3.15 80	0.32 8	0.4 0,2
2 50	2.375 60,3	3.94 100	0.33 8	0.7 0,3

Style 506 Coupling Slip (P X P)

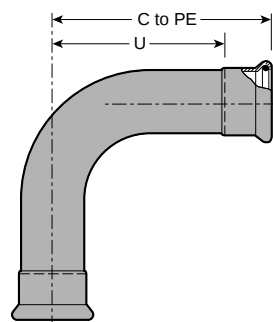
F-___ - 506 - Z - _ - P



Fitting Size		Dimensions Inches/mm		Weight Each Lbs. kg	Fitting Size		Dimensions Inches/mm		Aprx. Weight Each Lbs. kg
Nominal Dia. In./mm	Actual Outside Dia. In./mm	E - E	I - Min. Tube Insert.		Nominal Dia. In./mm	Actual Outside Dia. In./mm	E - E	I - Min. Tube Insert.	
3/4 20	1.050 26,7	3.54 90	1.00 25	0.2 0,1	1 1/2 40	1.900 48,3	4.72 120	1.00 25	0.6 0,3
1 25	1.315 33,7	3.94 100	1.00 25	0.3 0,1	2 50	2.375 60,3	5.51 140	1.25 32	0.9 0,4
1 1/4 32	1.660 42,4	4.33 110	1.00 25	0.4 0,2					

Style 510 90° Elbow (P X P)

F-___ - 510 - Z - _ - P

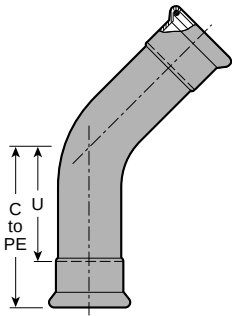


Fitting Size		Dimensions – Inches/mm		Aprx. Weight Each Lbs./kg
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C - PE	Takeout U	
3/4 20	1.050 26,7	3.43 87	2.48 63	0.4 0,2
1 25	1.315 33,7	4.33 110	3.31 84	0.6 0,3
1 1/4 32	1.660 42,4	5.79 147	4.60 117	1.1 0,5
1 1/2 40	1.900 48,3	6.73 171	5.32 135	1.4 0,6
2 50	2.375 60,3	8.19 208	6.38 162	2.3 1,0

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Style 511 45° Elbow (P X P)

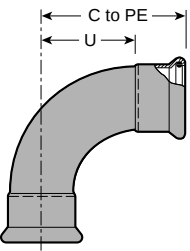
F-_-_- - 511 - Z -_- - P



Fitting Size		Dimensions – Inches/mm		Aprx. Weight Each Lbs./kg
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C - PE	Takeout U	
3/4 20	1.050 26,7	2.44 62	1.50 38	0.3 0,1
1 25	1.315 33,7	3.11 79	2.09 53	0.5 0,2
1 1/4 32	1.660 42,4	4.25 108	3.07 78	0.9 0,4
1 1/2 40	1.900 48,3	5.00 127	3.59 91	1.3 0,6
2 50	2.375 60,3	6.02 153	4.22 107	2.0 0,9

Style 509 Short Tangent 90° Elbow (P X P)

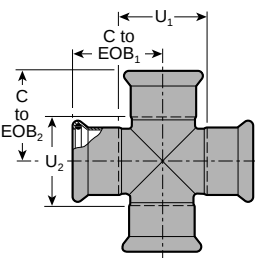
F-_-_- - 509 - Z -_- - P



Fitting Size		Dimensions – Inches/mm		Aprx. Weight Each Lbs./kg
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C - PE	Takeout U	
3/4 20	1.050 26,7	2.83 72	1.88 48	0.3 0,2
1 25	1.315 33,7	3.36 85	2.34 59	0.5 0,2
1 1/4 32	1.660 42,4	4.02 102	2.83 72	0.8 0,4
1 1/2 40	1.900 48,3	4.60 117	3.19 81	1.0 0,5
2 50	2.375 60,3	5.71 145	3.90 99	1.5 0,7

Style 535 Cross (P X P)

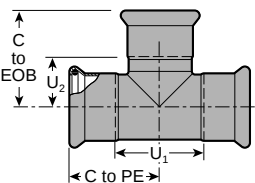
F-_-_- - 535 - Z -_- - P



Fitting Size		Dimensions – Inches/millimeters				Aprx. Wgt. Each Lbs./kg
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C - EOB ₁	C - EOB ₂	Takeout U ₁	Takeout U ₂	
3/4 20	1.050 26,7	1.90 48	1.80 46	1.89 48	1.70 43	0.4 0,2
1 25	1.315 33,7	2.10 53	2.10 53	2.16 55	2.16 55	0.5 0,2
1 1/4 32	1.660 42,4	2.40 61	2.50 64	2.42 62	2.62 67	0.7 0,3
1 1/2 40	1.900 48,3	2.80 71	2.80 71	2.78 71	2.78 71	0.9 0,4
2 50	2.375 60,3	3.40 86	3.60 91	3.17 81	3.58 91	1.4 0,6

Style 520 Tee (P X P X P)

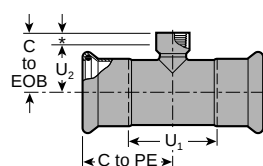
F-_-_- - 520 - Z -_- - P



Fitting Size		Dimensions – Inches/millimeters				Aprx. Wgt. Each Lbs./kg
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C - PE	U ₁	C - EOB	U ₂	
3/4 20	1.050 26,7	1.89 48	1.89 48	1.89 48	0.95 24	0.3 0,1
1 25	1.315 33,7	2.11 54	2.17 55	2.15 55	1.13 29	0.4 0,2
1 1/4 32	1.660 42,4	2.44 62	2.51 64	2.48 63	1.29 33	0.6 0,3
1 1/2 40	1.900 48,3	2.76 70	2.69 68	2.80 71	1.39 35	0.9 0,4
2 50	2.375 60,3	3.39 86	3.17 81	3.62 92	1.81 46	1.4 0,6

Style 520 Tee Reducing Branch (P X P X F)

F-_-_- - 520 - Z -_- - F

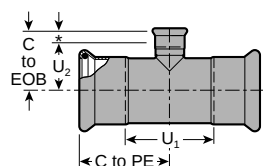


SIZE Nominal Inches mm					Dimensions - Inches/millimeters				Aprx. Wgt. Each Lbs./kg
					C - PE	U ₁	C - EOB	U ₂	
3/4 20	X	3/4 20	X	1/2 15	1.89 48	1.89 48	1.70 43	1.17 30	0.3 0.1
	X	1 25	X	1/2 15	2.11 54	2.17 55	1.68 43	1.15 29	0.4 0.2
			X	3/4 20	2.11 54	2.17 55	1.68 43	1.13 29	0.5 0.2
			X	1 25	2.11 54	2.17 55	2.00 51	1.32 34	0.6 0.3
			X	1/2 15	2.44 62	2.51 64	1.86 47	1.33 34	0.6 0.3
			X	3/4 20	2.44 62	2.51 64	1.86 47	1.31 33	0.6 0.3
1 1/4 32			X	1 25	2.44 62	2.51 64	2.08 53	1.40 36	0.7 0.3
			X	1/2 15	2.76 70	2.69 68	1.98 51	1.45 37	0.8 0.4
			X	3/4 20	2.76 70	2.69 68	1.90 48	1.35 34	0.9 0.4
			X	1 25	2.76 70	2.69 68	2.20 56	1.62 41	0.9 0.4
1 1/2 40			X	1/2 15	3.39 86	3.16 80	2.21 56	1.68 43	1.1 0.5
			X	3/4 20	3.39 86	3.16 80	2.10 53	1.55 39	1.2 0.5
			X	1 25	3.39 86	3.16 80	2.43 62	1.75 45	1.3 0.6
			X	1/2 15	3.39 86	3.16 80	2.21 56	1.68 43	1.1 0.5

*Effective length of threads.

Style 520 Tee Reducing Branch (P X P X P)

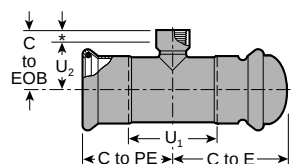
F-_-_- - 520 - Z -_- - P



SIZE Nominal Inches mm					Dimensions - Inches/millimeters				Aprx. Wgt. Each Lbs./kg
					C - PE	U ₁	C - EOB	U ₂	
1 25	X	3/4 20	X	1/2 15	2.11 54	2.17 55	2.03 52	1.08 27	0.4 0.2
	X	1 25	X	1/2 15	2.11 54	2.17 55	2.03 52	1.08 27	0.4 0.2
1 1/4 32	X	3/4 20	X	1/2 15	2.44 62	2.51 64	2.10 53	1.15 29	0.6 0.3
	X	1 25	X	1/2 15	2.44 62	2.51 64	2.20 56	1.18 30	0.6 0.3
1 1/2 40	X	3/4 20	X	1/2 15	2.76 70	2.69 68	2.20 56	1.25 32	0.7 0.3
	X	1 25	X	1/2 15	2.76 70	2.69 68	2.44 62	1.42 36	0.8 0.4
2 50	X	3/4 20	X	1/2 15	3.39 86	3.16 80	2.40 61	1.45 37	1.1 0.5
	X	1 25	X	1/2 15	3.39 86	3.16 80	2.60 66	1.58 40	1.1 0.5
			X	1 1/2 40	3.39 86	3.16 80	3.00 76	1.58 40	1.2 0.5
			X	1 1/2 40	3.39 86	3.16 80	3.00 76	1.58 40	1.2 0.5

Style 520 End-of-Line Tee (P X C X F)

F-_-_- - 520 - Z -_- - C



SIZE Nominal Inches mm					Dimensions - Inches/millimeters					Aprx. Wgt. Each Lbs./kg
					C - PE	U ₁	C - EOB	U ₂	C to E	
1 25	X	@			2.11 54	2.17 55	@	@	2.90 74	0.2 † 0.1
	X	@			2.11 54	2.17 55	@	@	2.90 74	0.2 † 0.1
1 1/4 32	X	@			2.44 62	2.51 64	@	@	3.30 84	0.2 † 0.1
	X	@			2.44 62	2.51 64	@	@	3.30 84	0.2 † 0.1
1 1/2 40	X	@			2.76 70	2.69 68	@	@	3.60 91	0.3 † 0.1
	X	@			2.76 70	2.69 68	@	@	3.60 91	0.3 † 0.1
2 50	X	@			3.39 86	3.16 80	@	@	4.20 107	0.4 † 0.2
	X	@			3.39 86	3.16 80	@	@	4.20 107	0.4 † 0.2

@ Factory assembled cap is added to Style 520 tee with (A) threaded reducing branch or (B) Pressfit reducing branch. Specify run size, outlet size and outlet style (threaded or Pressfit) on order.

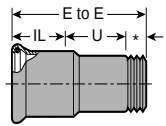
† Add weight of cap to selected reducing tee.

*Effective length of threads.

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Style 580 Adapter Male Threaded (P X M)

F-_-_- - 580 - Z - _ - M

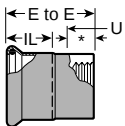


SIZE Nominal Inches mm			Dimensions Inches/millimeters			Aprx. Weight Each Lbs./kg
			E - E	Takeout U	Insertion Length IL	
3/4 20	X	1/2 15	2.53 64	1.05 27	.95 24	0.3 0,1
	X	3/4 20	2.53 64	1.03 26	.95 24	0.4 0,2
	X	1 25	2.84 72	1.21 31	.95 24	0.4 0,2
	X	1 25	2.65 67	1.08 27	1.02 26	0.4 0,2
1 25	X	1/2 15	2.96 75	1.26 32	1.02 26	0.5 0,2
	X	3/4 20	2.96 75	1.26 32	1.02 26	0.5 0,2
1 1/4 32	X	1 1/4 32	3.13 80	1.23 31	1.19 30	0.6 0,3
	X	1 1/2 40	3.35 85	1.22 31	1.42 36	0.8 0,4
2 50	X	2 50	3.93 100	1.36 35	1.81 46	1.2 0,5

*Effective length of threads.

Style 580 Adapter Female Threaded (P X F)

F-_-_- - 580 - Z - _ - F

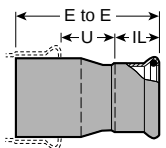


SIZE Nominal Inches mm			Dimensions Inches/millimeters			Aprx. Weight Each Lbs./kg
			E - E	Takeout U	Insertion Length IL	
3/4 20	X	1/2 15	1.84 47	0.36 9	.95 24	0.2 0,1
	X	3/4 20	2.16 55	0.67 17	.95 24	0.3 0,1
	X	1 25	1.96 50	0.40 10	1.02 26	0.4 0,2
	X	3/4 20	1.96 50	0.39 10	1.02 26	0.4 0,2
1 25	X	1 25	2.46 63	0.75 19	1.02 26	0.4 0,2

*Effective length of threads.

Style 550 Reducer Insert (T X P)

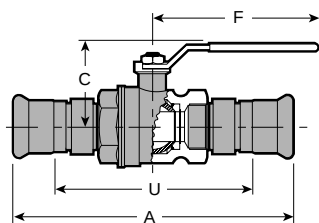
F-_-_- - 550 - Z - _ - T



SIZE Nominal Inches mm			Dimensions Inches/millimeters			Aprx. Weight Each Lbs./kg
			End to End	Takeout U	Insertion Length IL	
1 25	X	3/4 20	2.95 75	0.98 25	.95 24	0.2 0,1
	X	1 1/4 32	3.50 89	1.37 35	.95 24	0.3 0,1
1 1/2 40	X	1 25	3.31 84	1.10 28	1.02 26	0.3 0,1
	X	1 1/4 32	3.66 93	1.22 31	1.02 26	0.4 0,2
2 50	X	1 1/2 40	4.33 110	1.34 34	1.19 30	0.5 0,2
	X	2 50	4.33 110	1.11 28	1.42 36	0.6 0,3

Series 522 Brass Body Ball Valve with Carbon Steel Pressfit Ends (P X P)

V - _ _ _ - 522 - Z - _ - P



Valve Size		Dimensions – Inches/millimeters				C _v (Full Open)	Approx. Wgt. Ea. Lbs./kg
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	E to E A	C	F	Takeout U		
3/4 20	1.050 26,7	6.50 165	1.79 45	3.78 96	4.61 117	25	1.3 0,6
1 25	1.315 33,7	7.62 194	1.95 50	3.78 96	5.57 142	37	2.0 0,9
1 1/4 32	1.660 42,4	8.20 208	2.17 55	3.78 96	5.82 148	50	2.8 1,3
1 1/2 40	1.900 48,3	9.00 229	2.68 68	5.43 138	6.17 157	87	3.7 1,7
2 50	2.375 60,3	10.70 272	2.89 73	5.43 138	7.09 180	110	4.7 2,1

Series 522 Material Specifications

Valve Body: Forged Brass ASTM B-16

Ball: Brass ASTM B-16, chrome plated

Stem: Brass ASTM B-16, chrome plated

Seats: (TFE) Tetrafluoroethylene, rated to +450°F (+232°C)

Handle: Carbon steel, zinc plated

Stem Nut: Carbon steel, zinc plated

Stem Washer: (TFE) Tetrafluoroethylene

O-Ring: Fluoroelastomer

Pressfit Ends: Precision cold drawn carbon steel conforming to Victaulic specifications. Zinc electroplated conforming to ASTM B-633 (external only)

O-Ring Seals: (specify choice*) O-ring seals shall be molded of synthetic rubber.

- **Grade “E” EPDM**

EPDM (Green color code). Temperature range –30°F to +230°F (–34°C to +110°C). Recommended 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 +86°F (+30°C) and hot +180°F (+82°C) potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

- **Grade “T” nitrile**

Nitrile (Orange color code). Temperature range –20°F to +180°F (–29°C to +82°C). Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Not recommended for hot water services over +150°F (+66°C) or for hot dry air over +140°F (+60°C).

- **Optional: Grade “O” fluoroelastomer**

Fluoroelastomer (Blue color code). Temperature range +20°F to +300°F (–7°C to +149°C). Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons within the specified temperature range.

*Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

WARNING

Pressfit products must only be used on services compatible with o-ring and fitting materials. Incompatible services may result in leakage. For services not listed or special services, contact Victaulic for specifications.

APPROVED PIPE

Products in the Pressfit carbon steel system are easily installed on approved Schedule 5 carbon steel pipe using the Pressfit tool.

The Pressfit System requires no special preparation of the pipe ends before assembly. Pipe should be square cut ($\pm 0.030''$) and deburred, if required, to prevent damage to the o-ring during assembly.

For product installation instructions, refer to Pressfit Product Assembly Instructions (I-500) and the appropriate Tool Operating and Maintenance Instructions Manual.

CAUTION

- It is the responsibility of designers of piping systems to verify that an adequate corrosion allowance, corrosion inhibitors or experience confirms system life will be adequate for the intended service. Schedule 5 carbon steel pipe which is compatible with Pressfit products provide corrosion resistance equivalent to ASTM A53, A135 and A795 pipe.
Failure to do so may cause serious personal injury or property damage.

Pressfit System carbon steel products are designed for use only on approved Schedule 5 carbon steel pipe having a maximum yield strength of 45,000 psi (310000 kPa) and maximum hardness of R_b70 .

PIPE SUPPORT

Piping joined with Pressfit System products, like all other piping systems, requires support to carry the weight of pipes and equipment. As for other methods of joining pipes, the support or hanging method must be such as to eliminate undue stresses on joints, piping and other components. Additionally, the method of support must be such as to allow movement of the pipes where required and to provide drainage, etc., as may be specified by the designer.

The maximum hanger spacing corresponds to UL/ULC/FM and ASME B31.1 or B31.9 as noted and should be used with Victaulic Pressfit system products on approved carbon steel pipe.

Pipe Size		Sugg. Max. Span Between Supports - Feet/meters				
Nom. Dia. In./mm	Actual Out. Dia. In./mm	Water Service			Gas/Air Service	
		UL/ULC/FM*	B31.1	B31.9	B31.1	B31.9
$\frac{3}{4}$	1.050	–	7	8	9	8
20	26,7	–	2,1	2,4	2,7	2,4
1	1.315	12	7	9	9	9
25	33,7	3,7	2,1	2,7	2,7	2,7
$1\frac{1}{4}$	1.660	12	7	11	9	11
32	42,4	3,7	2,1	3,4	2,7	3,4
$1\frac{1}{2}$	1.900	12	7	12	9	13
40	48,3	3,7	2,1	3,7	2,7	4,0
2	2.375	12	10	13	13	15
50	60,3	3,7	3,1	4,0	4,0	4,6

*Carbon steel only.