



1.0 PRODUCT DESCRIPTION

COUPLING

Available Sizes

- 2 – 8"/DN50 – DN200

NOTE

- Sizes consistent with Australian Standard copper tubing.

Pipe Material

- Joins Types B and D Australian Standard copper tubing in accordance with AS 1432.

Maximum Working Pressure

- 260 psi/1790 kPa/17.9 bar
- Working pressure dependent on material, wall thickness and size of pipe.

Operating Temperature

- -30°F to +250°F/-34°C to +110°C

Function

- Exclusively for use with fittings, valves, accessories and pipe which feature ends formed with the Australian Standard Copper Groove profile (see section 7.0 for Reference Materials).
- Provides a rigid pipe joint designed to restrict axial and angular movement on copper tubing.
- This product is specifically designed to join roll grooved Types B and D Australian Standard AS 1432 copper tubing.

Pipe Preparation

- Victaulic has designed tools for grooving Australian Standard AS 1432 copper tubing. Tools must be equipped only with Victaulic rolls designed specifically for grooving AS 1432 copper tubing. For in-place grooving of tubing, the VE26AC is available. Australian copper roll sets must be used to groove the copper tubing. DO NOT use rolls intended for light wall stainless steel, aluminum, PVC or steel pipe.
- A Go/No-Go Groove Diameter Cable for Copper Tube is available for taking circumferential measurements. See [Submittal 24.01](#): Victaulic Pipe Preparation Tools for more information.

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	

1.0 PRODUCT DESCRIPTION (Continued)

FITTINGS

Available Sizes

- 90° and 45° Elbows: 2 – 4"/DN50 – DN100
- Long Radius 90° and 45° Elbows: 2 – 6"/DN50 – DN150
- Tee and Cap: 2 – 6"/DN50 – DN150
- Concentric Reducer: 2 ½ – 6"/DN65 – DN150

NOTE

- Sizes consistent with Australian Standard copper tubing.

Maximum Working Pressure

- Fitting pressure ratings are equivalent to the pressure ratings of the coupling and pipe used to install them (see section 7.0 for Reference Materials).

Function

- Connects pipe, provides changes in direction, and adapts sizes or components in copper tubing systems.
- All fittings are supplied with the Australian Standard Copper Groove profile. Fittings are exclusively for use with Victaulic couplings, valves, accessories and pipe which feature ends formed with the Australian Standard Copper Groove profile.

Pipe OD Requirements

- Victaulic copper fittings are designed for Australian Standard copper tubing sizes.

2.0 CERTIFICATION/LISTINGS



NOTE

- See [Submittal 10.01](#): Victaulic Products for Fire Protection Piping Systems - Regulatory Approval Reference Guide for details.

3.0 SPECIFICATIONS - MATERIAL

COUPLING

Housing: 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.

Housing Coating: Copper colored alkyd enamel.

Gasket: Grade “EHP” FlushSeal® EPDM

EPDM (Red and Green stripes). Temperature range –30°F to +250°F/–34°C to +110°C. Recommended for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air, and many chemical services. WaterMark certified against Australian Standard AS 3688. NOT RECOMMENDED FOR PETROLEUM SERVICES.

NOTE

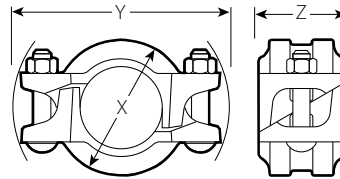
- Additional gasket styles are available. Contact Victaulic for details.

FITTINGS

Wrought copper fittings manufactured in accordance with AS 3688.

4.0 DIMENSIONS

Australian Standard Copper Coupling Style 606-AS



Style 606-AS Australian
Standard Copper Coupling

Size		Pipe End Separation ¹	Bolt/Nut ²		Dimensions			Weight
Nominal DN	Actual Outside Diameter mm inches	Allowable mm inches	Qty.	Size inches	X mm inches	Y mm inches	Z mm inches	Approximate (Each) kg lb
DN50	50.8 2.000	0.8 0.03	2	3/8 x 2 Lg.	79 3.13	124 4.88	48 1.88	0.6 1.3
DN65	63.5 2.500	0.8 0.03	2	3/8 x 2 Lg.	92 3.63	137 5.38	48 1.88	0.9 2.0
DN80	76.2 3.000	0.8 0.03	2	1/2 x 2 3/4 Lg.	105 4.13	165 6.50	48 1.88	0.9 2.0
DN100	101.6 4.000	4.6 0.18	2	1/2 x 2 3/4 Lg.	133 5.25	191 7.50	51 2.00	1.4 3.1
DN125	127.0 5.000	4.6 0.18	2	5/8 x 3 1/4 Lg.	159 6.25	235 9.25	51 2.00	2.2 4.9
DN150	152.4 6.000	4.6 0.18	2	5/8 x 3 1/4 Lg.	184 7.25	257 10.13	51 2.00	2.5 5.5
DN200	203.2 8.000	4.6 0.18	2	5/8 x 4 1/4 Lg.	241 9.50	308 12.13	51 2.00	3.5 7.7

¹ Number of bolts required equals number of housing segments.

² For field installation only. Style 606-AS is essentially rigid and does not accommodate expansion or contraction.

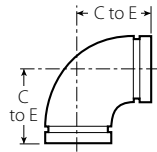
4.1 DIMENSIONS

Elbows, Tee

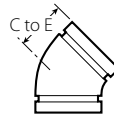
No. 610-AS 90° Elbow

No. 611-AS 45° Elbow

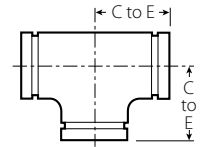
No. 620-AS Tee



No. 610-AS



No. 611-AS



No. 620-AS

Size		No. 610-AS 90° Elbow		No. 611-AS 45° Elbow		No. 620-AS Tee	
Nominal DN	Actual Outside Diameter mm inches	C to E mm inches	Approximate Weight (Each) kg lb	C to E mm inches	Approximate Weight (Each) kg lb	C to E mm inches	Approximate Weight (Each) kg lb
DN50	50.8 2.000	76 3.00	0.3 0.7	46 1.80	0.2 0.4	62 2.43	0.2 0.4
DN65	63.5 2.500	89 3.50	0.4 0.9	51 2.00	0.2 0.4	72 2.83	0.3 0.7
DN80	76.2 3.000	102 4.00	0.6 1.3	56 2.20	0.3 0.7	80 3.13	0.6 1.3
DN100	101.6 4.000	127 5.00	0.9 2.0	67 2.63	0.5 1.1	105 4.13	1.1 2.4
DN125	127.0 5.000	-	-	-	-	118 4.63	1.4 3.1
DN150	152.4 6.000	-	-	-	-	130 5.13	2.3 5.1

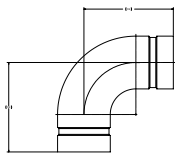
NOTES

- Couplings available in 50 – 200mm/2 – 8" to join Types B and D copper tube in accordance with AS 1432.
- Fittings available in 50 – 150mm/2 – 6" consistent with Type B copper tube. Fittings are manufactured in accordance with AS 3688.

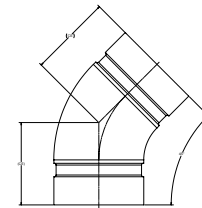
Elbows

No. 610-LR-AS 90° Elbow

No. 611-LR-AS 45° Elbow



No. 610-LR-AS



No. 611-LR-AS

Size		No. 610-LR-AS 90° Elbow		No. 611-LR-AS 45° Elbow	
Nominal DN	Actual Outside Diameter mm inches	C to E mm inches	Approximate Weight (Each) kg lb	C to E mm inches	Approximate Weight (Each) kg lb
DN50	50.8 2.000	102 4.00	0.3 0.7	57 2.25	0.2 0.4
DN65	63.5 2.500	121 4.75	0.4 0.9	65 2.56	0.3 0.7
DN80	76.2 3.000	140 5.50	0.8 1.8	73 2.88	0.5 1.1
DN100	101.6 4.000	178 7.00	1.4 3.1	88 3.46	0.8 1.8
DN125	127.0 5.000	216 8.50	2.0 4.4	104 4.10	1.2 2.6
DN150	152.4 6.000	253 10.00	3.2 7.1	119 4.70	1.8 4.0

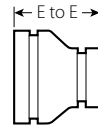
NOTES

- Couplings available in 50 – 200mm/2 – 8" to join Types B and D copper tube in accordance with AS 1432.
- Fittings available in 50 – 150mm/2 – 6" consistent with Type B copper tube. Fittings are manufactured in accordance with AS 3688.

4.2 DIMENSIONS

Concentric Reducer

No. 650-AS Grv. x Grv.



No. 650-AS

Nominal Size DN inches	Actual Size mm inches	No. 650-AS Grv. x Grv.	
		E to E mm inches	Approx. Weight (Each) kg lb
DN65 2½	x 50.8 2.0	86	0.1
		3.38	0.2
DN80 3	x 50.8 2.0	86	0.2
		3.38	0.4
	x 63.5 2.5	86	0.2
		3.38	0.4
DN100 4	x 50.8 2.0	92	0.3
		3.63	0.7
	x 63.5 2.5	92	0.3
		3.63	0.7
	x 76.2 3.0	92	0.3
		3.63	0.7
DN125 5	x 63.5 2.5	–	–
	x 76.2 3.0	102	0.4
		4.00	0.9
	x 101.6 4.0	92	0.4
		3.63	0.9
DN150 6	x 76.2 3.0	102	0.7
		4.00	1.5
	x 101.6 4.0	102	0.7
		4.00	1.5
	x 127.0 5.0	102	0.7
		4.00	1.5

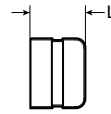
NOTES

- Couplings available in 50 – 200mm/2 – 8" to join Types B and D copper tube in accordance with AS 1432.
- Fittings available in 50 – 150mm/2 – 6" consistent with Type B copper tube. Fittings are manufactured in accordance with AS 3688.

4.3 DIMENSIONS

Cap

Style 660-AS



Style 660-AS

Size		Dimensions		Approximate Weight (Each)
Nominal DN	Actual Outside Diameter mm inches	Thickness "L" mm inches		
DN50	50.8	40	0.1	
	2.000	1.57	0.2	
DN65	63.5	40	0.1	
	2.500	1.57	0.2	
DN80	76.2	55	0.2	
	3.000	2.17	0.4	
DN100	101.6	55	0.3	
	4.000	2.17	0.7	
DN125	127.0	55	0.4	
	5.000	2.17	0.9	
DN150	152.4	55	0.7	
	6.000	2.17	1.5	

NOTES

- Couplings available in 50 – 200mm/2 – 8” to join Types B and D copper tube in accordance with AS 1432.
- Fittings available in 50 – 150mm/2 – 6” consistent with Type B copper tube. Fittings are manufactured in accordance with AS 3688.

5.0 PERFORMANCE

Style 606-AS Australian Standard Coupling

The Victaulic copper connection system has been thoroughly tested on Types B and D copper tubing to establish the pressure ratings shown in the table below.

Pipe		Type “B” to AS 1432		Type “D” to AS 1432	
Nominal Size DN	Actual Size mm inches	Maximum Joint Working Pressure ³ kPa psi	Maximum Permis. End Load ³ N lb	Maximum Joint Working Pressure ³ kPa psi	Maximum Permis. End Load ³ N lb
DN50	50.8	1790	3650	650	1290
	2.000	260	820	94	290
DN65	63.5	1450	4580	650	2050
	2.500	210	1030	94	460
DN80	76.2	1620	7390	650	2940
	3.000	235	1660	94	660
DN100	101.6	1210	9790	650	5250
	4.000	176	2200	94	1180
DN125	127.0	970	12230	650	8190
	5.000	141	2750	94	1840
DN150	152.4	1000	18450	650	11790
	6.000	145	4100	94	2650
DN200	203.2	730	23710	–	–
	8.000	106	5330		

³ Working Pressure and End Load are total, from all internal and external loads, based on Australian Standard copper tubing of the table indicated, standard roll grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe. WARNING: FOR ONE-TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown.

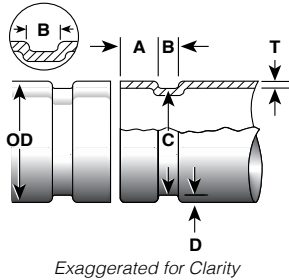
NOTE

- For use on other Australian Standard copper tubing, contact Victaulic.

5.1 PERFORMANCE

Groove Specifications

Australian Standard Copper Tubing



Size	Dimensions									Groove Depth "D" ⁸ (ref.)	Max Allow. Flare Diameter "F" ⁹
	Actual OD ⁴		Gasket Seat "A" ⁵			Groove Width "B" ⁶		Groove Diameter "C" ⁷			
Nominal DN	Max. mm inches	Min. mm inches	Basic mm inches	Max. mm inches	Min. mm inches	Max. mm inches	Min. mm inches	Max. mm inches	Min. mm inches		
DN50	50.80	50.67	15.87	16.64	15.11	8.38	7.62	48.21	47.70	1.25	53.06
	2.000	1.995	0.625	0.655	0.595	0.330	0.300	1.898	1.878	0.049	2.089
DN65	63.50	63.35	15.87	16.64	15.11	8.38	7.62	60.88	60.38	1.27	65.83
	2.500	2.494	0.625	0.655	0.595	0.330	0.300	2.397	2.377	0.050	2.592
DN80	76.20	76.02	15.87	16.64	15.11	8.38	7.62	73.56	73.05	1.27	78.51
	3.000	2.993	0.625	0.655	0.595	0.330	0.300	2.896	2.876	0.050	3.091
DN100	101.60	101.35	15.87	16.64	15.11	8.38	7.62	98.78	98.27	1.35	103.88
	4.000	3.990	0.625	0.655	0.595	0.330	0.300	3.889	3.869	0.053	4.090
DN125	127.00	126.75	15.87	16.64	15.11	8.38	7.62	123.67	123.16	1.60	128.77
	5.000	4.990	0.625	0.655	0.595	0.330	0.300	4.869	4.849	0.063	5.070
DN150	152.40	152.10	15.87	16.64	15.11	8.38	7.62	149.05	148.54	1.60	154.66
	6.000	5.988	0.625	0.655	0.595	0.330	0.300	5.868	5.848	0.063	6.089
DN200	203.20	202.80	15.87	16.64	15.44	8.38	7.62	199.80	199.29	1.60	205.80
	8.000	7.990	0.625	0.655	0.595	0.330	0.300	7.866	7.846	0.063	8.102

- ⁴ Outside diameter: The outside diameter and tolerances of roll grooved tubing shall be in accordance with the standard referenced above. The maximum allowable tolerance from square cut ends is 0.030/0.76 mm for 2 – 3¹/₂ – 80 mm; 0.045/1.14 mm for 4 – 8¹/₁₀ – 200 mm, measured from true square line.
- ⁵ Gasket seat: The tubing surface shall be free from indentations, roll marks and projections from the end of the tubing to the groove to provide a leak-tight seal for the gasket. All loose scale, dirt, chips and grease must be removed.
- ⁶ Groove width: The bottom of the groove shall be free of loose dirt, chips, and scale that may interfere with proper coupling assembly.
- ⁷ Groove outside diameter: The groove must be uniform depth for the entire tubing circumference. The groove must be maintained within the "C" diameter tolerance listed.
- ⁸ Groove depth: For reference only. The groove must conform to the groove diameter "C" listed.
- ⁹ Maximum allowable end flare diameter. Measured at the most extreme tubing end diameter.

NOTES

- Always refer to Tool Operating Instructions and Groove Specification notes before proceeding with pipe preparation.
- A Go/No-Go Groove Diameter Cable for Copper Tube is available for taking circumferential measurements. See [Submittal 24.01](#): Victaulic Pipe Preparation Tools for more information.

