Australian Standard Copper Products





PRODUCT DESCRIPTION 1.0

COUPLING

Available Sizes

• 2 - 8"/DN50 - DN200

· 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 <u>Submittal 24.01:</u> 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	Spec Section	Paragraph	
Submitted By	Date	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: 2½ 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.

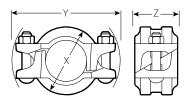
FITTINGS

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			Weight			
Nominal	Actual Outside Diameter	Allowable	Qty.	Size	X	Y	Z	Approximate (Each)
DN	mm inches	mm inches		inches	mm inches	mm inches	mm inches	kg Ib
DN50	50.8 2.000	0.8 0.03	2	3% 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% 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	½x 2 ¾ Lg.	105 4.13	165 6.50	48 1.88	0.9 2.0
DN100	101.6 4.000	4.6 0.18	2	½x 2 ¾ Lg.	133 5.25	191 7.50	51 2.00	1.4 3.1
DN125	127.0 5.000	4.6 0.18	2	%x 3 ¼ Lg.	159 6.25	235 9.25	51 2.00	2.2 4.9
DN150	152.4 6.000	4.6 0.18	2	%x 3 ¼ 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 ¼ Lg.	241 9.50	308 12.13	51 2.00	3.5 7.7

Number of bolts required equals number of housing segments.



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

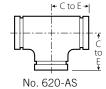
4.1 DIMENSIONS

Elbows, Tee

No. 610-AS 90° Elbow No. 611-AS 45° Elbow No. 620-AS Tee







No. 610-AS

No. 611-AS

. 611-AS

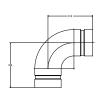
Size			No. 610-AS 90° Elbow		11-AS Elbow	No. 620-AS Tee		
Nominal	Actual Outside Diameter	C to E	Approximate Weight (Each)	C to E	Approximate Weight (Each)	C to E	Approximate Weight (Each)	
DN	mm	mm	kg	mm	kg	mm	kg	
	inches	inches	Ib	inches	Ib	inches	Ib	
DN50	50.8	76	0.3	46	0.2	62	0.2	
	2.000	3.00	0.7	1.80	0.4	2.43	0.4	
DN65	63.5	89	0.4	51	0.2	72	0.3	
	2.500	3.50	0.9	2.00	0.4	2.83	0.7	
DN80	76.2	102	0.6	56	0.3	80	0.6	
	3.000	4.00	1.3	2.20	0.7	3.13	1.3	
DN100	101.6	127	0.9	67	0.5	105	1.1	
	4.000	5.00	2.0	2.63	1.1	4.13	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

- \bullet Couplings available in $50-200\,\text{mm/2}-8$ " to join Types B and D copper tube in accordance with AS 1432.
- Fittings available in 50 150 mm/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







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

NOTES

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



4.2 DIMENSIONS

Concentric Reducer

No. 650-AS $Grv. \times Grv.$



No. 650-AS

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

NOTES

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



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4.3 DIMENSIONS

Cap

Style 660-AS



Style 660-AS

	Size	Dimensions			
Nominal	Actual Outside Diameter	Thickness "L"	Approximate Weight (Each)		
DN	mm	mm	kg		
	inches	inches	Ib		
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 50 200 mm/2 8" to join Types B and D copper tube in accordance with AS 1432.
- Fittings available in 50 150 mm/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.

P	Pipe		to AS 1432	Type "D" to AS 1432			
Nominal Size DN	Size Size		Maximum Permis. End Load ³ N Ib	Maximum Joint Working Pressure ³ kPa psi	Maximum Permis. End Load ³ N Ib		
DN50	50.8 2.000	1790 260	1790 3650		1290 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	DN150 152.4		18450	650	11790		
	6.000		4100	94	2650		
DN200			23710 5330	_	-		

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 1½ times the figures shown.

NOTE

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

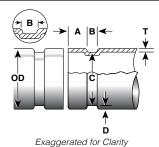
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5.1 PERFORMANCE

Groove Specifications

Australian Standard Copper Tubing



		Dimensions									
Size	Actua	I OD⁴	Gá	asket Seat "A	\ "5	Groove W	/idth "B" ⁶	Groove Dia	meter "C" ⁷		Max
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	Groove Depth "D" ⁸ (ref.)	Allow. Flare Diameter "F" ⁹
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

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 – 3"/50 – 80 mm; 0.045"/1.14 mm for 4 – 8"/100 – 200 mm, measured from true square line.

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 <u>Submittal 24.01</u>: Victaulic Pipe Preparation



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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.

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.

Maximum allowable end flare diameter. Measured at the most extreme tubing end diameter.

6.0 NOTIFICATIONS

Not applicable - contact Victaulic with any questions.

7.0 REFERENCE MATERIALS

05.01: Victaulic Seal Selection Guide

24.01: Victaulic Pipe Preparation Tools

25.06: Victaulic Copper Tubing Roll Groove Specifications

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.

Installatio

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.

Warranty

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

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