

# Water Supply and Sewerage Approved Products Manual 2024

Water Operations – Water Property Connections

Section W0 01

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Abbreviation	In full
<b>AS</b>	Australian Standard
<b>AS/NZS</b>	Australian / New Zealand Standard
<b>WSA</b>	Water Services Association
<b>WSA PS</b>	Water Services Association Product Specification

# 1 Pipes


Shall comply with the following standards and specification:

- AS 1432: Copper tubes for plumbing, gasfitting and drainage applications.
- WSA PS – 214: Copper (Cu) property service pipes for pressure applications – Drinking water and non-drinking water supply.
- AS/NZS 4020: Testing of products for use in contact with drinking water.

Notes:

- Copper shall be hard drawn Type A copper.
- Used for connections only.
- DN20 – DN50 sizes only.

## 1.1 Copper tube – hard drawn Type A

Compliance	Size DN (mm)	Length (m)	Products	Manufacturers
AS 1432 WSA PS - 214 AS 4020	20 25 50	6		Kembla Austral Wright

## 2 Fittings

### 2.1 Fitting notes

Shall comply with the following standards and specification:

- AS 1432: Copper tubes for plumbing, gasfitting and drainage applications.
- WSA PS – 214: Copper (Cu) property service pipes for pressure applications – Drinking water and non-drinking water supply.
- AS/NZS 4020: Testing of products for use in contact with drinking water.

Notes:

- The manufacturer's brand name or model number to be shown on the fitting.
- Brass fittings shall be dezincification resistant (DR) brass.
- All fittings must be WaterMark certified.
- Shall only be fitted using approved manufacturers press gun.

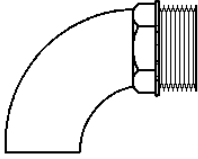
### 2.2 Press fittings (copper)

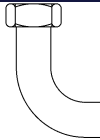
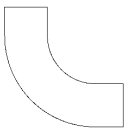
Fitting type	Size DN (mm)	Products	Manufacturers
Slip coupling	20 25		Conex Bänninger - B press Viega - ProPress Forza - V press MM Kembla - KemPress
45 degree elbow			
90 degree elbow			

Fitting type	Size DN (mm)	Products	Manufacturers
Reducing coupling			
Female coupling			
Male coupling			
Equal Tee			


## 2.3 Bends

**Notes:** Capillary fittings shall be dezincification resistant (DR) brass.

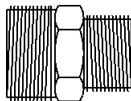
Bend type	Size DN (mm)	Products	Manufacturers
MI - CC elbow (Male iron-flared compression/capillary)	20 25 50		Austworld Thomas Gooden Kembla
FI - CC elbow (Female iron-flared compression/capillary)			

Bend type	Size DN (mm)	Products	Manufacturers
UN-C bend (Union nut-capillary)			
C-C bend (Capillary-capillary)			

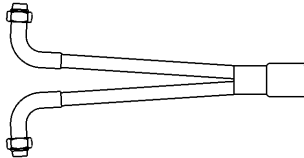
## 2.4 Tees

Tee type	Size DN (mm)	Products	Manufacturers
C-C reducing tee (Capillary-capillary)	25 x 20 x 20		Kembla Ardent

## 2.5 Reducers

Reducer type	Size DN (mm)	Products	Manufacturers
MI-MI reducing nipple (Male iron-male iron)	50 x 40		Kembla Thomas Gooden Austworld

## 2.6 Breaching piece

Reducer type	Size DN (mm)	Products	Manufacturers
Breaching piece (Union nuts breached ends – capillary other end)	25 x 25 x 50		Rhino Reece/Viadux

# 3 Tapping bands

Shall comply with the following standards and specification:

- AS/NZS 4793: Mechanical tapping bands for waterworks purposes.
- WSA PS – 310: Tapping bands – Mechanical for pressure applications - Drinking water and non-drinking water supply.
- AS/NZS 4020: Testing of products for use in contact with drinking water.

### Notes:

- The below sizes cover reticulation mains; tapping of larger mains for consumers is not normally undertaken and requires approval from a Power and Water representative.
- Direct tapping (i.e. without a tapping band) of DI, PVC, CI and AC pipes is not permitted.

Size DN (mm)	Products	Manufacturers
150 x 20 150 x 25 225 x 20 225 x 25		AVK – Rigid-tap KT4 tapping saddle AVK - Multi-tap and vari-tap Derwent – Kawandah Milnes – Gunmetal

**Notes:** Tapping bands to be picked appropriately (i.e. rigid configuration for rigid pipe).

## 4 DR brass ferrules

Shall comply with the following standards and specification:

- AS 3718: Water supply - tap ware.
- WSA 134: Industry standard for tapping ferrules.
- AS/NZS 4020: Testing of products for use in contact with drinking water.

**Notes:**

- Standard ferrule
- Pressure Nominal (PN16).

Size DN (mm)	Products	Manufacturers
20 25		Austworld RMC Reliance Strongcast Thomas Gooden Milnes

## 5 DR brass ferrules for live tapping


Shall comply with the following standards and specification:

- AS 3718: Water supply - tap ware.
- WSA 134: Industry standard for tapping ferrules.
- AS/NZS 4020: Testing of products for use in contact with drinking water.

**Notes:**

- Tapping, Pressure Ferrule, Non-Return (TPFNR) with complete bonnet assembly.
- Pressure Nominal (PN16).

- Must be WaterMark certified.

Size DN (mm)	Products	Manufacturers
20 25		RMC Reliance valves TPFNR Strongcast TPFNR Thomas Gooden TPFNR Milnes TPFNR

## 6 DR brass right angle valve (lockable)

Shall comply with the following standards and specification:

- AS 4796: Water supply - Metal-bodied and plastic-bodied ball valves for property service connection.
- WSA PS – 274: Ball valves for pressure applications – Drinking water and non-drinking water supply.
- AS/NZS 4020: Testing of products for use in contact with drinking water.

Notes:

- Pressure Nominal (PN16).
- Inline and right angle ball valves.
- All meter taps must be WaterMark certified.
- DR brass body with stainless steel ball.

Size DN (mm)	Products	Manufacturers
20 25		Austworld RMC Reliance Thomas Gooden



## 7 Straight ball valve (lockable)

Size DN (mm)	Products	Manufacturers
20 25 40 50		AAP Strongcast Zetco SP Valves & Fittings

**Notes:** Straight ball valves and handle is to be stainless steel. All products must have a watermark certificate.

## 8 Gate valves

Size DN (mm)	Products	Manufacturers
40 50		AAP Zetco

**Notes:** Gate valves to be stainless steel. All products must have a watermark certificate.

## 9 Specifications

### 9.1 Copper tubes

Shall comply with the following standard and specification:

- AS 1432:2004 – Copper tubes for plumbing, gasfitting and drainage applications.
- WSA PS – 214 – Copper (Cu) Property Service Pipes for Pressure Applications – Drinking Water and Non-Drinking Water Supply.

**Design:**

Copper temper is to be hard drawn (as opposed to bendable or annealed). The wall thickness is to be to type A.

**Jointing:**

Capillary and press fit.

**Wall thickness:**

Size:	Minimum:	Standard:	Maximum:
DN20	1.21 mm	1.42 mm	1.63 mm
DN25	1.39 mm	1.63 mm	1.88 mm
DN50	1.39 mm	1.63 mm	1.88 mm

**Outer Diameter (OD) and Ovality:**

Size:	Minimum OD:	Maximum OD:	Ovality:
DN20	18.97 mm	19.05 mm	0.20 mm
DN25	25.30 mm	25.40 mm	0.28 mm
DN50	50.67 mm	50.80 mm	0.64 mm

**Tube hardness:**

100 Vickers Pyramid Number (HV).

**Safe working pressure:**

Size:	Pressure (MPa):
DN20	5.56
DN25	4.75
DN50	2.31

**Colour legend markings:**

- Manufacturer's name or trademark
- Country of origin
- Nominal size
- Thickness type A
- Number of applicable standard (i.e. 'AS 1432')
- Product certification mark on pipe barrel.

**Colour marking method:**

Continuous green (type A) mark and a legend repeated at intervals not exceeding 1 m throughout the length. Legend can be in the colour of the continuous mark or black. Minimum height of lettering to be 4.5 mm.

**Incision legend markings:**

- Manufacturer's name or trademark
- Country of origin
- Nominal size
- Thickness type A
- Number of applicable standard (i.e. 'AS 1432')
- Product certification mark on pipe barrel.

**Incision marking method:**

Permanently marked at intervals not exceeding 0.5 m by incising with a legend of minimum lettering height of 3 mm for DN20 and DN25 and 4 mm for DN50.

**Use limits:**

Do not use where conveyed water is highly aggressive (e.g. low pH).

**Lead limits:**

In accordance with the Australian Building Codes Board (ABCB) lead shall not exceed a weighted average lead content of 0.25% by 2026.

## 9.2 Copper alloy ferrule taps

**Shall comply with the following standard and specification:**

- AS/NZS 3718:2005 – Water Supply – Tap Ware
- WSA PS - 274 Ball Valves for Pressure Applications – Water Supply.

**Design:**

- Copper alloy ferrule taps are connected to the tapping band.
- Copper alloy ferrule taps are to have a rising stem, be clockwise closing and have loose jumper valves.
- Copper alloy components in contact with water to be dezincification resistant to AS 2345.

**End connections:**

End:	Connection:
Inlet	Male iron (tapered - AS 1722.1 series R)
Outlet	Right angled union to AS 3688 to connect with ferrule bend supplied complete with tap.

**Ferrule bends:**

To comprise a union nut to AS 3688 at one end for connection to the ferrule tap and a short socket to AS 3688 at the other end for a capillary joint to copper tube using brazing alloy.

**Working pressure:**

PN16 or 1.6 MPa.

**Markings:**

- Manufacturer's name or mark
- Licence number for AS 3718 on the head and the body
- The mark of the certifying body
- The letters DR on tap body and head
- Number of applicable standard (i.e. 'AS/NZS 3718')
- Arrow indicating direction of flow.

**Marking method:**

Legibly and visibly marked.

**Lead limits:**

In accordance with the Australian Building Codes Board (ABCB) lead shall not exceed a weighted average lead content of 0.25% by 2026.

## 9.3 Tapping bands for DI and PVC pipes

**Shall comply with the following standard and specification:**

- AS 4793:2020 - Mechanical tapping bands for waterworks purposes
- WSA PS 310 - Tapping bands – mechanical for pressure applications – water supply

**Design:**

- The tapping band is to comprise two halves, which are fastened around the pipe using bolts and nuts.
- The tapping band is to have a threaded off-take or outlet either integral with or separate to the tapping body.
- The tapping band is to conform to the tolerances of pipe diameter and ovality for the pipe material it is designed for.
- The tapping band is to prevent pipe deflection exceeding 3% of the pipe internal diameter.
- Metallic tapping bands are to provide electrical discontinuity for use on metallic pipes with current flow restricted to 0.2 milliamps at 20 V DC.
- Tapping bands for cast iron and ductile iron pipes are to have means to prevent tuberculation of the tapping point with inserts that provide a positive restraint and terminate within the cement mortar pipe lining.

**Operating pressure:**

A maximum of 1.6 MPa.

**Offtake:**

Parallel or tapered internal threads to AS 1722.1 Series RP or RC (tapered internal thread preferred for tapping bands).

**Body markings:**

- Manufacturer's name or trademark
- Batch identification
- Nominal diameter (DN) of tapping band
- Product certification mark
- Outlet tapping size and type (eg. parallel [RP] or tapered [RC])
- Pipe types and PN rating(s) for which the tapping band is suitable
- Number of applicable standard (i.e. 'AS 4793').

**Marking method:**

Manufacturer's name or trademark and batch identification shall be clearly and permanently marked on the body of the tapping band. The other items may be printed on an adhesive labels attached to the body (except adhesive labels shall not be applied to stainless steel components) or printed on the tapping band packaging.

## Contact

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