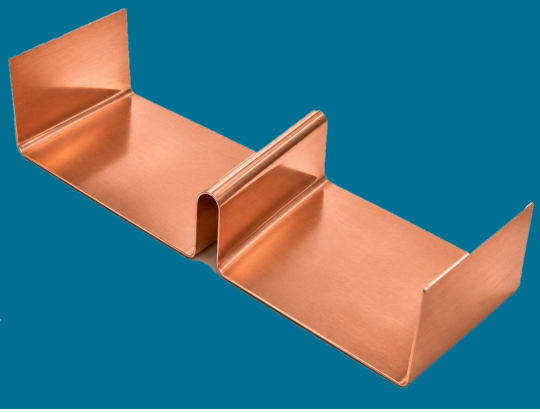
UNISTOP® COPPER

COPPER WATERSTOP



Product Features

UNISTOP® COPPER WATERSTOP range is manufactured from phosphorus non-arsenical copper alloy, 1 mm or 1.2 mm thick (other thicknesses on request), complying with international standards such as AS 1566 and BS EN 1172. It provides long-term performance and effective protection against water leakage in concrete structures.

UNISTOP® COPPER WATERSTOP is designed to be cast into construction and expansion joints to prevent the passage of liquids under pressure. Its specially designed profile creates a tortuous path, making it more difficult for liquids to travel across the joint and penetrate the concrete structure.

UNISTOP® COPPER WATERSTOP is available in a wide range of sizes and profiles to suit various project requirements. It is supplied in straight lengths, together with factory-produced intersections, to minimise on-site heat jointing. The appropriate size and profile can be selected according to the type of structure, joint configuration, and intended application.

Advantages

Withstands very high hydrostatic heads of water pressure
High grade performance
Long durability
Resistant to sea water, salt solution, potable, sewage water and chemicals
Excellent corrosion resistance
High mechanical strength
Reliable watertight sealing

Fields Of Application

Dams & Spillways	Water & Sewerage Treatment Plants
Culverts & Drainage Structures	Tunnels & Subways
Bridges & Viaducts	Basements & Underground Structures
Reservoirs & Water Retaining Structures	Power Plants & Industrial Structures
Marine & Coastal Structures	Joints Exposed to High Temperature

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

UNISTOP® COPPER WATERSTOP

Technical Properties

Property	Test Method	Result
Copper (Cu)	JIS H 3100 : 2012	99.9%
Hardness HV	JIS H 3100 : 2012	83
Tensile Strength	JIS H 3100 : 2012	270 N/mm^2
Elongation A50mm	JIS H 3100 : 2012	34%

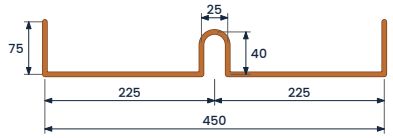
(All values given are subject to 5-10% tolerance.)

Physical Properties

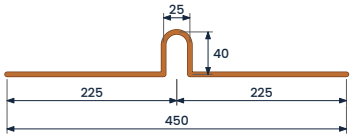
Material	:	Phosphorus Non-Arsenical Copper Alloy
Colour	:	Copper
Thickness	:	1 mm / 1.2 mm
Packaging	:	2m / length 4m / length *(other thicknesses and custom lengths available upon request)

Typical Drawing & Profiles

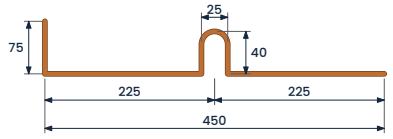
A TYPE A — Dimensions in mm



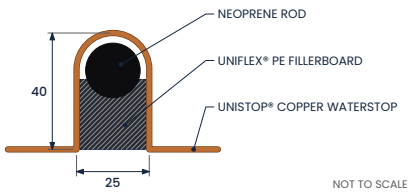
B TYPE B — Dimensions in mm



C TYPE C — Dimensions in mm



F CENTRE FOLD DETAIL — Not to scale



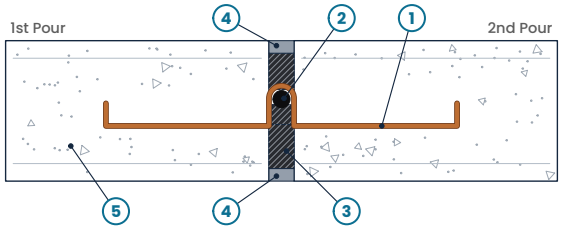
*(All values given are subject to 5-10% tolerance.) / *(Custom made profile available upon request)

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

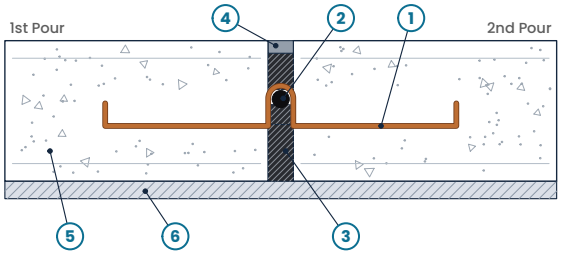
UNISTOP® COPPER WATERSTOP

Typical Joint Details

A EXPANSION JOINT — Wall / susp. slab · NTS



B EXPANSION JOINT — Slab on ground · NTS



LEGEND & NOTES

1. UNISTOP® COPPER WATERSTOP (TYPE A)
2. Neoprene rod in fold crown
3. UNIFLEX® PE Fillerboard
4. UNISEAL® Joint Sealant
5. Reinforced concrete (by others)
6. Lean concrete blinding (by others)

All details not to scale.
Fold centred on the joint line, half the width in each pour.
Joint width, member thickness and reinforcement as per the project engineer.

Health & Safety

Installation of **UNISTOP® COPPER WATERSTOP** involves brazing, which is a hot-work process. Keep all flammable materials clear of the work area, keep a fire extinguisher nearby, and follow the site's hot-work procedures. Brazing alloy and flux produce fumes that are harmful if inhaled, so work in a well-ventilated area, use local exhaust ventilation in enclosed spaces, and wear a suitable respirator where ventilation is inadequate.

Installers should wear safety goggles with a suitable filter shade, heat-resistant gloves and long-sleeved overalls, and use cut-resistant gloves when handling or cutting the copper strip, as its edges are sharp. Allow brazed joints to cool before handling.

Store and use gas cylinders upright and secured, and check hoses and fittings for leaks before use. Avoid skin and eye contact with flux; if contact occurs, wash with clean water and seek medical attention if irritation persists. Refer to the Material Safety Data Sheets (MSDS) of the brazing alloy and flux for detailed health and safety information.

This technical data sheet is given in good faith and does not guarantee the application work. All Unity Reliance technical data sheets & method statements are updated on a regular basis and can be subject to change without notice. It is the user's responsibility to obtain the latest version of the information required.

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

UNISTOP® COPPER WATERSTOP

Installation Procedures

1 Positioning & Fixing | 2 Preparation | 3 Brazing | 4 Inspection & Concreting

Step 1
POSITIONING & FIXING

Position the **UNISTOP® COPPER WATERSTOP** with the centre fold on the joint line, so that half of the waterstop width is cast into each pour.

Fix the flanges securely to the reinforcement or formwork at regular intervals so that the waterstop cannot move or tilt during concrete placement.

Use factory-made intersections at all changes of direction. Site joints are made on straight runs only.

At expansion joints, place **UNIFLEX® PE** fillerboard to the full depth of the joint, including inside the fold.

Step 2
PREPARATION

Prepare all materials and equipment required for brazing: a methylacetylene-propadiene gas torch, Silver Brazing Alloy 250 (SBA 250) or an equivalent approved by the Consultant, clamps, a wire brush and acetone.

Clean both waterstop ends over the joint area with a wire brush and acetone to remove dirt, grease and oxidation.

Overlap the waterstop ends by 100 mm, following the profile of the fold, and clamp them securely together. Keep the gap between the surfaces to be brazed within 0.05 mm to 0.10 mm.

Step 3
BRAZING

Preheat the joint area where required by the copper thickness, typically to 50–200°C.

Tack-braze the lap at regular intervals to hold it in position without distorting the waterstop.

Braze the full length of the lap from one end to the other at a steady speed, feeding the brazing alloy smoothly into the joint. Control the heat input to avoid warping or burn-through.

Step 4
INSPECTION & CONCRETING

Allow the joint to cool, then clean the brazed area with a wire brush to remove flux residue and oxidation.

Inspect the joint to ensure it is fully brazed, securely bonded and properly sealed, with no cracks, porosity or unbrazed areas. Repair any defect before concreting.

Place and compact the concrete fully around both flanges and end upturns, with no voids or honeycombing, taking care not to displace the waterstop.

At expansion joints, seal the exposed joint faces with **UNISEAL®** joint sealant.

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

UNITY RELIANCE



No.135B, Jalan Kip 8,
Kawasan Perindustrian Kepong
52200 Kuala Lumpur

(+60) 3-6734 7941
(+60) 10-785 1159

enquiry@unityreliance.com
https://www.unityreliance.com

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.