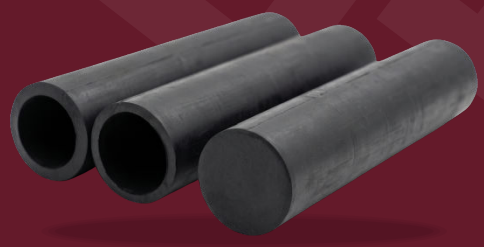
UNIJOINT RUBBER DOWEL CAP

ELASTOMERIC DOWEL BAR CAP



Product Features

UNIJOINT RUBBER DOWEL CAP is a moulded rubber cap fitted over the debonded end of a dowel bar at a slab expansion joint, either as an end cap over a bitumen-coated dowel or as a full-length cap over the whole debonded half. It acts as a protective cover between the dowel bar and the concrete, and provides the clearance space the dowel needs to accommodate the movement and rotation of the structure.

The cushioned cap reduces the concentration of stress around the dowel, accommodates tilting movement of the dowel bar and helps prevent spalling and cracking of the concrete.

UNIJOINT RUBBER DOWEL CAP is stocked in 300 mm lengths for common dowel bar diameters. Other lengths and sizes are made to order to suit the dowel bar.

Advantages

- **Clearance for Movement:** Leaves space at the dowel end for the joint to open and close.
- **Cushioned Cover:** Reduces stress concentration and accommodates dowel tilting.
- **Prevents Spalling:** Helps prevent spalling and cracking of the concrete around the dowel.
- **Fast & Easy Installation:** Push-fit over the debonded end of the dowel bar.
- **Durable Rubber:** Resistant to abrasion, puncture, chemicals and weathering; temperature stable.
- **Maintenance Free:** Good recovery characteristics; no maintenance once cast in.

Fields of Application

Dowelled Slab Expansion Joints	Precast Beam Dowel Connections
Ground Slabs & Pavements	Beam-to-Column Bearings
Suspended Slabs	Custom Dowel Sizes on Request

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Technical Properties

Property	Requirement
Hardness	65 Shore A ± 10%
Tensile Strength	11 MPa min.
Ultimate Elongation	350 % min.
Compression Set (22 h at 70 °C)	25 % max.
Ozone Resistance (25 pphm, 20% strain, 96 h, 30 °C)	No crack

Typical values, given as a guide only and not as a specification.

Standard Sizes

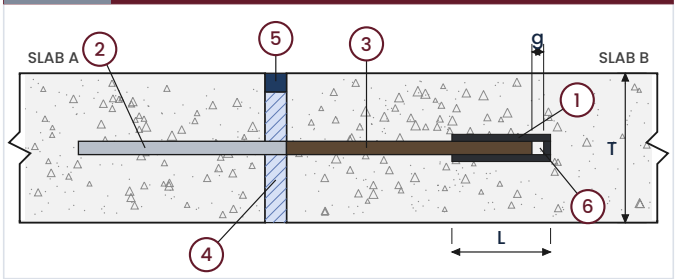
Inner Diameter	Outer Diameter	Length
25 mm	50 mm	300 mm
32 mm	50 mm	300 mm
40 mm	50 mm	300 mm
42 mm	50 mm	300 mm

Select the inner diameter to match the dowel bar. Standard stock length is 300 mm; other lengths are made to order to suit the dowel bar length and the debonding method specified.

Typical Drawings

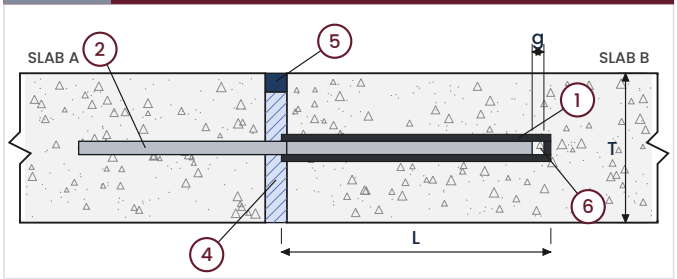
1 OPTION A – END CAP

Not to scale



2 OPTION B – FULL-LENGTH CAP

Not to scale



3 UNIJOINT RUBBER DOWEL CAP

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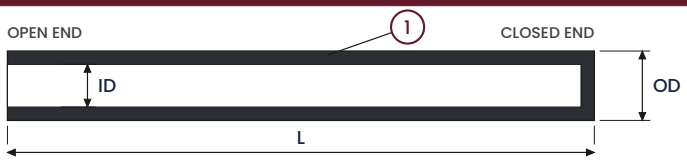



LEGEND

1. UNIJOINT® rubber dowel cap
2. Dowel bar, bonded side
3. UNICOAT® BITUMEN 300 coat
4. UNIFLEX® PE fillerboard
5. UNISEAL® joint sealant
6. Movement gap at the dowel end

L = cap length g = movement gap ID / OD = inner / outer diameter T = slab thickness

Illustrations only – not for construction. Refer to drawing UR-JT-01.

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.

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UNIJOINT RUBBER DOWEL CAP

Installation Procedures

1 Preparation | 2 Debonding & Cap Fitting | 3 Positioning | 4 Concreting

Installation Procedures

Step 1
PREPARATION

Confirm the debonding method specified by the consultant: **Option A** – debonding coat on the debonded half, with the cap as an end cap; or **Option B** – cap covering the whole debonded half.

Select the cap with the inner diameter that matches the dowel bar, and a length to suit the option (Standard Sizes table). Reject any cap that is split, torn or deformed.

Use dowel bars of the diameter and length given in the structural design. Saw-cut the ends square, remove all burrs so that the cap slides on freely, and clean the bars of loose rust, oil and dirt.

Step 2
DEBONDING & CAP FITTING

Option A – End Cap: coat the debonded half of each dowel bar with **UNICOAT BITUMEN 300** in accordance with its technical data sheet and allow it to dry. Then push the cap over the end of the bar.

Option B – Full-Length Cap: push the cap over the whole debonded half of the bar, up to the joint face. The cap itself breaks the bond between the bar and the concrete.

In both options, do not push the cap fully home: leave the movement gap (g) required by the design between the end of the bar and the closed end of the cap. Check that the cap is a firm fit and cannot slip.

Step 3
POSITIONING

Fix the dowels at the spacing given in the structural design, at mid-depth of the slab (T/2), parallel to the slab surface and perpendicular to the joint line, so that the joint can open and close freely.

Place the debonded, capped half on the side of the joint designed to move (slab B), and the bonded half in slab A.

Support the dowels on chairs, cradles or through the formwork / fillerboard so that they cannot move, tilt or sag during concreting. Check the alignment before the pour.

Step 4
CONCRETING

Place and compact the concrete around the dowels without displacing the dowels or the caps. Do not vibrate directly against the dowels.

Check the dowel alignment again immediately after placing the concrete, while any correction is still possible, and cure the slab as normal.

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