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

UNITY RELIANCE

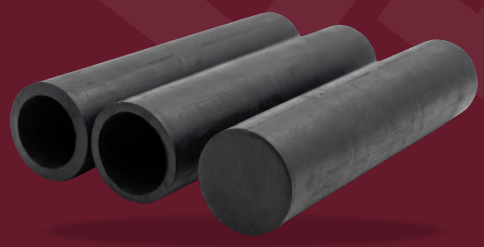


Expansion Joint System

UNIJOINT®

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

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

UNIJOINT RUBBER DOWEL CAP

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

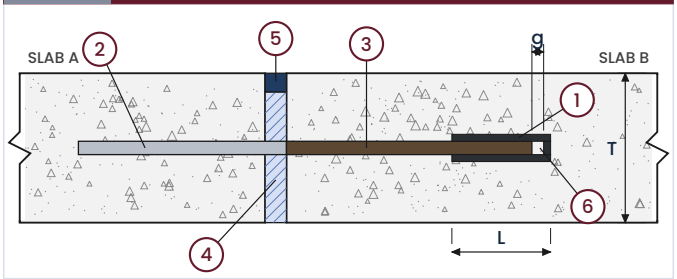
Inner Diameter	Outer Diameter	Length
25 mm	50 mm	300 mm
32 mm	50 mm	300 mm
40 mm	50 mm	300 mm
42 mm	50 mm	300 mm

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

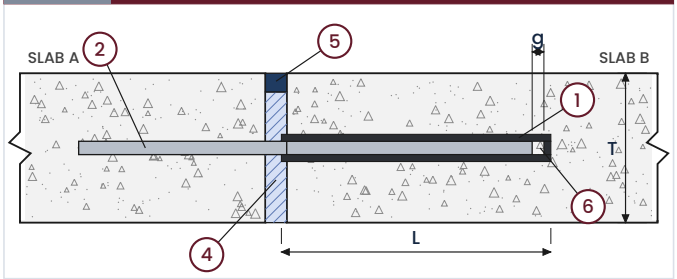
1 OPTION A – END CAP

Not to scale



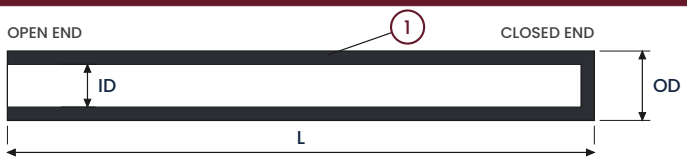
2 OPTION B – FULL-LENGTH CAP

Not to scale



3 UNIJOINT RUBBER DOWEL CAP

Not to scale





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.

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

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.

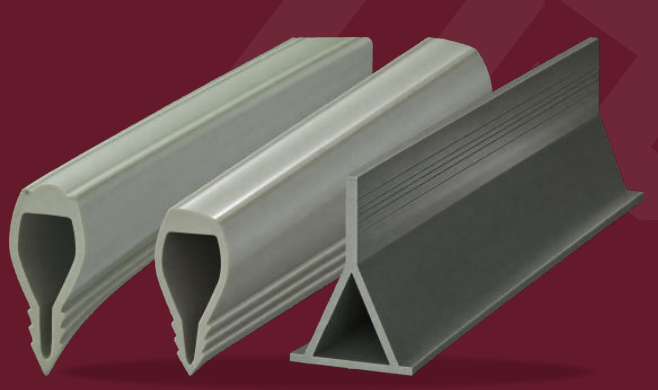
Check the dowel alignment again immediately after placing the concrete, while any correction is still possible, and cure the slab as normal.

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.

UNIJOINT CRACK INDUCER

PVC CRACK INDUCER FOR CONCRETE SLABS
TOP CI-T | BOTTOM CI-B



Product Features

UNIJOINT CRACK INDUCER is an extruded PVC profile used to form a planned contraction joint in a concrete slab. It weakens the slab along a straight line, so that the shrinkage crack forms along the inducer instead of at random.

Two types are available. The **top crack inducers CI-T 30 and CI-T 50** are pressed into the fresh concrete along a string line, with the head finished flush with the slab surface. The CI-T head is topped with soft grey EPDM. The **bottom crack inducer CI-B 75** is set on the lean concrete along the joint line before the pour and is cast into the slab.

Use either a top or a bottom crack inducer at a joint, not both. Crack inducers are not structural expansion joints.

Advantages

- **Planned Crack Line:** Controls where the shrinkage crack forms in the slab.
- **Top or Bottom Type:** CI-T pressed in from the top; CI-B cast in from the bottom.
- **Quick to Install:** CI-T is pressed into fresh concrete along a string line.
- **Neat Finish:** CI-T head sits flush with the slab surface, topped with soft grey EPDM.
- **Barbed Tail:** CI-T barbed tail grips the concrete.
- **Light & Easy to Handle:** PVC profile supplied in 2.5 m lengths.

Fields of Application

Concrete Ground Slabs	Industrial & Warehouse Floors
Car Park & Driveway Slabs	Podium & Roof Slabs
Screeds & Mortar Beds	Pavements & Hardstandings

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

UNIJOINT CRACK INDUCER

Profile Selection

Code	Position	Colour	Height	Width	Length	Packing
CI-T 30	Top	Light grey	30 mm	9 mm	2.5 m	50 pcs / box
CI-T 50	Top	Dark grey	50 mm	15 mm	2.5 m	10 lengths / ctn
CI-B 75	Bottom	Dark grey	75 mm	60 mm (base)	2.5 m	10 lengths / ctn



CI-T 30



CI-T 50



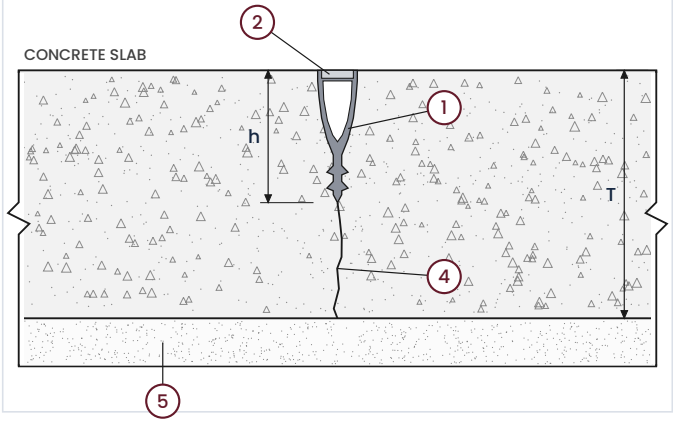
CI-B 75

Physical Properties

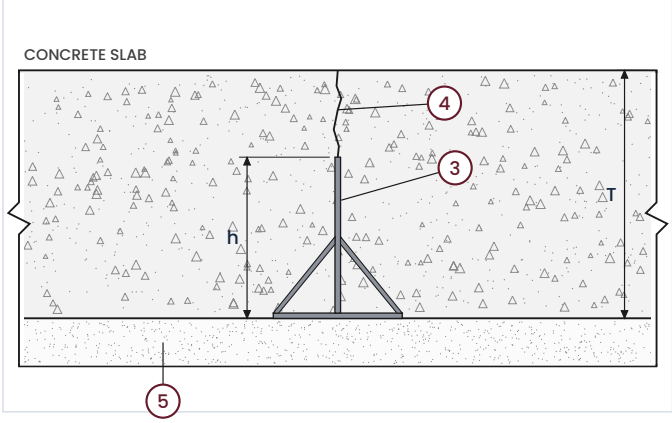
Property	Value
Material	PVC
CI-T Head	Topped with soft grey EPDM
Standard Length	2.5 m per length

Typical Drawings

1 TOP CRACK INDUCER CI-T — Not to scale



2 BOTTOM CRACK INDUCER CI-B — Not to scale



LEGEND

1. UNIJOINT® CI-T 30 / CI-T 50
2. Soft grey EPDM top
3. UNIJOINT® CI-B 75
4. Induced crack
5. Lean concrete (by others)

T = slab thickness h = inducer height, not less than T/4 unless the consultant directs otherwise.

Illustrations only – not for construction. Refer to drawing UR-JT-03.

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.

Installation Procedures

1 Setting Out | 2 Cutting & Jointing | 3 Bottom CI-B 75 | 4 Top CI-T 30 / 50 | 5 Finishing & Curing

Installation Procedures

Step 1

SETTING OUT

Mark the joint layout given by the consultant on the formwork or edge forms, so that the joint lines can be set out with a string line during the works.

Use either a top crack inducer (CI-T) or a bottom crack inducer (CI-B) at a joint, not both. Select an inducer height (h) of not less than one quarter of the slab thickness (T), unless the consultant directs otherwise.

Step 2

CUTTING & JOINTING

Cut the inducer to length with a fine-tooth saw or a sharp knife, square to the profile.

Butt the lengths tightly end to end so that the joint line is continuous, with no gaps. At joint intersections, cut the profiles neatly so that they meet without gaps.

Step 3

BOTTOM INDUCER CI-B 75

Before the slab is poured, set **CI-B 75** on the lean concrete along the joint line, upright, with its base flat on the lean concrete.

Hold it in place with packs of mortar on both sides at intervals, so that it cannot move or tilt during concreting.

Place the concrete beside the inducer, not directly onto it, and compact carefully, keeping it upright and on line. It is cast into the slab and the crack runs up from it to the surface.

Step 4

TOP INDUCER CI-T 30 / CI-T 50

Place, compact and level the slab concrete as normal.

While the concrete is still fresh, set a string line along the joint and press **CI-T 30** or **CI-T 50** vertically into the concrete, barbed tail first, until the head is flush with the finished slab surface.

Re-compact and close the concrete against both sides of the inducer, then check that it is straight, vertical and level along the full joint.

Step 5

FINISHING & CURING

Finish the slab surface up to the inducer without displacing it or covering the CI-T head with mortar. Clean the head before the concrete sets.

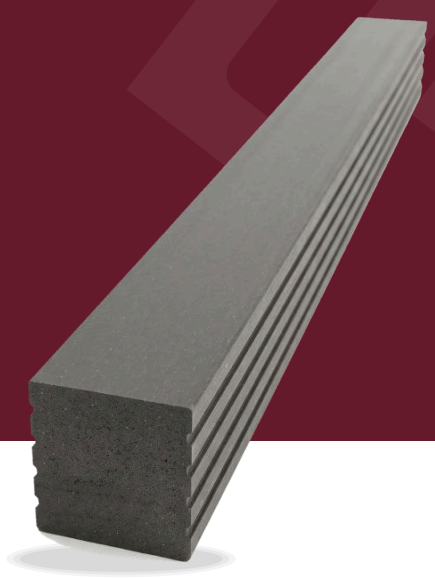
Cure the slab as normal. The shrinkage crack forms along the inducer as the slab dries.

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.

UNIJOINT FLEXSEAL

MULTI-PURPOSE EXPANSION JOINT SEAL
FLOOR TO FLOOR | FLOOR & WALL TO WALL



Product Features

UNIJOINT FLEXSEAL is a multi-purpose seal for expansion joints, for floor-to-floor, floor-to-wall and wall-to-wall applications. Bonded to both joint faces with **UNISTICK EA 5537** epoxy adhesive, it forms a continuous, watertight seal with a smooth surface that sits flush with the finishes.

Unlike standard seals supplied in a fixed range of sizes, **UNIJOINT FLEXSEAL** is produced to the measured width of each joint, including wide joints of 150 mm and above. One system can therefore seal every joint on a project, from narrow building joints to wide structural gaps.

Seals are supplied in 1 m lengths and butt-jointed on site with **UNISTICK CA** contact adhesive to form a continuous run of any length.

Advantages

Made to Measure: Produced to the exact joint width, including joints of 150 mm and above.
High Movement Capacity: Accommodates movement of ±40% of the gap width (80% total).
Load Rated: Rated for car, reach truck and truck loads (Eurocode) on joints up to 63 mm.
Watertight Bond: Bonded to both joint faces with UNISTICK EA 5537 epoxy adhesive.
Smooth & Flush: Sits level with the surrounding finish for a clean, unobtrusive sightline.
Continuous Runs: 1 m lengths butt-jointed with UNISTICK CA for runs of any length.

Fields of Application

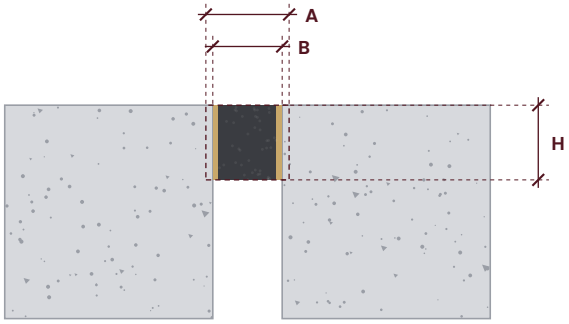
Building Expansion Joints	Wide Joints (150 mm & Above)
Floor-to-Floor Joints	Commercial Buildings & Malls
Floor-to-Wall Joints	Hospitals & Institutional Buildings
Wall-to-Wall Joints	Airports & Transport Terminals
Podium & Roof Slab Joints	Car Parks, Factories & Warehouses

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

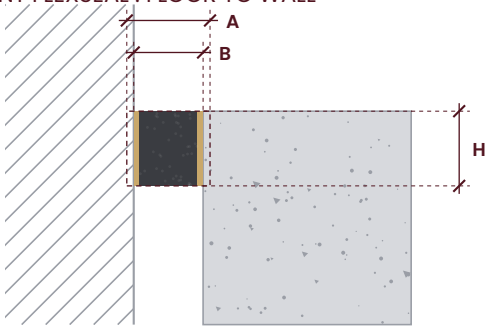
UNITY RELIANCE

Expansion Joint Selection Criteria

UNIJOINT FLEXSEAL : FLOOR TO FLOOR



UNIJOINT FLEXSEAL : FLOOR TO WALL



UNIJOINT FLEXSEAL UNISTICK EA 5537 epoxy adhesive Concrete substrate

B = Gap width A = Seal width supplied (10–20% wider than B, dashed; installed in compression) H = Seal height

			Load Rating (Eurocode)				Product Dimensions		
Joint Location	**Gap** B (mm)	**Movement** ± [Total]	Pallet Truck	Reach Truck	Car	Truck	**Height** H (mm)	**Seal Width** A (mm)	**Product Code**
Floor – Floor Floor – Wall Wall – Wall	10	± 4 [8]	–	**34 kN**	**32 kN**	**650 kN**	25	15	UJ-FS-010-025
	20	± 8 [16]						25	UJ-FS-020-025
	25	± 10 [20]						30	UJ-FS-025-025
	30	± 12 [24]					50	35	UJ-FS-030-050
	38	± 15 [30]						45	UJ-FS-038-050
	44	± 18 [35]						50	UJ-FS-044-050
	50	± 20 [40]						55	UJ-FS-050-050
	57	± 23 [46]		–			64	65	UJ-FS-057-064
	63	± 25 [50]						70	UJ-FS-063-064
	70	± 28 [56]			–	–		80	UJ-FS-070-064
	75	± 30 [60]		–			76	85	UJ-FS-075-076
	83	± 33 [66]						95	UJ-FS-083-076
	90	± 36 [72]						100	UJ-FS-090-076
	95	± 38 [76]					89	105	UJ-FS-095-089
	100	± 40 [80]						110	UJ-FS-100-089
	> 100	**± 40% [80%]**	**–**	**–**	**–**	**–**	**Made to order**		**Made to order**

Seal width A is a nominal size: seals are made 10–20% wider than gap B and installed in compression. Load ratings are based on supplier data, at vehicle speeds not exceeding 16 km/h (10 mph). Joint widths above 100 mm, including 150 mm and above, are made to order. Supplied in 1 m lengths.

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.

Technical Properties

Property	Test Method	Unit	Value
Density	ASTM D792	kg/m³	28 ± 10%
Tensile Strength at Break	ASTM D412	kgf/cm²	5.1 (≈ 0.50 MPa)
Elongation at Break	ASTM D412	%	180
Hardness	JIS K7312	Shore C	16 ± 3
Compression Deflection	ASTM D1056	kgf	3.4
Movement Capacity	–	% of gap width	± 40 (80 total)

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

Physical Properties

Material	:	Closed-cell foam
Colour	:	Charcoal grey
Gap Width	:	Made to measure to suit joint width, including 150 mm and above
Length	:	1 m / length
Surface	:	Smooth, flush with finishes
Bonding Adhesive	:	UNISTICK EA 5537 epoxy adhesive (to joint faces)
Butt-Joint Adhesive	:	UNISTICK CA contact adhesive (between lengths)
Fire Retardant	:	UNIFLEX PE FR material, on special request
Supply	:	Made to order

Ordering Information

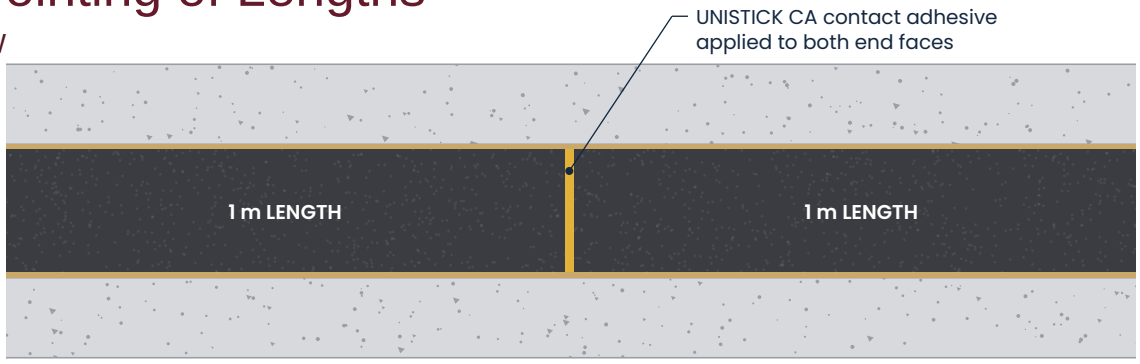
1. Gap width (B): measure at several points along the joint and state the narrowest and widest. The seal is supplied 10–20% wider (A).
2. Seal height (H): select from the Selection Criteria table, or state the height required for joints above 100 mm.
3. Total run length: seals are supplied in 1 m lengths.
4. Joint location: floor-to-floor, floor-to-wall or wall-to-wall.

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.

Butt Jointing of Lengths

PLAN VIEW



Drawings are for illustration only and are not to scale. Joint width and movement must be determined by the project engineer. Unity Reliance does not accept design responsibility for joint details.

Health & Safety

UNISTICK EA 5537 and **UNISTICK CA** are chemical products. Wear gloves, goggles and protective clothing during mixing and application, and avoid contact with skin and eyes. If contact occurs, rinse immediately with clean water and seek medical attention.

UNISTICK CA is solvent based and flammable. Use only in well-ventilated areas away from naked flames, sparks and heat. Refer to the Safety Data Sheet (SDS) of each adhesive for full health and safety information.

Take care when trimming the foam on site with a knife.

Shelf Life & Storage

Store **UNIJOINT FLEXSEAL** flat in its original packaging in a cool, dry and shaded place. Do not bend the seals or stack heavy loads on them, as permanent deformation may affect the fit in the joint.

Store the adhesives in accordance with their own technical data sheets.

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.

Installation Procedures

1 Surface Preparation | 2 Adhesive Application | 3 Installation | 4 Butt Jointing

Installation Procedures

Step 1

SURFACE PREPARATION

All joint faces must be structurally sound, clean, dry and free from dust, laitance, oil, curing compounds and loose particles. Grind or wire-brush the joint faces and remove all dust by vacuum or oil-free compressed air.

Check the joint width along its full length against the seal size ordered, and remove any debris, mortar or formwork from the joint.

Mask the top edges of the joint with tape to keep the finished surface clean.

Step 2

ADHESIVE APPLICATION

Mix **UNISTICK EA 5537** Part A and Part B thoroughly in accordance with its technical data sheet.

Apply an even coat of the mixed adhesive to both joint faces over the full depth of the seal, and to both sides of the seal.

Install the seal within the working time of the adhesive.

Step 3

INSTALLATION

Press **UNIJOINT FLEXSEAL** into the joint so that its top surface is flush with the finished surface. Work along the joint from one end, making sure the seal is in full contact with the adhesive on both faces.

Remove excess adhesive from the surface before it cures, then remove the masking tape.

Protect the joint from traffic, water and loading until the adhesive has fully cured.

Step 4

BUTT JOINTING

Before inserting each new length, apply **UNISTICK CA** to the end faces of both lengths to be joined and allow it to become touch-dry.

Press the ends firmly together with the faces aligned. Contact adhesive bonds on contact, so position the ends accurately before pressing.

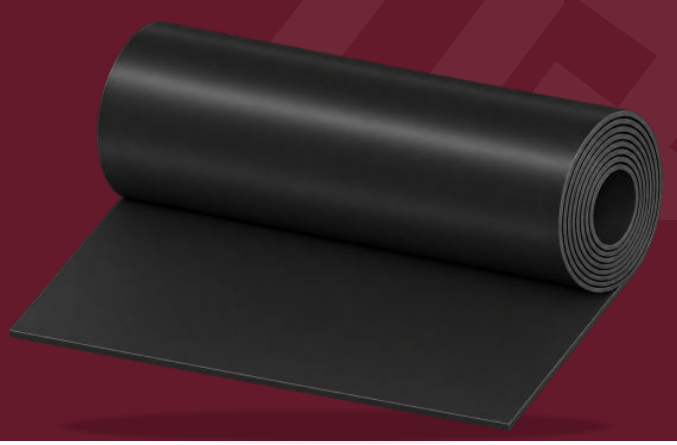
Install the joined length as described in Step 3. On completion, inspect the full run for gaps at the butt joints and along both bond lines.

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.

UNIJOINT RUBBER STRIP

PLAIN RUBBER STRIP / PAD
NATURAL OR NEOPRENE RUBBER



Product Features

UNIJOINT RUBBER STRIP is a plain, non-reinforced elastomeric strip or pad, moulded from a high quality natural rubber or neoprene rubber compound to the size required. Placed between precast or steel components, it absorbs compressive loading and isolates shock and vibration.

The strip is highly elastic and acts as a flexible layer between rigid building materials, allowing controlled movement between them. Its compressibility takes up variations in the contact surfaces, increasing the contact area so that loads are distributed evenly, and it forms a seal against noise, moisture, humidity and heat.

UNIJOINT RUBBER STRIP is also used as the rubber sheet membrane in bridge expansion joint blockouts, laid on the blockout floor and continuous across the joint. Type and thickness as specified by JKR or the engineer.

Advantages

- **Rugged & Durable:** Natural or neoprene rubber compound.
- **Load Bearing:** High flexibility and bearing strength under compressive loads.
- **Isolation:** Isolates and absorbs vibration, sound and shock.
- **Even Load Transfer:** Takes up surface variations and spreads the load over the contact area.
- **Made to Size:** Produced to the size ordered – no cutting on site. Widths 50 – 600 mm, thicknesses 5 – 50 mm, lengths 1 – 20 m.
- **Economical:** Lower cost than laminated elastomeric bearings.

Fields of Application

Precast Concrete Structures	Short-Span Bridges
Steel Frame Structures	Bridge Expansion Joint Membrane
Corbel & Nib Bearings	Vibration Isolation
Suspended Concrete Slabs	Other Civil Engineering Structures

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

UNITY RELIANCE

UNIJOINT RUBBER STRIP

Technical Properties

Property	Test Method	Unit	Value
Hardness	BS ISO 48-2 : 2018	IRHD	60 ± 5
Tensile Strength	BS ISO 37 : 2017	MPa	> 15
Elongation at Break	BS ISO 37 : 2017	%	> 400
Compression Set (24 h / 70 °C)	BS ISO 815-1 : 2014	%	< 30
Density	BS ISO 2781 : 2018	g/cm³	1.18 ± 0.05
Ozone Resistance (25 pphm / 20% / 96 h / 30 °C)	–	–	No crack
After ageing 7 days in air at 70 °C:			
Change in Hardness	BS ISO 48-2 : 2018	IRHD	+ 10
Change in Tensile Strength	BS ISO 37 : 2017	%	– 15
Change in Elongation at Break	BS ISO 37 : 2017	%	– 20

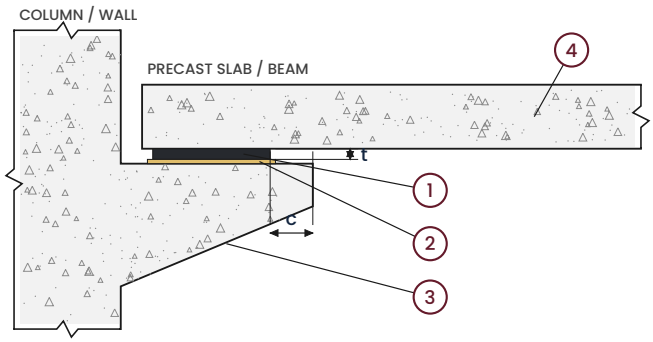
All tested and physical parameter values are subject to a 5 – 15% tolerance factor.

Physical Properties

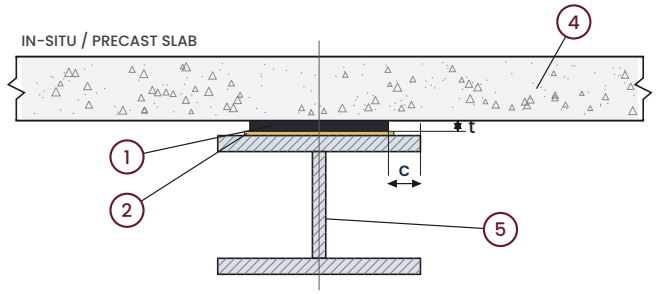
Property	Value
Material	Natural rubber / neoprene rubber
Colour	Black
Width	50 – 600 mm
Thickness	5 – 50 mm
Length	1 – 20 m
Supply	Made to the size ordered
Packing	Depends on size

Typical Drawings

1 CORBEL TO SLAB — Not to scale



2 STEEL BEAM TO SLAB — Not to scale



LEGEND

1. UNIJOINT® rubber strip / pad
2. Epoxy resin bedding
3. Concrete corbel (by others)
4. Slab / beam (by others)
5. Steel beam (by others)

t = strip thickness c = clear gap to the edge of the bearing, min. 12 mm on all sides

Illustrations only – not for construction.

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.

Calculation Specification

Width (mm)	Thickness (mm)	Max. Load Capacity (kN)	Max. Shear Deflexion (mm)	Shear Stiffness (kN/mm)	Compression Stiffness (kN/mm)
100	6	250	4.0	15.0	1278
100	10	200	7.0	9.0	283
100	12	180	8.0	7.5	164
100	15	150	10.5	6.0	84
100	25	80	17.5	3.6	18
150	6	500	4.0	22.5	3791
150	10	450	7.0	13.5	861
150	12	400	8.0	11.3	503
150	15	300	10.5	9.0	259
150	20	200	14.0	6.8	110
150	25	150	17.5	5.4	56
200	6	900	4.0	30.0	7876
200	10	800	7.0	18.0	1840
200	12	700	8.0	15.0	1080
200	15	500	10.5	12.0	560
200	20	400	14.0	9.0	238
200	25	300	17.5	7.2	123
200	50	200	35.0	3.6	15
250	10	900	7.0	22.5	3247
250	12	800	8.0	18.8	1917
250	15	600	10.5	15.0	998
250	20	500	14.0	11.3	427
250	25	400	17.5	9.0	220
250	50	300	35.0	4.5	28
300	10	1300	7.0	27.0	5078
300	15	1100	10.5	18.0	1579
300	20	800	14.0	13.5	678
300	25	700	17.5	10.8	348
300	50	600	35.0	5.4	44
400	10	1500	7.0	36.0	9930
400	15	1200	10.5	24.0	3160
400	20	900	14.0	18.0	1369
400	25	800	17.5	14.4	710
400	50	700	35.0	7.2	90
500	10	2200	7.0	45.0	16171
500	15	2000	10.5	30.0	5264
500	20	1900	14.0	22.5	2300
500	25	1600	17.5	18.0	1188
500	50	1300	35.0	9.0	153

Calculated values per 1 m length of strip, shear modulus G = 0.9 N/mm². Other sizes are made to the size ordered.

IMPORTANT – LOADS FOR REFERENCE ONLY

The load capacities and stiffness values in this table are calculated for reference only and are not a design. The bearing size, thickness and load capacity for each application must be designed, checked and approved by the project's qualified engineer. Unity Reliance (M) Sdn Bhd accepts no responsibility for structural design or for the selection of the bearing based on this table.

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.

Installation Procedures

1 Surface Preparation | 2 Epoxy Bedding | 3 Placing | 4 Loading

Installation Procedures

Step 1
SURFACE PREPARATION

The bearing surface must be sound, level and dry. Remove all loose material, dust, laitance, oil and grease from concrete surfaces, and loose rust, oil and dirt from steel surfaces.

Mark the position of the strip / pad on the bearing surface, keeping a clear gap of at least 12 mm to the edge of the bearing on all sides.

Step 2
EPOXY BEDDING

Mix the epoxy resin thoroughly in accordance with its manufacturer's instructions.

Apply an even layer of epoxy resin over the marked area so that the strip / pad is fully bedded, with no voids under it.

Step 3
PLACING

UNIJOINT RUBBER STRIP is supplied cut to the size ordered, so no cutting is needed on site. Remove it from its packing, check the size against the order, and clean off any dirt.

Place the strip / pad on the fresh epoxy resin and press it down evenly over its full area. Check its position, line and level.

Rubber spreads sideways when compressed, so keep the clear gap of at least 12 mm around all sides of the strip / pad.

Step 4
LOADING

Allow the epoxy resin to cure fully before placing the supported member.

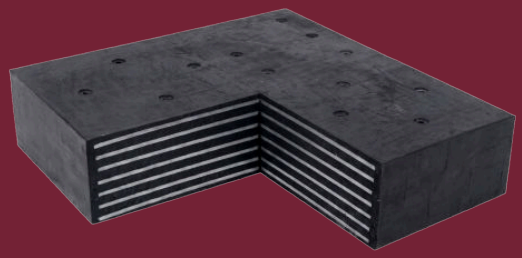
Lower the precast or steel member onto the strip / pad without dragging or shifting it, and check that the member bears evenly over the full strip.

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.

UNIJOINT® RUBBER BEARING

LAMINATED ELASTOMERIC BEARING



Product Features

Over the past seven decades, elastomeric bearings have become a widely trusted solution for supporting bridge superstructures while accommodating horizontal thermal expansion, lateral movements, and structural rotations. Unlike traditional mechanical systems such as roller, sliding, or knuckle bearings, elastomeric bearings offer a highly economical alternative that simplifies installation and minimizes ongoing maintenance.

UNIJOINT® RUBBER BEARINGS are designed to support a broad range of load capacities and movement allowances. **UNIJOINT® RUBBER BEARINGS** are manufactured and quality-tested in strict compliance with BS 5400: Section 9 standard.

This catalogue outlines our range of laminated elastomeric bearings. Custom sizes and non-standard load ratings are also available upon request to meet project-specific engineering requirements.

Advantages

- Economical Alternative To Roller, Sliding Or Knuckle Bearings
- Low Maintenance Once Installed
- Simple, Straightforward Installation On Site
- Accommodates Thermal Expansion, Lateral Movement And Rotation
- Standard Range, Or Custom Sizes And Load Ratings On Request

Fields Of Application

- Bridge superstructure support systems.
- Highway flyovers and elevated road bridges.
- Rail infrastructure and mass rapid transit (MRT) viaducts.
- Heavy civil structural joints requiring load distribution and thermal expansion allowance.

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

Technical Properties

Property	Test Method	Unit	BS 5400 Req.	Result
Shear Modulus	-	N/mm²	-	0.9
Bulk Modulus	-	N/mm²	-	2000
Hardness	BS ISO 48-2	IRHD	60 nominal	60 ± 5
Tensile Strength	BS ISO 37	MPa	≥ 15.5	> 25
Elongation at Break	BS ISO 37	%	≥ 400	> 550
Compression Set (22 h / 70°C)	BS ISO 815-1	%	≤ 30	< 28
Bond Strength, Rubber to Steel	BS ISO 813	N/mm	≥ 7	≥ 8, rubber failure
Ozone Resistance	BS ISO 1431-1	-	No crack	No crack
After Ageing 7 Days at 70°C:	BS ISO 188			
Change in Tensile Strength		%	≤ 15	Within 10
Change in Elongation at Break		%	≤ 20	Within 10
Change in Hardness		IRHD	≤ 10	≤ + 5
Material	-	-	-	Natural rubber

Rubber tested to the requirements of BS 5400: Section 9. All values are subject to 5-10% tolerance.

All values are based on Serviceability Limit State as stipulated in BS 5400 Section 9.1 Clause 10.1.4 and MS371 with the assumption of the Dead Load Effect being numerically equal to Live Load Effect.

Special Note

The part number of each bearing in this catalogue identifies the construction as shown in the example below :-

RBP3015/2/06

RBP3015 = plan size series (300 x 150 mm)

/2 = Number of inner rubber layers

/06 = Thickness of inner rubber layer (mm)

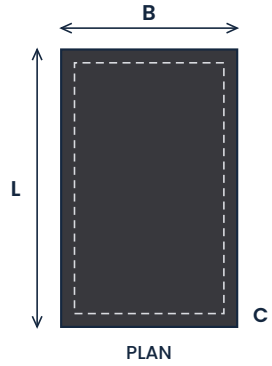
Whole Bearing Tests

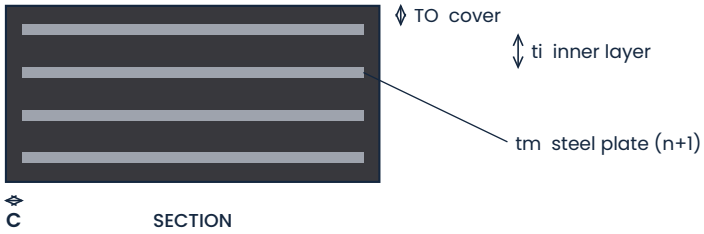
Bearing Size (mm)	Steel Plates	Design Load	Test Standard	Comp. Stiffness
400 x 350 x 87	5 x 3.0 mm	1200 kN	BS 5400-9.2, Clause 7.2	> 450 kN/mm
700 x 400 x 112	7 x 4.0 mm	2850 kN	BS 5400-9.2, Clause 7.2	> 1700 kN/mm

Custom bearings are tested for compression stiffness at the design load. Test reports are available on request.

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

Profile Selection





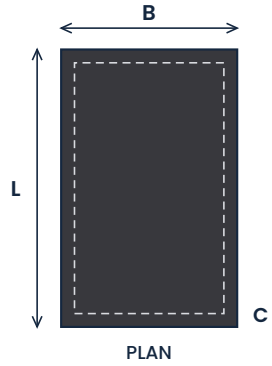
Plan Dimensions (L x B): 300 x 150 mm
Top/Bottom Cover rubber thickness, TO = 4 mm
Side Cover rubber thickness, C = 6 mm
Steel Plate thickness, Tm = 3 mm

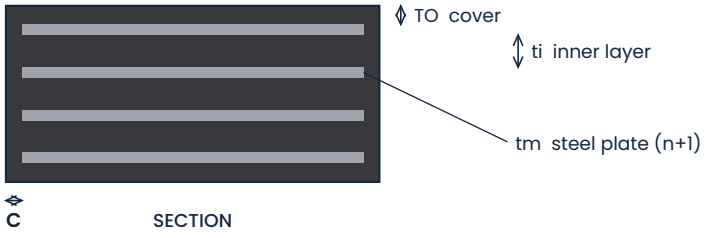
Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP3015/2/06	150	300	29	498	0.00436	740	490	570	395	14.0	2.03
RBP3015/3/06	150	300	38	379	0.00573	740	490	550	380	18.2	1.56
RBP3015/4/06	150	300	47	306	0.00710	740	490	534	375	22.4	1.27
RBP3015/5/06	150	300	56	257	0.00847	670	487	515	365	26.6	1.07
RBP3015/6/06	150	300	65	221	0.00984	580	486	452	350	30.8	0.92
RBP3015/7/06	150	300	74	194	0.01121	512	486	380	340	35.0	0.81
RBP3015/1/09	150	300	23	366	0.00594	490	388	389	310	11.9	2.38
RBP3015/2/09	150	300	35	212	0.01026	490	375	369	290	18.2	1.56
RBP3015/3/09	150	300	47	149	0.01457	487	364	350	276	24.5	1.16
RBP3015/4/09	150	300	59	115	0.01889	388	358	300	262	30.8	0.92
RBP3015/1/12	150	300	26	187	0.01160	370	295	287	233	14.0	2.03
RBP3015/2/12	150	300	41	101	0.02158	370	273	267	214	22.4	1.27
RBP3015/3/12	150	300	56	69	0.03156	290	262	226	199	30.8	0.92
RBP3015/4/12	150	300	71	52	0.04154	228	256	164	185	39.2	0.72
RBP3015/5/12	150	300	86	42	0.05152	188	252	123	171	47.6	0.60

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.

Profile Selection





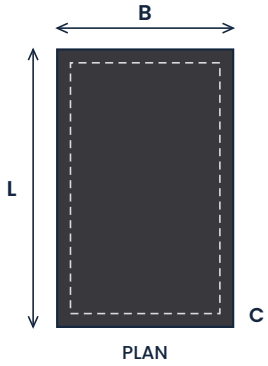
Plan Dimensions (L x B): 230 x 200 mm
Top/Bottom Cover rubber thickness, TO = 4 mm
Side Cover rubber thickness, C = 6 mm
Steel Plate thickness, Tm = 3 mm

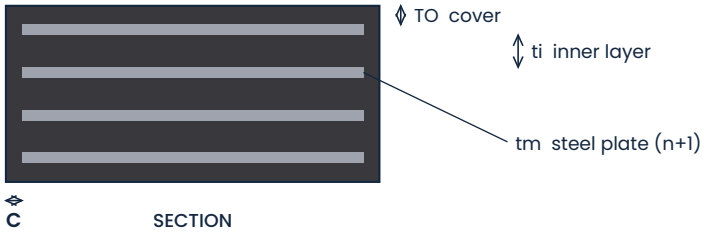
Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP2320/1/06	200	230	20	859	0.00186	820	498	670	416	9.8	2.96
RBP2320/2/06	200	230	29	589	0.00271	820	490	659	406	14.0	2.07
RBP2320/3/06	200	230	38	448	0.00356	820	490	643	399	18.2	1.59
RBP2320/4/06	200	230	47	362	0.00441	820	489	627	392	22.4	1.29
RBP2320/5/06	200	230	56	303	0.00526	820	488	611	385	26.6	1.09
RBP2320/6/06	200	230	65	261	0.00611	820	488	595	379	30.8	0.94
RBP2320/1/09	200	230	23	436	0.00366	550	390	440	327	11.9	2.44
RBP2320/2/09	200	230	35	253	0.00631	550	365	428	301	18.2	1.59
RBP2320/3/09	200	230	47	179	0.00896	550	354	413	287	24.5	1.18
RBP2320/4/09	200	230	59	137	0.01161	550	348	394	278	30.8	0.94
RBP2320/1/12	200	230	26	224	0.00711	414	286	329	241	14.0	2.07
RBP2320/2/12	200	230	41	121	0.01321	414	259	313	214	22.4	1.29
RBP2320/3/12	200	230	56	83	0.01932	414	248	298	202	30.8	0.94
RBP2320/4/12	200	230	71	63	0.02542	347	242	275	194	39.2	0.74
RBP2320/5/12	200	230	86	51	0.03152	286	238	214	188	47.6	0.61

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.

Profile Selection





Plan Dimensions (L x B): 350 x 200 mm
Top/Bottom Cover rubber thickness, TO = 4 mm
Side Cover rubber thickness, C = 6 mm
Steel Plate thickness, Tm = 3 mm

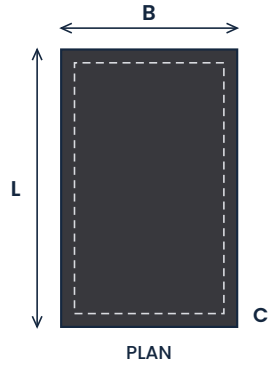
Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP3520/2/06	200	350	29	1232	0.00130	1460	960	1220	790	14.0	3.15
RBP3520/3/06	200	350	38	938	0.00170	1460	960	1190	770	18.2	2.42
RBP3520/4/06	200	350	47	757	0.00210	1460	950	1160	760	22.4	1.97
RBP3520/5/06	200	350	56	635	0.00250	1460	950	1130	750	26.6	1.66
RBP3520/6/06	200	350	65	547	0.00292	1460	950	1100	730	30.8	1.43
RBP3520/7/06	200	350	74	480	0.00332	1440	950	1070	720	35.0	1.26
RBP3520/1/09	200	350	23	932	0.00169	1020	780	820	640	11.9	3.71
RBP3520/2/09	200	350	35	543	0.00294	970	730	790	600	18.2	2.42
RBP3520/3/09	200	350	47	383	0.00415	970	710	760	570	24.5	1.80
RBP3520/4/09	200	350	59	296	0.00540	970	704	736	558	30.8	1.43
RBP3520/1/12	200	350	26	487	0.00328	760	590	610	480	14.0	3.15
RBP3520/2/12	200	350	41	263	0.00607	730	530	580	440	22.4	1.97
RBP3520/3/12	200	350	56	180	0.00887	730	510	550	410	30.8	1.43

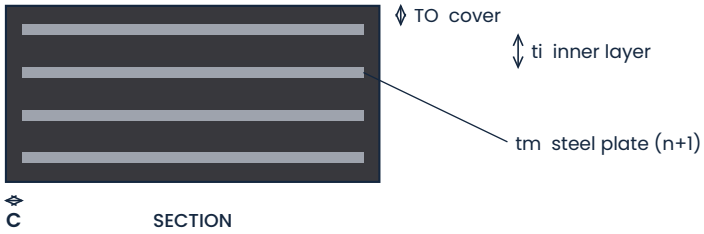
This technical data sheet is given in good faith and does not guarantee the application work. All Unity Reliance technical data sheets & method statements are updated on a regular basis and can be subject to change without notice. It is the user's responsibility to obtain the latest version of the information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

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

UNIJOINT® RUBBER BEARING

Profile Selection





Plan Dimensions (L x B): 400 x 280 mm
Top/Bottom Cover rubber thickness, TO = 4 mm
Side Cover rubber thickness, C = 6 mm
Steel Plate thickness, Tm = 3 mm

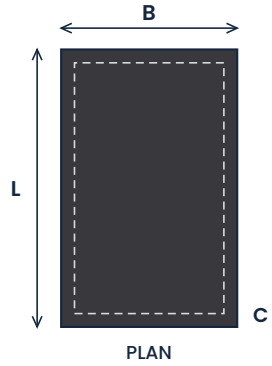
Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP4028/2/09	280	400	35	1416	0.00079	1600	1440	1490	1200	18.2	3.88
RBP4028/3/09	280	400	47	1002	0.00112	1600	1402	1450	1160	24.5	2.88
RBP4028/4/09	280	400	59	776	0.00143	1600	1378	1410	1120	30.8	2.29
RBP4028/5/09	280	400	71	633	0.00176	1600	1360	1370	1105	37.1	1.90
RBP4028/6/09	280	400	83	534	0.00210	1600	1352	1340	1080	43.4	1.63
RBP4028/7/09	280	400	95	462	0.00242	1600	1342	1300	1060	49.7	1.42
RBP4028/1/12	280	400	26	1300	0.00085	1648	1150	1340	970	14.0	5.04
RBP4028/2/12	280	400	41	707	0.00158	1200	1050	1100	880	22.4	3.15
RBP4028/3/12	280	400	56	485	0.00230	1200	1010	1060	830	30.8	2.29
RBP4028/4/12	280	400	71	370	0.00301	1200	980	1019	810	39.2	1.80
RBP4028/1/15	280	400	29	744	0.00150	1319	850	1060	720	16.1	4.38
RBP4028/2/15	280	400	47	390	0.00287	960	760	860	640	26.6	2.65
RBP4028/3/15	280	400	65	264	0.00424	960	730	820	610	37.1	1.90

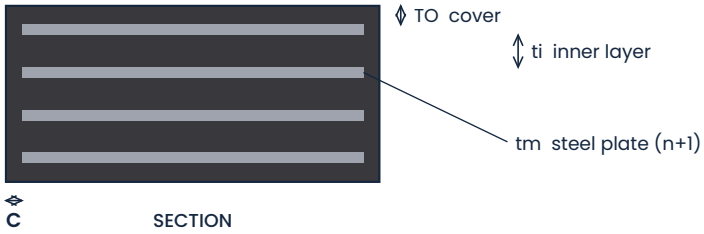
This technical data sheet is given in good faith and does not guarantee the application work. All Unity Reliance technical data sheets & method statements are updated on a regular basis and can be subject to change without notice. It is the user's responsibility to obtain the latest version of the information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

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

UNIJOINT® RUBBER BEARING

Profile Selection





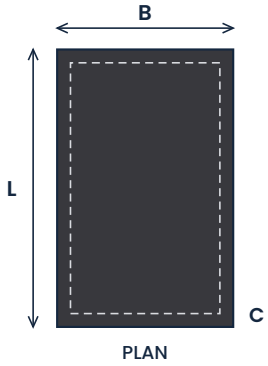
Plan Dimensions (L x B): 400 x 350 mm
Top/Bottom Cover rubber thickness, TO = 6 mm
Side Cover rubber thickness, C = 10 mm
Steel Plate thickness, Tm = 3 mm

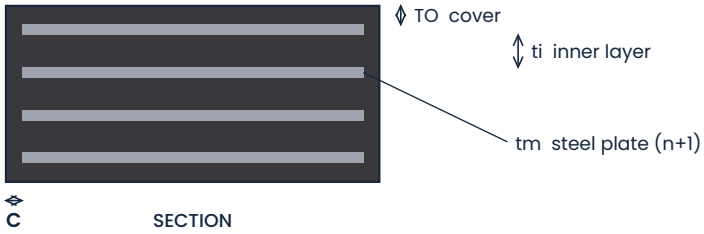
Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP4035/2/09	350	400	39	1554	0.00054	1929	1715	1800	1420	21.0	4.20
RBP4035/3/09	350	400	51	1184	0.00072	1920	1710	1770	1400	27.3	3.23
RBP4035/4/09	350	400	63	956	0.00095	1920	1714	1730	1380	33.6	2.63
RBP4035/5/09	350	400	75	801	0.00112	1920	1707	1695	1360	39.9	2.21
RBP4035/6/09	350	400	87	690	0.00130	1920	1700	1650	1340	46.2	1.91
RBP4035/7/09	350	400	99	606	0.00150	1920	1700	1620	1320	52.5	1.68
RBP4035/1/12	350	400	30	1469	0.00061	1923	1490	1800	1253	16.8	5.25
RBP4035/2/12	350	400	45	892	0.00102	1445	1420	1330	1175	25.2	3.50
RBP4035/3/12	350	400	60	640	0.00140	1445	1400	1820	1140	33.6	2.63
RBP4035/4/12	350	400	75	499	0.00180	1445	1370	1260	1110	42.0	2.10
RBP4035/2/15	350	400	51	528	0.00170	1150	1140	1050	950	29.4	3.00
RBP4035/3/15	350	400	69	368	0.00247	1150	1100	1018	900	39.9	2.21
RBP4035/4/15	350	400	87	282	0.00320	1150	1075	980	870	50.4	1.75

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.

Profile Selection





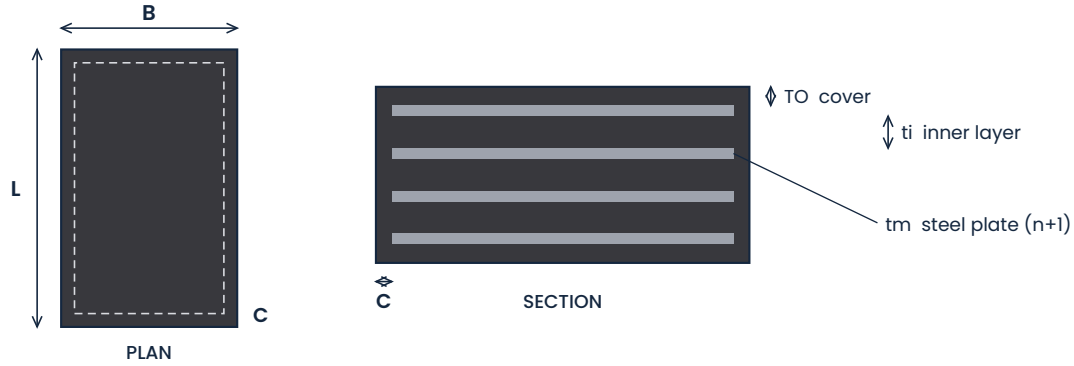
Plan Dimensions (L x B): 510 x 300 mm
Top/Bottom Cover rubber thickness, TO = 6 mm
Side Cover rubber thickness, C = 10 mm
Steel Plate thickness, Tm = 4.5 mm

Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP5130/2/12	300	510	49.5	991	0.00108	2370	1720	1910	1410	25.2	3.83
RBP5130/3/12	300	510	66.0	711	0.00151	2370	1680	1850	1350	33.6	2.87
RBP5130/4/12	300	510	82.5	555	0.00190	2370	1660	1780	1310	42.0	2.30
RBP5130/5/12	300	510	99.0	455	0.00236	2370	1640	1720	1280	50.4	1.91
RBP5130/6/12	300	510	115.5	385	0.00278	2030	1635	1600	1250	58.8	1.64
RBP5130/7/12	300	510	132.0	334	0.00318	1780	1630	1355	1220	67.2	1.43
RBP5130/1/15	300	510	36.0	1042	0.00103	1950	1510	1560	1230	18.9	5.10
RBP5130/2/15	300	510	55.5	587	0.00182	1900	1400	1500	1150	29.4	3.28
RBP5130/3/15	300	510	75.0	409	0.00262	1900	1350	1440	1090	39.9	2.42
RBP5130/4/15	300	510	94.5	313	0.00338	1900	1330	1375	1052	50.4	1.91
RBP5130/1/18	300	510	39.0	679	0.00158	1630	1247	1290	1030	21.0	4.59
RBP5130/2/18	300	510	61.5	367	0.00292	1580	1132	1230	930	33.6	2.87
RBP5130/3/18	300	510	84.0	251	0.00427	1580	1087	1170	880	46.2	2.09

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.

Profile Selection



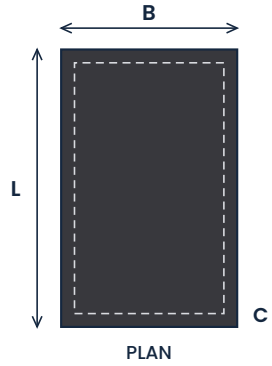
Plan Dimensions (L x B): 510 x 400 mm
Top/Bottom Cover rubber thickness, TO = 6 mm
Side Cover rubber thickness, C = 10 mm
Steel Plate thickness, Tm = 4.5 mm

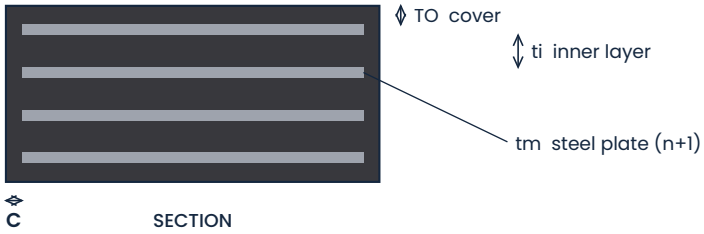
Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP5140/2/12	400	510	49.5	1835	0.00043	3220	2555	3000	2120	25.2	5.10
RBP5140/3/12	400	510	66.0	1320	0.00060	3220	2490	2935	2060	33.6	3.83
RBP5140/4/12	400	510	82.5	1031	0.00077	3220	2460	2860	2010	42.0	3.06
RBP5140/5/12	400	510	99.0	846	0.00093	3220	2440	2795	1970	50.4	2.55
RBP5140/6/12	400	510	115.5	717	0.00110	3220	2420	2720	1935	58.8	2.19
RBP5140/7/12	400	510	132.0	622	0.00127	3220	2415	2650	1903	67.2	1.91
RBP5140/1/15	400	510	36.0	1951	0.00040	3188	2241	2605	1889	18.9	6.80
RBP5140/2/15	400	510	55.5	1106	0.00071	2578	2070	2370	1720	29.4	4.37
RBP5140/3/15	400	510	75.0	771	0.00102	2578	2000	2307	1653	39.9	3.22
RBP5140/4/15	400	510	94.5	592	0.00133	2578	1960	2236	1602	50.4	2.55
RBP5140/5/15	400	510	114.0	481	0.00164	2578	1930	2165	1564	60.9	2.11
RBP5140/6/15	400	510	133.5	404	0.00195	2578	1919	2094	1530	71.4	1.80
RBP5140/2/18	400	510	61.5	698	0.00113	2140	1660	1958	1391	33.6	3.83
RBP5140/3/18	400	510	84.0	479	0.00165	2140	1590	1887	1321	46.2	2.78
RBP5140/4/18	400	510	106.5	364	0.00217	2140	1550	1816	1277	58.8	2.19

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.

Profile Selection





Plan Dimensions (L x B): 600 x 400 mm
Top/Bottom Cover rubber thickness, TO = 6 mm
Side Cover rubber thickness, C = 10 mm
Steel Plate thickness, Tm = 4.5 mm

Part No	Dimensions			Calculated Compressive Stiffness	Calculated Rotational Capacity	Fixed Bearings		Free Bearings		Unlocated	
	B	L	T			Max. Load Zero Rotation	Max. Load Full Rotation	Max. Load Zero Rotation	Max. Load Full Rotation	Max. Shear	Shear Stiffness
	mm	mm	mm	kN/mm	RAD/100kN	kN	kN	kN	kN	mm	kN/mm
RBP6040/2/12	400	600	49.5	2434	0.00032	3810	3320	3560	2765	25.2	6.00
RBP6040/3/12	400	600	66.0	1753	0.00043	3810	3250	3470	2673	33.6	4.50
RBP6040/4/12	400	600	82.5	1370	0.00058	3810	3205	3390	2610	42.0	3.60
RBP6040/5/12	400	600	99.0	1125	0.00070	3810	3180	3305	2560	50.4	3.00
RBP6040/6/12	400	600	115.5	954	0.00083	3810	3160	3220	2510	58.8	2.57
RBP6040/7/12	400	600	132.0	828	0.00095	3810	3140	3140	2470	67.2	2.25
RBP6040/1/15	400	600	36.0	2602	0.00030	4045	2930	3305	2465	18.9	8.00
RBP6040/2/15	400	600	55.5	1478	0.00051	3050	2715	2810	2260	29.4	5.14
RBP6040/3/15	400	600	75.0	1032	0.00076	3050	2620	2730	2160	39.9	3.79
RBP6040/4/15	400	600	94.5	793	0.00100	3050	2570	2640	2100	50.4	3.00
RBP6040/1/18	400	600	39.0	1727	0.00045	3370	2415	2740	2040	21.0	7.20
RBP6040/2/18	400	600	61.5	938	0.00084	2540	2198	2315	1830	33.6	4.50
RBP6040/3/18	400	600	84.0	644	0.00123	2540	2110	2230	1745	46.2	3.27

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.

UNIJOINT® RUBBER BEARING

Installation Procedures

1 Level Check | 2 Place Formwork | 3 Lay Epoxy Plinth | 4 Remove Formwork & Position Bearing

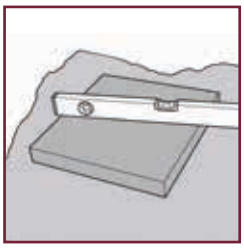
Step 1
LEVEL CHECK

Clean the bearing seat by removing all loose material, dust and laitance so that the concrete surface is sound.

Mark the bearing position and its orientation (B and L directions) on the seat according to the drawings. Install the level screws within the marked area and adjust them with a spirit level until all screw heads sit at the required plinth top level.

Place the **UNIJOINT® RUBBER BEARING** temporarily on the screw heads. Check its position against the setting-out marks, and use a spirit level across the bearing to confirm it is level in both directions. Adjust the screws where necessary. Remove the bearing, set aside.





Step 2
PLACE FORMWORK

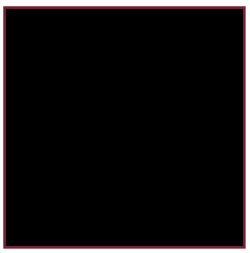
Fix the formwork around the marked area to form the plinth. The plinth must extend at least 20 mm beyond each edge of the bearing. Make sure the formwork is firm, level and sealed against the concrete surface so that the epoxy mortar cannot leak.



Step 3
LAY EPOXY PLINTH

Mix the epoxy mortar thoroughly according to the manufacturer's instructions and place it inside the formwork. Work it well under and around the level screws so that no voids are left.

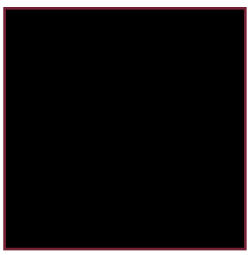
Finish the surface flush with the screw heads, flat to within ±1 mm across the bearing contact area. Leave an even, textured finish; do not trowel it smooth or glossy.



Step 4
REMOVE FORMWORK & POSITION BEARING

Allow the epoxy plinth to cure fully before removing the formwork. Check the plinth for voids, cracks or surface defects and repair them before proceeding.

Place the **UNIJOINT® RUBBER BEARING** centrally on the plinth. Check that it is level and fully seated. Do not load the bearing until the plinth has reached full strength.



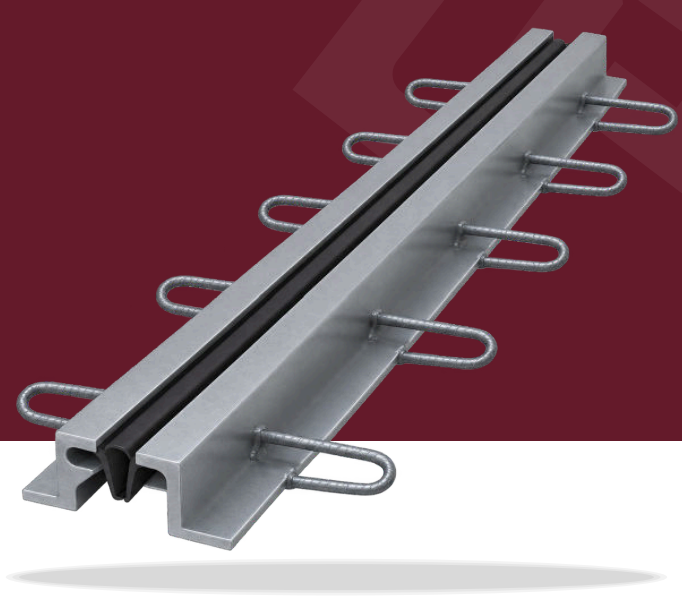
- Contact surfaces must be **flat, uniform textured and have good friction**. A tolerance of ±1 mm over the contact area is normally adequate.
- Avoid smooth or slippery finishes. Where steel contact plates are used, zinc spraying is recommended for corrosion protection.
- Out-of-parallel tolerance between the surfaces uses up the bearing's rotation capacity. Set an out-of-parallel tolerance preserving adequate rotation for working conditions.
- Contact surfaces should extend **at least 20 mm** beyond the bearing edges.
- Elastomeric bearings are expected to last at least as long as the structure. Even so, it is good practice to detail the structure so that bearings can be replaced.

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

UNITY RELIANCE

UNIJOINT CL SERIES

SECTION STEEL EXPANSION JOINT
BRIDGES | VIADUCTS | ELEVATED ROADS



Product Features

UNIJOINT CL SERIES is a single-gap section steel expansion joint for bridges, viaducts and elevated roadways. It is designed to carry traffic loads while accommodating the movement of the structure.

The system consists of two steel edge beams securely anchored into the concrete deck, with a continuous neoprene rubber seal locked into both edge beams. The seal keeps the joint watertight and gives a smooth transition for vehicles.

The seal can be replaced without removing the edge beams, giving a long service life under heavy traffic and varying temperatures.

Advantages

- **Watertight:** Continuous neoprene seal locked into both edge beams.
- **Smooth Ride:** Edge beams set flush with the road surface.
- **Heavy Duty:** Steel edge beams anchored into the deck to carry traffic loads.
- **Replaceable Seal:** Seal can be replaced without removing the edge beams.
- **Corrosion Protection:** Edge beams coated with grey epoxy zinc-rich primer, 60 microns.
- **Long Service Life:** Durable under heavy traffic and varying temperatures.

Fields of Application

Bridges & Flyovers	Highway Bridges
Viaducts	Approach Slabs
Elevated Roadways	Bridge Joint Replacement

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

UNIJOINT CL SERIES

Components

No.	Part	Description	Material
1, 2	Edge Beam	DT-F steel profile 40 x 70 with claw for the seal	Q355B steel
3	Rubber Seal	W-seal, locked into both edge-beam claws	Neoprene (CR)
4	Anchor Loop	Looped anchor bar welded to the edge beam at 200	Deformed steel bar
5	Shuttering Plate	Steel plate on the gap face, closes the blockout	Steel

Edge beams protected with grey epoxy zinc-rich primer, 60 microns.

Profile Selection

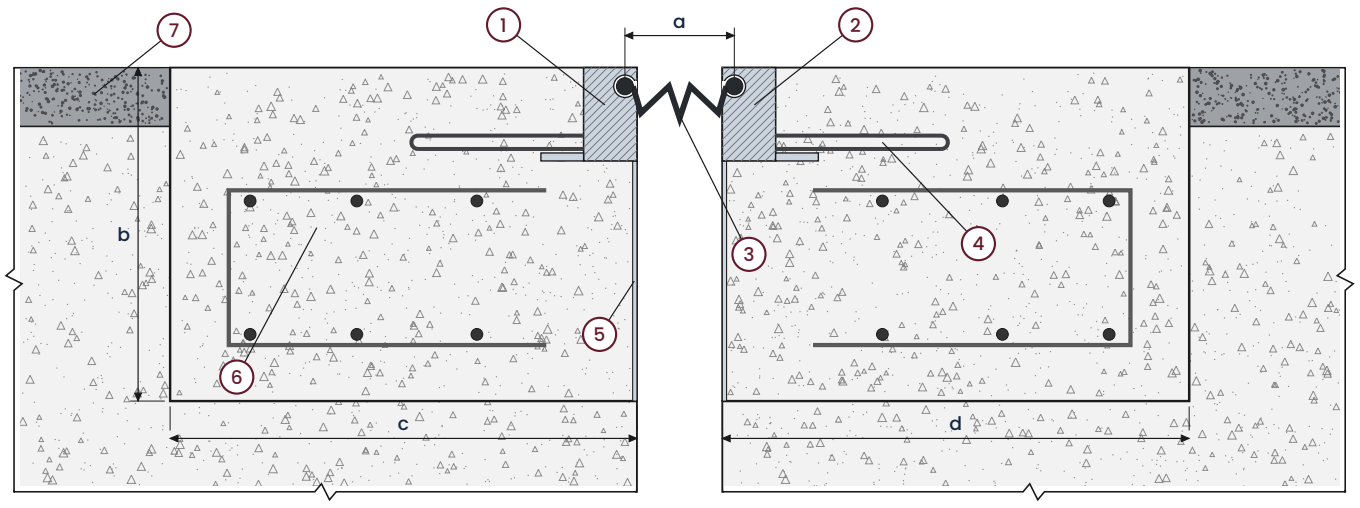
Type	Movement (mm)	a Min (mm)	a Mid (mm)	a Max (mm)	Blockout c (mm)	Blockout d (mm)	Blockout b (mm)	Length (mm)	Anchor Loop Spacing (mm)
CL 100	± 40 (80 total)	10	50	90	350	350	250	5000	200

*a = 10 fully closed, 90 fully open, 50 at installation unless the engineer directs otherwise.
Joint selection and blockout design by the engineer.*

Typical Drawing

1 UNIJOINT CL 100 – SECTION

Not to scale



LEGEND

1 Edge beam (left) 2 Edge beam (right) 3 Neoprene rubber seal 4 Anchor loop @ 200
5 Shuttering plate 6 Blockout concrete 7 Wearing course (by others)

a = seal opening b = blockout depth c, d = blockout width each side

Illustrations only – not for construction. Refer to drawing UR-JT-04.

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.

Maintenance

Regular inspection and maintenance keep the joint watertight and safe over its service life. Include joint cleaning and inspection in the bridge or deck maintenance cycle.

Inspection & Maintenance Schedule

Item	Check / Action	Interval
Seal groove	Remove debris and sediment from the seal groove.	Every 3 – 6 months
Rubber seal	Check for leakage, tearing or a seal pulled out of the claw. Replace the seal immediately if found.	Every 12 months
Joint interface	Inspect the interface between the edge beams and the deck pavement for cracks or damage. Repair promptly to keep the joint watertight and the anchorage sound.	Every 12 months
Riding surface	Check surface smoothness and alignment of the edge beams. Investigate any unusual noise or vibration under traffic.	Every 12 months
Steel protection	Although factory-coated, re-coat exposed steel with zinc-rich epoxy or an equivalent anti-corrosion paint.	Every 3 – 5 years

Installation Checks

Item	Requirement
Seal opening	a = 50 mm at installation, unless the engineer directs otherwise.
Edge beam level	Top of the edge beams parallel to the road grade and level with the finished surface.
Surfacing	Adjacent concrete or asphalt finished 0 – 5 mm above the edge beams, never below.
Anchorage	Anchor loops welded to the deck reinforcement before concreting.
Rubber seal	Fitted in one continuous length, without joins.

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.

Installation Procedures

1 Prepare | 2 Preset Gap | 3 Set & Anchor | 4 Pour | 5 Release & Cure | 6 Seal & Pave

Installation Procedures

Step 1
PREPARATION

Check blockout depth b and widths c, d against the drawing. Break out loose concrete, clean out dust, debris and standing water, and adjust the reserved reinforcement so the joint can be lowered in without obstruction.

Step 2
GAP PRESETTING

Preset the seal opening a = 50 mm unless the engineer directs otherwise, and lock it with the temporary frames. Check the opening along the full length before lifting the joint in.

Step 3
SETTING & ANCHORING

Lower the joint into the blockout, top parallel to the road grade and level with the finished surface, held by temporary frames at max. 1.0 m.

Weld the anchor loops to the reserved reinforcement (Ø16 mm or larger) every 2 – 3 bars, one side at a time. Avoid excessive heat on the beams.

Step 4
CONCRETING

Close the gap with tight formwork so no mortar enters the seal grooves. Pour C40 – C50 high-strength, steel-fibre or epoxy concrete as specified and vibrate it fully under and around the edge beams and anchors. Clean mortar off the claws at once.

Step 5
RELEASE & CURING

Loosen the temporary frames spanning the joint after initial set, not later than 2 hours after concreting, so the joint is free to move. Grind off and touch up with zinc-rich primer.

Cure the concrete and protect the joint from site traffic with a ramp until it has gained strength.

Step 6
SEAL & PAVING

Remove the formwork from the gap and clean the claws. Push the seal bulbs into both claws in one continuous length, without joins.

Pave 0 – 5 mm above the edge beams and check the gap is uniform.

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.

UNIJOINT RJ

STEEL / ELASTOMER MODULE BRIDGE DECK EXPANSION JOINT



Product Features

UNIJOINT RJ is a modular bridge deck expansion joint made of steel angles and a steel bridging plate encased in a flexible elastomer. It is supplied in module lengths that are bolted to the structural deck on either side of the expansion joint.

A range of models is available to accommodate total movements from 50 mm up to 330 mm, and skew angles. The joint is substantially waterproof and gives a smooth, wear-resistant running surface.

The modules are set between **UNISEAL AP77** nosings on both sides, which form the transition to the premix surfacing.

Advantages

- **Heavy Duty:** Steel angles and bridging plate for long durability under traffic.
- **Movement up to 330 mm:** Seven models from RJ 50 to RJ 330.
- **Corrosion Resistant:** Steel fully encased in elastomer.
- **Watertight & Anti-Skid:** Substantially waterproof joint with a skid-resistant surface.
- **Smooth Running Surface:** Wear-resistant surface for a smooth ride.
- **Modular:** Modules bolted to the deck; skew angles accommodated.

Fields of Application

Bridge Deck Expansion Joints	Viaducts & Elevated Roads
Highway Bridges & Flyovers	Bridge Joint Replacement

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

Material Specification

Property	Test Method	Unit	Result
Hardness	ASTM D2240	Shore A	60 ± 5
Tensile Strength	ASTM D412	MPa	15 min.
Elongation at Break	ASTM D412	%	350 min.
Bond Strength	ASTM D429 (Method B)	N/cm	7 min.
Compression Set	ASTM D395	%	25 max.
Ozone Resistance (7x magnification)	ASTM D1149	–	No crack
Abrasion Resistance (relative volume loss)	ISO 4649 (Method A)	mm^3	120 max.

All values are subject to a 5 – 10% tolerance.

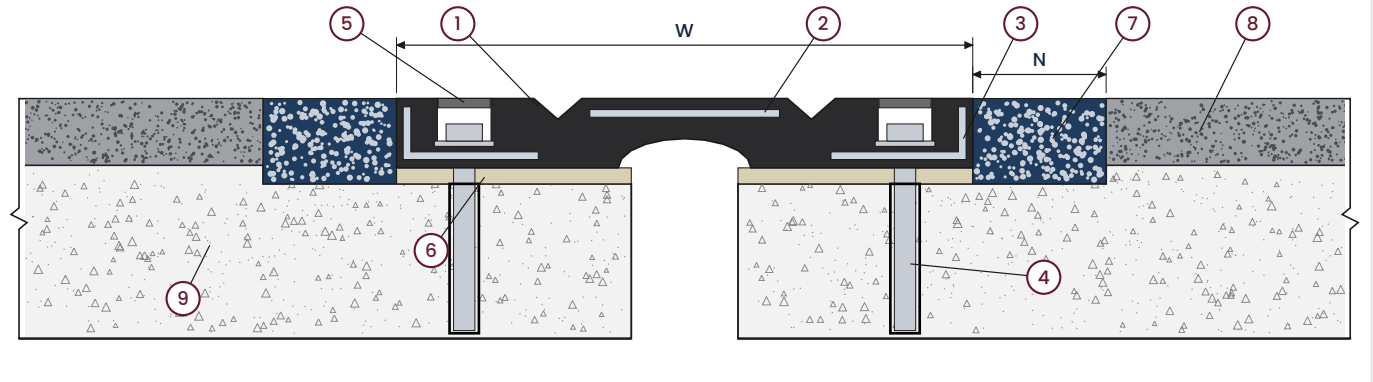
Model Selection

Model	Total Movement	Module Length	Module Width	Module Depth	Stud Diameter	Module Weight	Max. Stud Height Above Shelf	Bolt Torque
RJ 50	50 mm	2000 mm	274 mm	40 mm	12 mm	52 kg	32 mm	45 Nm
RJ 65	65 mm	2000 mm	356 mm	49 mm	16 mm	74 kg	40 mm	100 Nm
RJ 80	80 mm	2000 mm	432 mm	52 mm	16 mm	96 kg	41 mm	150 Nm
RJ 100	102 mm	2000 mm	590 mm	54 mm	20 mm	150 kg	42 mm	175 Nm
RJ 165	165 mm	2000 mm	724 mm	75 mm	24 mm	272 kg	51 mm	190 Nm
RJ 230	230 mm	2000 mm	890 mm	93 mm	24 mm	375 kg	60 mm	275 Nm
RJ 330	330 mm	1220 mm	1207 mm	127 mm	30 mm	451 kg	70 mm	300 Nm

Anchor studs: diameter as the table, grade 8.8, fixed with bonding chemical; spring and oblong washer under each nut.

Typical Drawing

1 UNIJOINT RJ 80 – TYPICAL SECTION — Not to scale



LEGEND

1. RJ module (elastomer)
2. Steel bridging plate
3. Steel angle
4. Anchor stud, nut & washers
5. Bolt hole sealant
6. Levelling mortar
7. UNISEAL AP77 nosing
8. Premix surfacing
9. Concrete deck

W = module width (Model Selection table) N = nosing width (100 typical) Construction gap by the engineer

Illustrations only – not for construction. Refer to drawing UR-JT-05.

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.

Installation Procedures

1 Prepare Recess | 2 Levelling & Studs | 3 Fix Modules | 4 Seal & Nosing

Installation Procedures

Step 1

PREPARE RECESS

Set out the joint line on the road surface and mark the recess width – module width W plus the nosing on each side. Saw-cut the premix along both lines to its full depth so the edges stay straight and unbroken.

Remove the surfacing and break out the concrete to a sound, flat and level recess at the required depth. Check that the construction gap is clear of debris and formwork along the full length.

Hack the recess and clean it with an air blower and hot air burner, removing all dust, laitance, loose and sub-standard material. The recess must be clean and dry before the next step.

Step 2

LEVELLING & STUDS

Apply levelling mortar to both shelves so the modules will sit fully supported on a flat bed, with their top level with the premix surfacing. Check the level with a straight edge and let the mortar gain strength before drilling.

Lay the modules out as a template and mark the bolt centres on both sides of the gap. Drill the holes to the diameter and depth recommended by the bonding chemical manufacturer, and blow them clean.

Fix the anchor studs vertically with bonding chemical, at the diameter and maximum height above the shelf given in the Model Selection table. Do not disturb or load the studs until the chemical has fully cured.

Step 3

FIX MODULES

Place the **UNIJOINT RJ** modules over the studs, starting from one end of the joint. Butt each module tight against the last so the running surface is continuous, and check that the modules are level and in line with the joint.

Fit the spring and oblong washers and tighten the nuts with a torque wrench to the bolt torque in the Model Selection table. Re-check the levels after tightening.

Step 4

SEAL & NOSING

Clean out the bolt holes and fill them flush with sealant to keep water and grit off the anchorage.

Pour the **UNISEAL AP77** nosing into the trench between the module and the premix on both sides, finished flush with the road surface, in accordance with the AP77 technical data sheet.

Open to traffic only when the AP77 nosing has cooled.

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.



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.