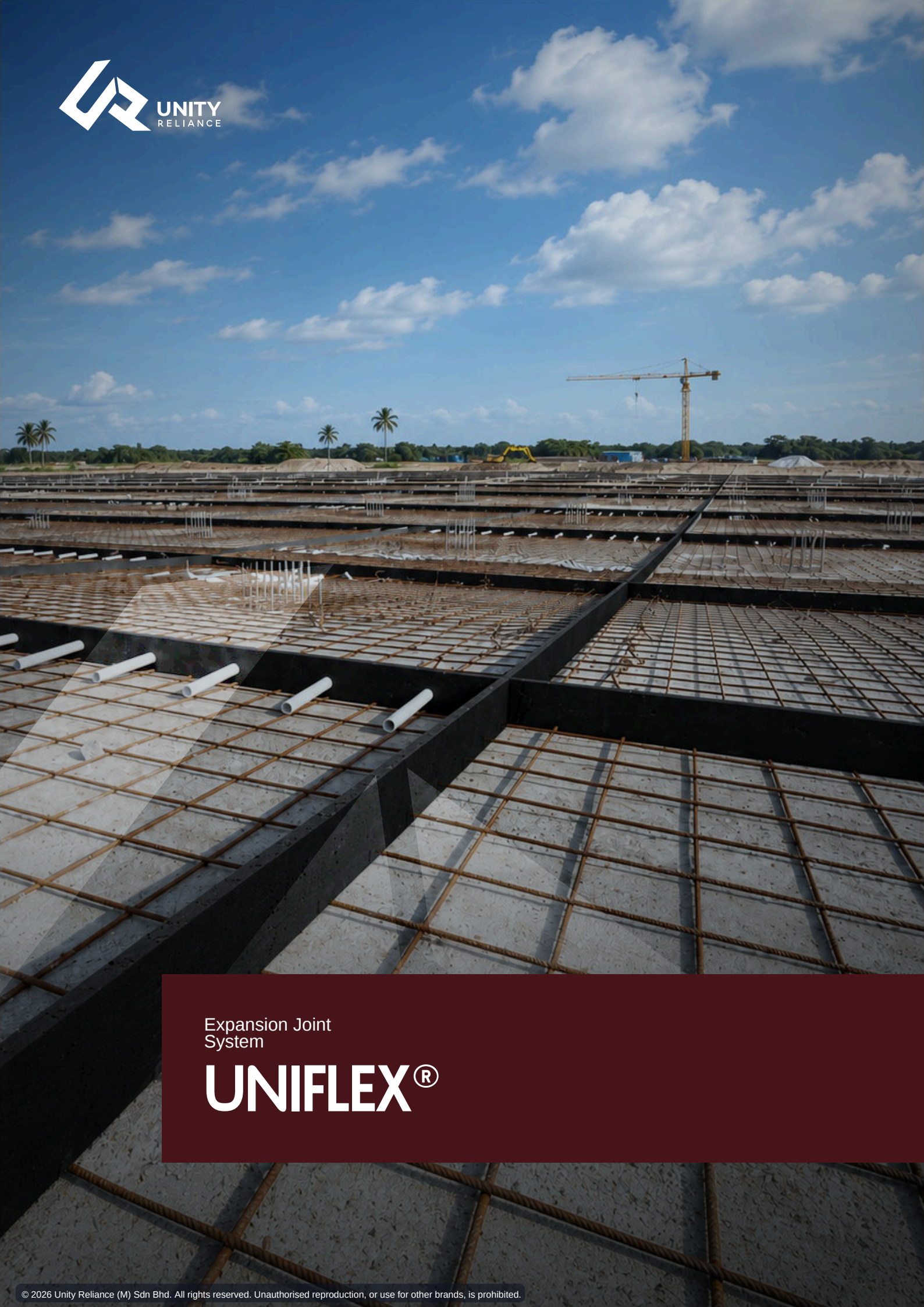

UNITY
RELIANCE

Expansion Joint
System

UNIFLEX®

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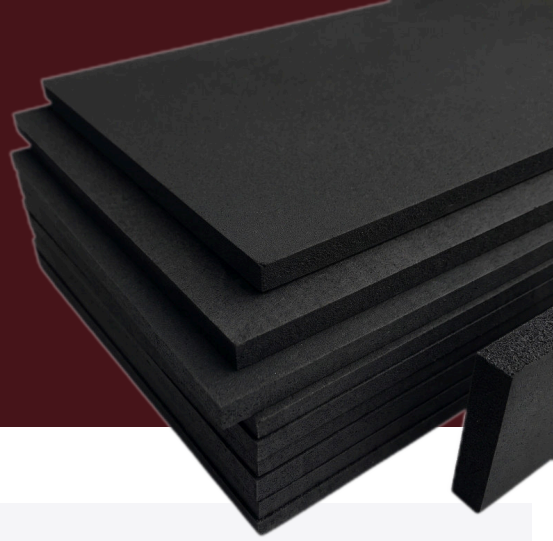
UNIFLEX® PE FILLER BOARD

CLOSED CELL POLYETHYLENE FILLER BOARD



Product Features

UNIFLEX® PE Closed Cell Polyethylene Filler Board is a non-extruding, non-absorbent, UV resistant, semi-rigid, highly resilient, bitumen-free, closed cell polyethylene board. It is used as a joint filler in expansion and movement joints in concrete, brickwork, blockwork and masonry.

Concrete expands and contracts with temperature. Expansion joints between slabs, and between slabs and other structures, give that movement room. The joint needs a filler that compresses when the concrete expands and recovers when it contracts. **UNIFLEX® PE** has high compression and recovery, so it follows the joint through these cycles.

UNIFLEX® PE is rot-proof and joint sealants do not bond to it, so it acts as a natural bond breaker. It supports the sealant and sets the sealant depth, and its top strip can be zip cut and pulled out later to leave a clean sealing slot. Being bitumen-free and non-tainting, it is also suitable for water-retaining structures.

SUITABLE FOR DRINKING WATER CONTACT
Tested to MS 1583 and cytotoxicity test · SPAN approved

Advantages

Good thermal insulation properties	Lightweight
Natural bond breaker	Non-absorbent and non-tainting
Easy to install	Bitumen free and rot proof, ideal for water retaining structures

Fields of Application

Brick Works & Block Works	Masonry
Motorways, Runways, Taxiways, Aprons	Pedestrian Areas, Piers & Kerbs
Concrete Roads & Pavements	Basements, Tunnels & Subways
Bridges & Viaducts	Abutments & Parapet Walls
Dams & Reservoirs	Water & Waste Water Treatment Plants

Compatible Products

UNISEAL® PU, PU PRO, PS and MS joint sealants
UNISTICK® CA contact adhesive, to hold the board before the second pour

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UNIFLEX® PE FILLER BOARD

Technical Properties

Property	Unit	Test Method	Result
Density	kg/m³	ISO 845	80 ± 10%
Tensile Strength	kPa	ISO 1798	> 700
Elongation at Break	%	ISO 1798	> 80
Tear Strength	N/cm	ISO 8067	> 8
Compression Set at 23°C / 50% RH	%	ISO 1856	< 20

*Values based on independent laboratory tests (2025); test report available on request.

Physical Properties

Material	:	Closed Cell Polyethylene (PE)
Colour	:	Black *(Other colours available upon request)
Size	:	2m x 1m
Thickness	:	10mm , 12mm , 15mm , 20mm , 25mm *(30mm and above, and other sizes, on special order)
Density	:	80kg/m³ ± 10%
Packaging	:	20 sheet / bundle (10mm, 12mm) 15 sheet / bundle (15mm) 10 sheet / bundle (20mm, 25mm)
Weight	:	Dependent upon thickness

Storage

UNIFLEX® PE is a plastic product and keeps for a long time. Store it flat and under cover, in a dry place away from direct sunlight, heat and sources of ignition.

Health & Safety

UNIFLEX® PE presents no health hazard in normal handling and use. Wear gloves when cutting, and follow normal site safety practice.

Existing Joints

UNIFLEX® PE is installed before the second pour. It cannot be pressed into a joint that is already formed; use **UNIFLEX® PE BACKER ROD** to back the sealant in existing joints.

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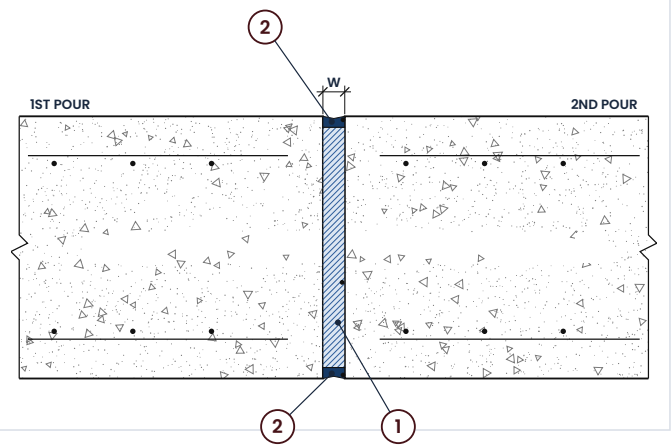
UNIFLEX® PE FILLER BOARD

Typical Drawings & Profiles

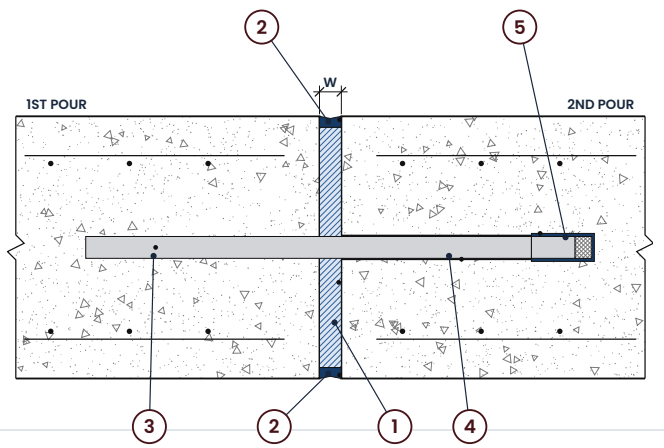
1 EXPANSION JOINT

Not to scale



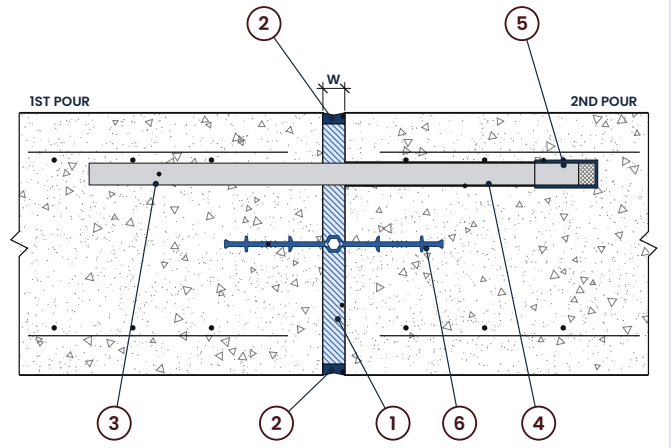
2 EXPANSION JOINT WITH DOWEL BAR

Not to scale



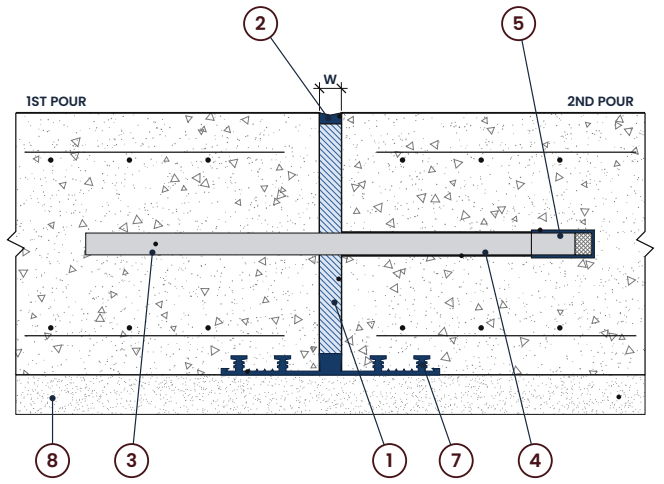
3 EXPANSION JOINT WITH WATERSTOP

Not to scale



4 SLAB ON GROUND WITH WATERSTOP

Not to scale

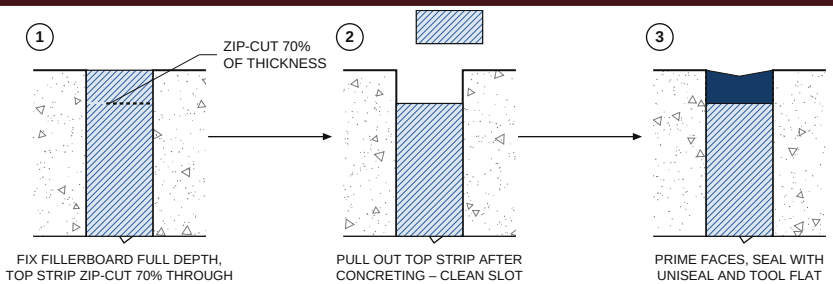


LEGEND

1. UNIFLEX® PE fillerboard
2. UNISEAL® joint sealant
3. Dowel bar, bonded in 1st pour
4. Debonded end, UNICOAT® coated
5. Dowel cap, compressible fill
6. UNISTOP® IEJ waterstop
7. UNISTOP® EEJ waterstop
8. Lean concrete / blinding

5 FORMING THE SEALING SLOT

Not to scale



Zip cut through 70% of the board thickness only. The uncut 30% holds the top strip in place and keeps concrete out of the slot.

UNIFLEX® PE is a natural bond breaker, so no bond breaker tape is needed under the sealant.

Illustrations only – not for construction. Refer to drawing UR-FL-01 / UR-FL-02.

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UNIFLEX® PE FILLER BOARD

Installation Procedures

1 First Pour | 2 Cut & Zip Cut | 3 Fix Board & Second Pour | 4 Joint Sealing



Figure 1 – Zip strip pulled out



Figure 2 – Joint sealed

Step 1
FIRST POUR

Cast the first side of the joint (1st pour) against the formwork. When the concrete has hardened, remove the formwork. Check that the joint face is clean, sound and free of fins, protrusions and loose material, so that **UNIFLEX® PE** sits flat against it.

Step 2
CUT & ZIP CUT

Cut **UNIFLEX® PE** with a sharp knife to the slab thickness and to the length of the joint. Where dowel bars cross the joint, mark and punch the board for the dowels.

Then **"zip cut"** a top strip along the whole length of the board, at the depth required for the joint sealant. Cut through about **70%** of the board thickness only and leave the remaining **30%** uncut. The uncut part holds the strip in place and stops concrete slipping into the slot during the second pour.

Step 3
FIX BOARD & SECOND POUR

Fix the board against the hardened joint face to the full slab depth, with the top strip flush with the finished surface. Hold it in place with concrete nails, or spot bond it with **UNISTICK® CA** and allow the contact adhesive to set.

Cast the second side of the joint (2nd pour) against the board.

Step 4
JOINT SEALING

When the concrete has cured, pull the top strip out of the joint to leave a clean, uncontaminated sealing slot (Figure 1). Seal the joint with an appropriate sealant from the **UNISEAL®** range (Figure 2). Sealants do not bond to **UNIFLEX® PE**, so no bond breaker tape is needed.

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UNIFLEX® RBCF

RESIN BONDED CORK FILLER



Product Features

UNIFLEX® RBCF is a resin bonded cork expansion joint filler board. It is made from granulated cork bound together with a synthetic resin, and it **supports the joint sealant** in expansion and movement joints.

UNIFLEX® RBCF does not contain bitumen or tar, so it cannot contaminate the joint faces or impair the adhesion of the joint sealant. In wet or moist conditions **it swells to occupy a larger volume** than the material as supplied.

UNIFLEX® RBCF is suitable for all types of concrete construction. It is particularly recommended for **water-retaining structures**, where joints must stay tightly packed even when they open in width.

Advantages

Simple and easy to handle and install	Will not extrude under compression
Resilient, non-tainting and rot proof	Low load transfer across an expansion joint

Fields of Application

Water Tanks	Driveways
Wet Areas	Highways and Bridges
Water Treatment Plants	Airport Runways
Dams	Pedestrian Malls
Sewage Treatment Plants	Footpaths
Reservoirs	Brick or Block Walls
Swimming Pools	Abutments & Parapet Walls

Compatible Products

UNISEAL® PU, PU PRO, PS and MS joint sealants, over UNIFLEX® PE Bond Breaker Tape
UNISTICK® CA contact adhesive, to fix the board before the second pour

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Technical Properties

Property	Unit	Result
Density	kg/m³	200 – 260
Compression to 50% of original thickness (stress applied)	kPa	450 – 600
Recovery after compression	%	> 90
Extrusion	mm	< 3
Water Absorption (24 hours immersion)	%	< 20
Expansion in Boiling Water (1 hour)	%	> 85

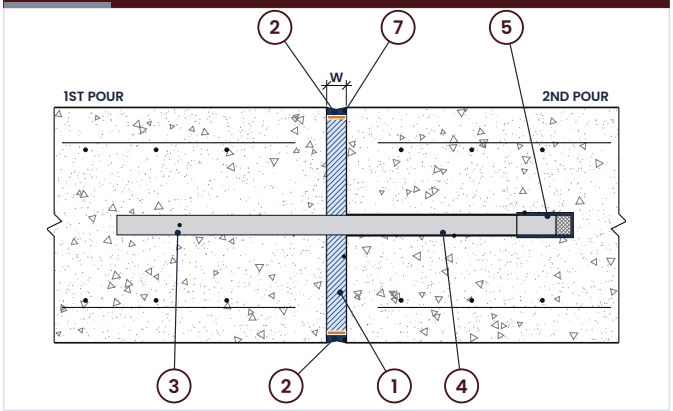
*Values based on independent laboratory tests to ASTM D545 (2025); test report available on request.

Physical Properties

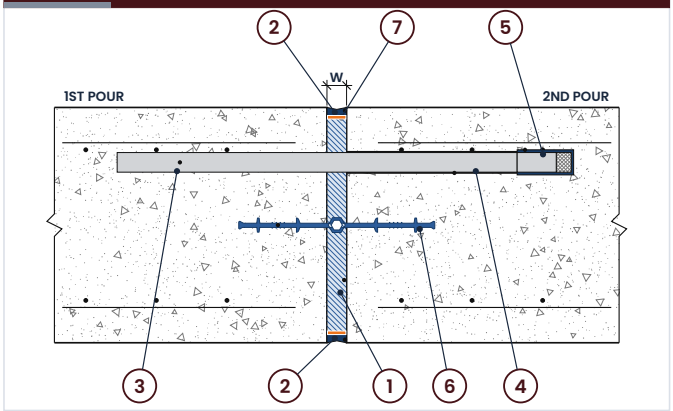
Material	:	Granulated cork bound with resin
Colour	:	Brown
Size	:	915mm x 610mm
Thickness	:	10mm, 12mm, 20mm, 25mm
Packing	:	10mm : 30 sheets / carton 12mm : 25 sheets / carton 20mm : 15 sheets / carton 25mm : 12 sheets / carton

Typical Drawing

1 EXPANSION JOINT WITH DOWEL BAR — Not to scale



2 EXPANSION JOINT WITH WATERSTOP — Not to scale



LEGEND

1. UNIFLEX® RBCF fillerboard
2. UNISEAL® joint sealant
3. Dowel bar, bonded in 1st pour
4. Debonded end, UNICOAT® coated
5. Dowel cap, compressible fill
6. UNISTOP® IEJ waterstop
7. UNIFLEX® PE bond breaker tape

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

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Installation Procedures

1 First Pour | 2 Cut & Fix Board | 3 Second Pour | 4 Joint Sealing

Step 1
FIRST POUR

Cast the first side of the joint (1st pour) against the formwork. When the concrete has hardened, remove the formwork. Check that the joint face is clean, sound and free of fins, protrusions and loose material, so that **UNIFLEX® RBCF** sits flat against it.

Step 2
CUT & FIX BOARD

Cut **UNIFLEX® RBCF** with a sharp knife or a fine-toothed saw to the length of the joint, and to the slab depth less the depth of the sealing slot. Where dowel bars cross the joint, mark and drill the board for the dowels.

Fix the board against the hardened joint face. Spot bond it with **UNISTICK® CA** (recommended) and allow the contact adhesive to set. Concrete nails can also be used to hold the board. Place a removable timber former, the same width as the board, on top of it and flush with the finished surface. The former forms the sealing slot.

Step 3
SECOND POUR

Cast the second side of the joint (2nd pour) against the board and the former. When the concrete has hardened, remove the former to leave the sealing slot.

Alternatively, fix **UNIFLEX® RBCF** to the full depth of the slab and cut it back to the sealant depth later. This method is used where the joint can only be cleaned and sealed after all other work has finished, for example on housing estate roads.

Step 4
JOINT SEALING

Clean the sealing slot. It must be dry and free of dust, laitance and loose cork. Lay **UNIFLEX® PE BOND BREAKER TAPE** over the top of the board, so that the sealant bonds to the two joint faces only and not to the cork.

Seal the joint with an appropriate sealant from the **UNISEAL®** range, following the sealant data sheet for priming and joint dimensions.

Shelf Life & Storage

Shelf life is 12 months when stored correctly. Store **UNIFLEX® RBCF** flat, under cover and in dry conditions, clear of the ground. As with all organic materials, prolonged storage in wet conditions carries a slight risk of spontaneous combustion.

Health & Safety

UNIFLEX® RBCF presents no health hazard in normal handling and use. Wear gloves and a dust mask when cutting. Refer to the Safety Data Sheet for further information.

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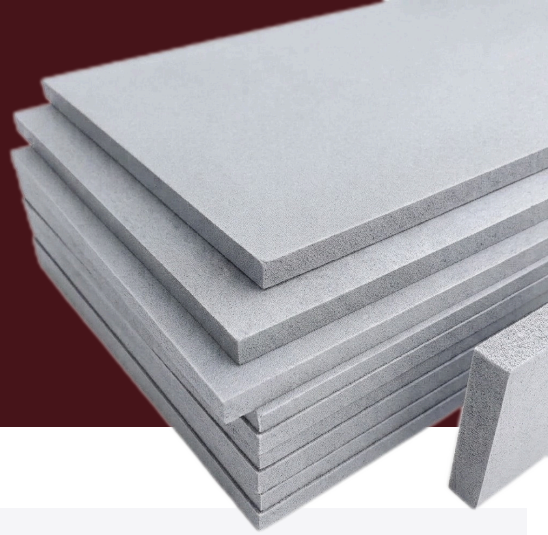
UNIFLEX® PE FR

FIRE RETARDANT CLOSED CELL POLYETHYLENE FILLER BOARD



Product Features

UNIFLEX® PE FR is a **fire retardant closed cell polyethylene filler board**. It is a joint filler for expansion and movement joints in concrete, brickwork, blockwork and masonry where a fire retardant filler is required, and it also insulates the joint thermally.

UNIFLEX® PE FR is non-extruding, non-absorbent, UV resistant, semi-rigid and highly resilient. It is bitumen-free and rot-proof, with high compression and recovery, so it **accommodates thermal and other structural movements** without load transfer or reflective cracking through the joint.

UNIFLEX® PE FR supports the joint sealant and sets the sealant depth. Sealants do not bond to it, so it acts as a natural bond breaker.

Advantages

Good Thermal Insulation Properties	Fire Retardant (Self-Extinguishing)
Lightweight & Easy to Install	Non-Absorbent And Non-Tainting
Bitumen Free And Rot Proof	Ideal For Water Retaining Structures

Fields Of Application

Brick Works & Block Works	Masonry
Partition Wall Joints	Pedestrian Areas, Piers & Kerbs
Expansion & Movement Joints	Basements, Tunnels & Subways
Fire Retardant Joint Filling	Abutments & Parapet Walls
Dams & Reservoirs	Water & Waste Water Treatment Plants

Compatible Products

UNISEAL® VT-629 fire rated sealant, or PU, PU PRO, PS and MS joint sealants
UNISTICK® CA contact adhesive, to fix the board before the second pour

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Technical Properties

Property	Unit	Result
Density	kg/m³	30
Tensile Strength	kg/cm²	2.0 (L), 1.2 (W)
Elongation	%	150 (L), 130 (W)
Tear Strength	kg/cm	1.2 (L), 1.0 (W)
Shrinkage (70°C, 22 hr)	%	< -0.2 (L), < +1.0 (W)
Thermal Conductivity @ 23°C	W/m.K	0.037
Compression Set	%	7.70
Compression Strength	kg/cm²	0.30
Water Absorption	g/cm²	< 0.01
Flammability	-	Self-extinguishing
Production Process	-	Free of CFC, asbestos and fibre

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

Physical Properties

Material	:	Chemically Closed Cell Polyethylene (PE)
Colour	:	Grey *(other colours available upon request)
Size	:	1.2m width
Thickness	:	10mm, 12mm, 15mm, 20mm, 25mm *(other sizes on request)
Density	:	30 kg/m³
Packaging	:	10mm x 1.2m x 60m 12mm x 1.2m x 60m 15mm x 1.2m x 60m 20mm x 1.2m x 40m 25mm x 1.2m x 30m
Weight	:	Dependent upon thickness

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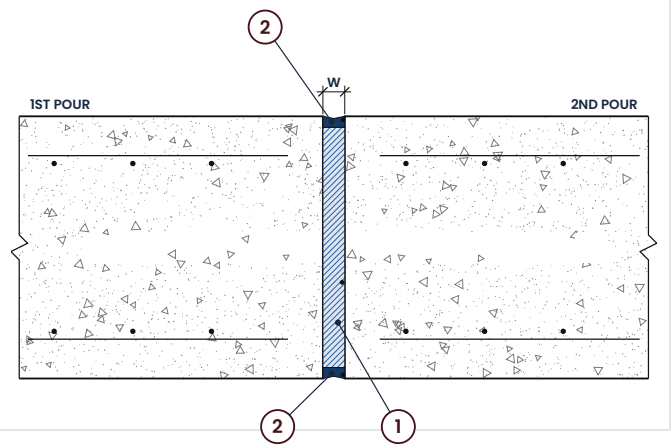
Typical Drawings

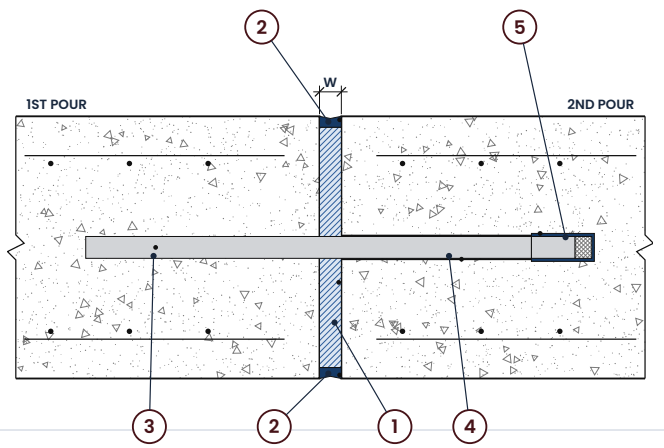
1 EXPANSION JOINT

Not to scale



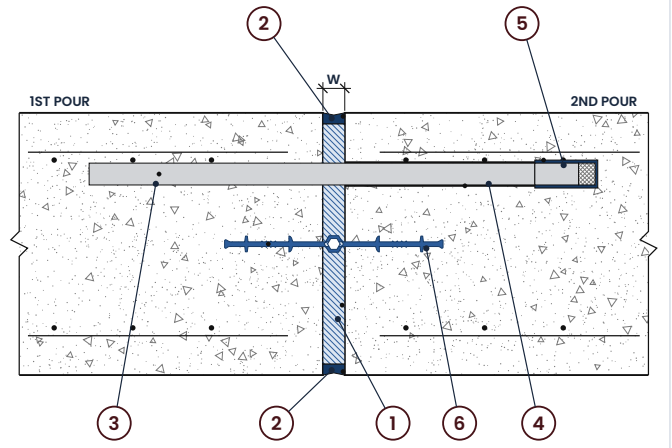
2 EXPANSION JOINT WITH DOWEL BAR

Not to scale



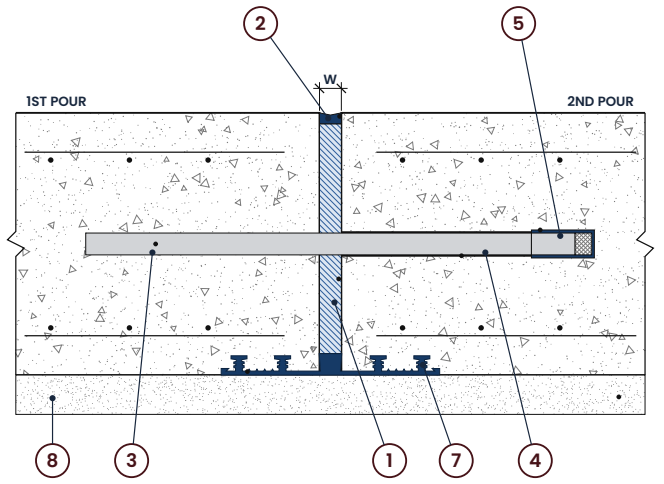
3 EXPANSION JOINT WITH WATERSTOP

Not to scale



4 SLAB ON GROUND WITH WATERSTOP

Not to scale

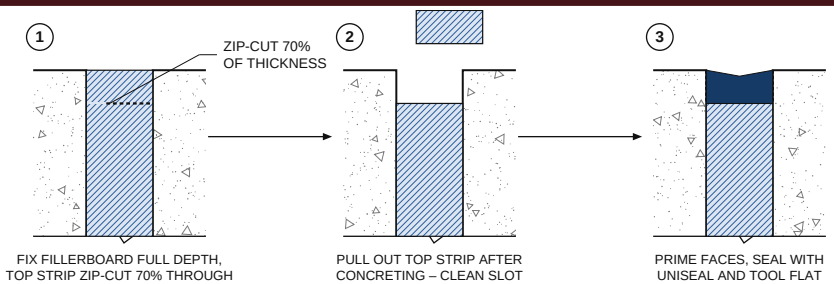


LEGEND

1. UNIFLEX® PE FR fillerboard
2. UNISEAL® joint sealant
3. Dowel bar, bonded in 1st pour
4. Debonded end, UNICOAT® coated
5. Dowel cap, compressible fill
6. UNISTOP® IEJ waterstop
7. UNISTOP® EEJ waterstop
8. Lean concrete / blinding

5 FORMING THE SEALING SLOT

Not to scale



Zip cut through 70% of the board thickness only. The uncut 30% holds the top strip in place and keeps concrete out of the slot.

UNIFLEX® PE FR is a natural bond breaker, so no bond breaker tape is needed under the sealant.

Illustrations only – not for construction. Refer to drawing UR-FL-01 / UR-FL-02.

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Installation Procedures

1 First Pour | 2 Cut & Zip Cut | 3 Fix Board & Second Pour | 4 Joint Sealing

Step 1
FIRST POUR

Cast the first side of the joint (1st pour) against the formwork. When the concrete has hardened, remove the formwork. Check that the joint face is clean, sound and free of fins, protrusions and loose material, so that **UNIFLEX® PE FR** sits flat against it.

Step 2
CUT & ZIP CUT

Cut **UNIFLEX® PE FR** with a sharp knife to the slab thickness and to the length of the joint. Where dowel bars cross the joint, mark and punch the board for the dowels.

Then **"zip cut"** a top strip along the whole length of the board, at the depth required for the joint sealant. Cut through about **70%** of the board thickness only and leave the remaining **30%** uncut. The uncut part holds the strip in place and stops concrete slipping into the slot during the second pour.

Step 3
FIX BOARD & SECOND POUR

Fix the board against the hardened joint face to the full slab depth, with the top strip flush with the finished surface. Hold it in place with concrete nails, or spot bond it with **UNISTICK® CA** and allow the contact adhesive to set.

Cast the second side of the joint (2nd pour) against the board.

Step 4
JOINT SEALING

When the concrete has cured, pull the top strip out of the joint to leave a clean, uncontaminated sealing slot. Seal the joint with an appropriate sealant from the **UNISEAL®** range. Sealants do not bond to **UNIFLEX® PE FR**, so no bond breaker tape is needed.

Storage

UNIFLEX® PE FR is a plastic product and keeps for a long time. Store it under cover, in a dry place away from direct sunlight, heat and sources of ignition.

Health & Safety

UNIFLEX® PE FR presents no health hazard in normal handling and use. Wear gloves when cutting, and follow normal site safety practice.

Existing Joints

UNIFLEX® PE FR is installed before the second pour. It cannot be pressed into a joint that is already formed; use **UNIFLEX® PE BACKER ROD** to back the sealant in existing joints.

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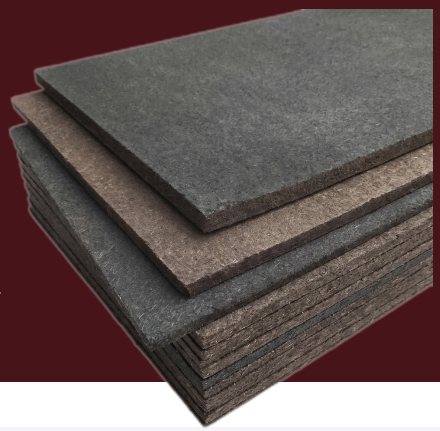
UNIFLEX® FB

BITUMINOUS FIBREBOARD



Product Features

UNIFLEX® FB is a bitumen-impregnated fibreboard joint filler made from sugar cane fibre and bitumen. It is a resilient, compressible board used to form and fill expansion and isolation joints in in-situ concrete, and it meets the compression and recovery requirements of ASTM D1751.

The board is light, easy to cut and handle, does not extrude under compression and has low water absorption. It is supplied in standard sheets and can be cut into strips to suit the slab depth. It can be sealed directly with bitumen-based sealants, or with PU, PS and MS sealants when a bond breaker tape or backer rod separates the sealant from the board.

Advantages

- Meets ASTM D1751 Compression And Recovery
- Low Water Absorption
- Does Not Extrude Under Compression
- Recovers 75 - 80% After 50% Compression
- Light, Easy To Cut And Handle
- Supplied In Sheets Or Cut To Strips

Fields Of Application

- **Heavy Traffic Surfaces:** Concrete roadways, highways, airport runways.
- **Paving & Infrastructure:** Driveways, aprons, walkways, curbs, and gutters.
- **Reinforced Concrete Structures:** Piers, retaining walls, and bridge abutments.
- **Paving Insets & Interfaces:** Drainage channels, manholes, and slab flooring.
- **Internal Finishes & Flatwork:** Interior slabs, concrete flatwork and floor systems.
- **Protection Board:** Over waterproofing membranes during backfilling or concreting.

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Technical Properties

Property	Test Method	Result **25MM THK 35% BITUMEN CONTENT**
Dimension Thickness	ASTM D1751	25 mm
Density	ASTM D1751	330 - 350 kg/m³
Water Absorption	ASTM D1751	15 %
Asphalt Content	ASTM D1751	36 - 37 %
After compressing to 50% of the specimen's thickness:		
Compression	ASTM D1751	2800 - 3200 kPa
Loss in Weight	ASTM D1751	0.1 - 0.2 %
Extrusion	ASTM D1751	0.5 mm
Recovery (10 mins @ 50%)	ASTM D1751	75 - 80 %

All values given are subject to 5-10% tolerance

Physical Properties

Material	:	Bitumen-impregnated fibreboard
Bitumen Content	:	35%
Sheet Size	:	2.44 m x 1.22 m / 2.20 m x 1.22 m
Thickness	:	10, 12, 18 & 25 mm
Strips	:	Cut to width on request
Colour	:	Dark brown
Joint Sealant	:	Bitumen-based; PU, PS or MS over a bond breaker

Limitations

UNIFLEX® FB can be sealed directly with bitumen-based joint sealants such as **UNISEAL® BITUFLEX**. PU, PS and MS sealants must not touch the board, because the mobile bitumen fractions in it can degrade elastomeric sealants. Separate them from the board with **UNIFLEX® PE Bond Breaker Tape** or **UNIFLEX® PE Backer Rod**. Not suitable for joints that are permanently wet or submerged.

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Installation Procedures

1 Preparation | 2 Application | 3 As Protection Board | 4 Joint Sealing

Installation Procedures

Step 1
PREPARATION

To form an expansion joint in new concrete, brickwork, blockwork or masonry, construct one side of the joint before positioning and fixing **UNIFLEX® FB**. Make sure the contact surface is clean, dry and free of loose debris, dust and grease so the board sits firmly and evenly against it.

Step 2
APPLICATION

A sealing slot can be formed by placing a removable timber former on top of **UNIFLEX® FB**. Alternatively, install **UNIFLEX® FB** to the full depth of the slab and cut it back to the required sealant depth afterwards. The second method is generally used for housing estate roads and heavy-traffic areas that cannot be cleaned and sealed until all adjacent building work has finished.

Step 3
AS PROTECTION BOARD

Where **UNIFLEX® FB** is used as a protection board over a waterproofing coating or membrane, fix it to the membrane with a compatible adhesive, in full surface contact. The board protects the membrane from puncture and mechanical damage during backfilling or concrete placement.

Step 4
JOINT SEALING

Check that **UNIFLEX® FB** fills the joint completely, with no voids, so that it gives continuous, solid support to the sealant. Bitumen-based sealants such as **UNISEAL® BITUFLEX** can be applied directly onto the board. For PU, PS or MS sealants, first place a bond breaker tape or backer rod to separate the sealant from **UNIFLEX® FB**.

Shelf Life & Storage

Store **UNIFLEX® FB** under cover in dry conditions. As with all organic materials, prolonged storage in wet or damp conditions carries a slight risk of spontaneous combustion.

Health & Safety

UNIFLEX® FB presents no health hazard in normal handling and use. Refer to the Safety Data Sheet for further information.

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Installation Procedures

1 Surface Preparation | 2 Laying The Boards | 3 Covering & Protection

Step 1

SURFACE PREPARATION

The base must be level, clean and free of sharp projections. Under slabs, compact the hardcore and blind it. On roofs and walls, complete the waterproofing and let it cure before the boards go on.

Keep solvent-based coatings, primers and adhesives away from **UNIFLEX® XPS**. Use water-based products such as **UNICOAT® BITUMEN 300**.

Step 2

LAYING THE BOARDS

Lay **UNIFLEX® XPS** with the joints tight and staggered. Cut the boards with a sharp knife or a fine-toothed saw to fit edges and penetrations.

Under slabs: lay the boards on the blinding. **Inverted roofs:** loose-lay them on top of the waterproofing membrane. **Walls:** fit them tight against the coated wall. **Precast panels:** place the board in the mould as the core between the two concrete wythes.

Step 3

COVERING & PROTECTION

Cover the boards as soon as possible. **Under slabs:** protect them from traffic and damage until the slab is cast. **Inverted roofs:** lay filter fabric, then pavers on pads or gravel ballast to hold the boards against wind uplift and flotation. **Walls:** backfill in compacted layers without damaging the boards.

Ballast weight, falls, drainage and fire protection are designed by the project consultant.

Storage

Store **UNIFLEX® XPS** flat and under cover, away from direct sunlight, heat, flame and solvents.

Health & Safety

UNIFLEX® XPS presents no health hazard in normal handling and use. Wear gloves when cutting, and follow normal site safety practice.

Limitations

Solvents dissolve polystyrene: do not let solvent-based coatings, primers, adhesives or sealants touch **UNIFLEX® XPS**. It is combustible (UL 94 HB), so do not leave it exposed inside buildings.

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UNIFLEX® PE BACKER ROD

CLOSED CELL POLYETHYLENE FILLER



Product Features

UNIFLEX® PE BACKER ROD is a non-extruding, non-absorbent, highly resilient, bitumen-free, closed cell polyethylene backing rod. It is used as a backing material for cold-applied elastomeric joint sealants, to give a watertight and airtight seal in expansion and movement joints in concrete, brickwork, blockwork and masonry.

UNIFLEX® PE BACKER ROD supports the sealant and sets its depth, so the sealant is applied at the correct width-to-depth ratio. The sealant does not bond to the rod, which prevents three-sided adhesion and leaves the sealant free to stretch and compress with the joint.

UNIFLEX® PE BACKER ROD is rot-proof and has high compression and recovery, so it stays tight in the joint as the joint opens and closes with thermal and structural movement.

SUITABLE FOR DRINKING WATER CONTACT
Tested to MS 1583 and cytotoxicity test · SPAN approved

Advantages

Control joint depths and ensures a proper width to depth ratio
Non-absorbent surface eliminates three-side adhesion of the elastomeric sealant
Bitumen free and rot proof, ideal for water retaining structures
Closed cell structure does not allow the absorption of moisture or air
Fully compatible with a wide variety of sealants
Efficient and cost-effective

Fields of Application

Brickworks, Blockworks & Masonry	Curtain Walls
Expansion, Isolation & Control Joints	Pre-cast Panels
Highway & Pavements Joints	Window & Door Applications
Parking Decks	Repairs Work

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UNIFLEX® PE BACKER ROD

Technical Properties

Property	Unit	Result
Density	kg/m³	40
Longitudinal Elongation	%	15
Elasticity	%	10
Water Absorption	-	Nil
Resistance to Solvents	-	Good
Resistance to Deformation	-	Excellent
Dimensional Stability	-	Excellent
Service Temperature	°C	-40 to +80

Typical values, subject to 5-10% tolerance.

Physical Properties

Material	:	Closed Cell Polyethylene (PE)
Colour	:	Grey
Size	:	10mm - 400m / box 15mm - 150m / box 20mm - 100m / box 25mm - 100m / box 30mm - 50m / box 40mm - 2m / length (25 lengths, 50m / box) 50mm - 2m / length (25 lengths, 50m / box) *(other sizes available upon request)
Packaging	:	Boxed (quantity per box as listed above)
Weight	:	Dependent upon sizes

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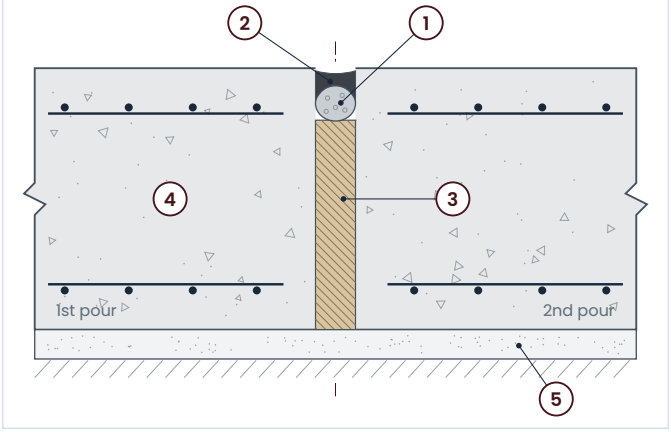
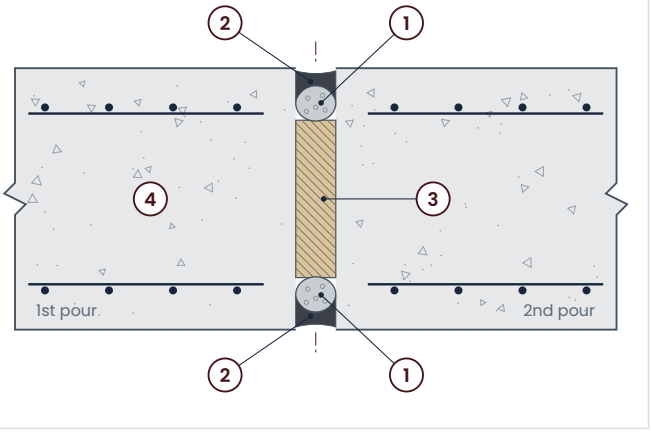
UNIFLEX® PE BACKER ROD

Typical Drawing & Profiles

1 SLAB ON GROUND — Not to scale



2 SUSPENDED SLAB & WALL — Not to scale



LEGEND

1. UNIFLEX® PE Backer Rod
2. UNISEAL® joint sealant
3. UNIFLEX® filler board
4. Reinforced concrete
5. Lean concrete

Illustrations only – not for construction.

Application Photos





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UNIFLEX® PE BACKER ROD

Installation Procedures

1 Preparation | 2 Application | 3 Joint Sealing

Installation Procedures

Step 1
PREPARATION

For expansion joints in new concrete, brickwork, blockwork and masonry, construct both sides of the joint prior to fixing **UNIFLEX® PE BACKER ROD.**

The joint surface must be **clean, dry and free from oil, loose particles, cement laitance and other contaminants** which may affect the adhesion.

Thorough wire brushing, grinding, sand blasting or solvent cleaning may be required to expose a clean and sound substrate. Remove sharp edges and corners that could puncture or damage the backer rod.

Step 2
APPLICATION

Select a **UNIFLEX® PE BACKER ROD** with a diameter about **25%** greater than the width of the joint. This keeps the rod in compression and in place while the sealant is applied.

Cut **UNIFLEX® PE BACKER ROD** to the length of the joint with a sharp knife. Press it into the joint with a blunt tool to the level that leaves a slot of the specified sealant depth. Do not puncture, stretch or twist the rod.

Step 3
JOINT SEALING

After the sealing slot has been created, seal the joint with an appropriate sealant from the **UNISEAL®** range.

Shelf Life & Storage

UNIFLEX® PE BACKER ROD has a shelf life of **12 months** when stored under cover in its original packaging, in a dry place away from direct sunlight, heat and sources of ignition.

Health & Safety

UNIFLEX® PE BACKER ROD presents no health hazard in normal handling and use. Wear gloves and goggles when cutting, and follow normal site safety practice.

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UNIFLEX® PE BOND BREAKER TAPE



Product Features

UNIFLEX® PE Bond Breaker Tape is a non-absorbent, bitumen-free, closed cell polyethylene tape with a self-adhesive backing. It is laid at the base of the sealant slot to stop cold-applied elastomeric joint sealants from bonding to concrete, metal or joint filler board.

The self-adhesive backing conforms easily to irregular surfaces. By keeping the sealant off the base of the slot, the tape prevents three-sided adhesion, which would limit the sealant's ability to accommodate joint movement.

SUITABLE FOR DRINKING WATER CONTACT
Tested to MS 1583 and cytotoxicity test · SPAN approved

Advantages

- Non-absorbent surface eliminates three-side adhesion of the elastomeric sealant
- Bitumen free and rot proof, ideal for water retaining structures
- Closed cell structure does not allow the absorption of moisture or air
- Fully compatible with a wide variety of sealants
- Efficient and cost effective

Fields of Application

Brickworks, Blockworks & Masonry	Curtain Walls
Expansion, Isolation & Control Joints	Pre-cast Panels
Highway & Pavements Joints	Window & Door Applications
Parking Decks	Repairs Work

Compatible Products

- UNISEAL® PU, PU PRO, PS and MS joint sealants
- UNIFLEX® PE, RBCF and FB joint filler boards

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UNIFLEX® PE BOND BREAKER TAPE

Technical Properties

Property	Unit	Test Method	Result
Density	kg/m³	ASTM D792	28 ± 10%
Tensile Strength	kgf/cm²	ASTM D412	5.1
Elongation at Break	%	ASTM D412	180
Hardness	Shore C	JIS K7312	16 ± 3
Compression Deflection	kgf	ASTM D1056	3.4

Typical values, given as a guide only.

Physical Properties

Material	:	Closed Cell Polyethylene (PE) with self-adhesive tape
Colour	:	Black
Size	:	20mm x 2m length 25mm x 2m length 50mm x 2m length 75mm x 2m length *(other sizes available upon request)
Thickness	:	3mm to 50mm
Weight	:	Dependent upon sizes

Shelf Life & Storage

UNIFLEX® PE Bond Breaker Tape has a shelf life of **12 months** when stored under cover in its original packaging, in a dry place away from direct sunlight, heat and sources of ignition.

Health & Safety

UNIFLEX® PE Bond Breaker Tape presents no health hazard in normal handling and use. Wear gloves when cutting, and follow normal site safety practice.

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UNIFLEX® PE BOND BREAKER TAPE

Installation Procedures

1 Preparation | 2 Application | 3 Joint Sealing

Step 1
PREPARATION

The joint surface must be **clean, dry and free from oil, loose particles, cement laitance and other contaminants**. Wire brushing, grinding, sand blasting or solvent cleaning may be required to expose a clean and sound substrate. Remove sharp edges and corners that could puncture or damage the tape.

Step 2
APPLICATION

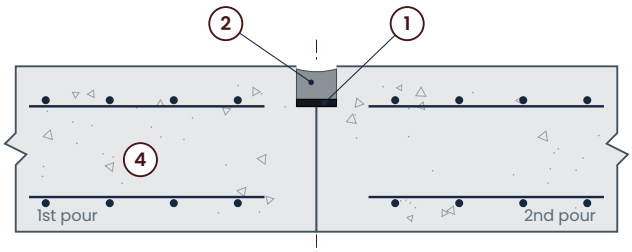
The sealant should bond to the two opposite sides of the sealant slot but not to its base: **two-sided adhesion**, not three-sided adhesion. To stop the sealant bonding to the base of the slot or to the filler board, peel off the backing and press **UNIFLEX® PE Bond Breaker Tape** along the full width and length of the base of the slot.

Step 3
JOINT SEALING

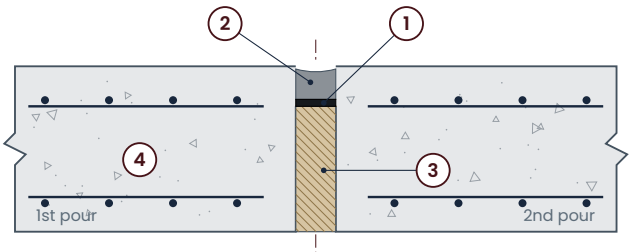
Seal the joint over the tape with an appropriate sealant from the **UNISEAL®** range.

Typical Drawing & Profiles

1 CONSTRUCTION JOINT — Not to scale



2 EXPANSION JOINT — Not to scale



LEGEND (1) UNIFLEX® PE Bond Breaker Tape (2) UNISEAL® joint sealant (3) UNIFLEX® filler board (4) Reinforced concrete

Illustrations only – not for construction.

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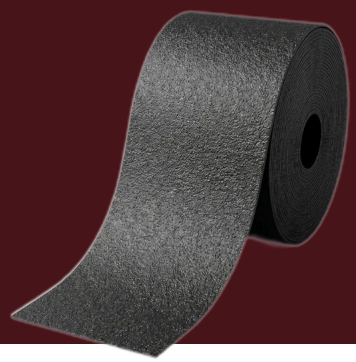
UNIFLEX® PE SLIP MEMBRANE



Product Features

UNIFLEX® PE SLIP MEMBRANE is a pre-formed polyethylene strip designed for use in sliding joints in reinforced concrete structures where load bearing characteristics are present, and low friction resistance is required.

UNIFLEX® PE SLIP MEMBRANE can be used under in-situ or precast concrete slabs and beams, structural steelwork bearing plates and pipe supports to form a thin sliding joint. It is resistant to most chemicals, solvents and weathering.

Two layers of **UNIFLEX® PE SLIP MEMBRANE** can also be used for sliding wall joints, pre-stressed, post-tensioned circular concrete tanks or similar structures provided the safe load bearing capacity is not exceeded.

Advantages

Ideal, General Purpose Slip Membrane	High Bearing Capacity
Low Cost, Permanent Solution	Easy To Install
Low Coefficient Of Friction	Non-Toxic

Fields of Application

It can be shaped, cut, or laminated for use in a variety of applications including :

Roof Joints	Slabs & Beams On Bearings
Wall Joints	Pipe Supports
Steel Connections	Circular Tanks (Sliding Wall Joints)

Compatible Products

UNISTICK® CA contact adhesive, to bond the membrane layers
UNIFLEX® PE filler board and UNISEAL® joint sealant at the upstand

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UNIFLEX® PE SLIP MEMBRANE

Technical Properties

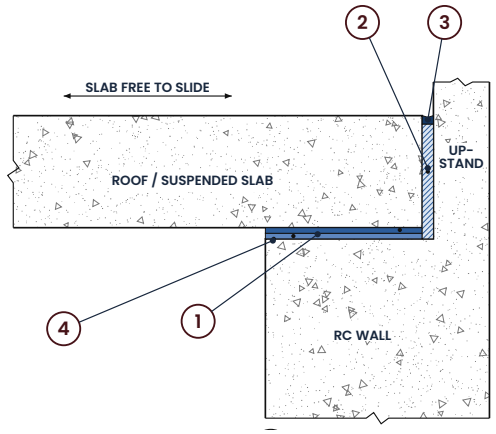
Property	Test Method	Unit Measurement	Result
Density	ISO 845	kg/m³	160 - 200
Tensile Strength	ISO 1798	kPa	837
Elongation at Break	ISO 1798	%	98
Tear Strength	ISO 8067	N/cm	9.2
Compression Set (23°C / 50% RH)	ISO 1856	%	17
Static Coefficient of Friction	BS EN ISO 8295	-	0.140
Dynamic Coefficient of Friction	BS EN ISO 8295	-	0.120

Physical Properties

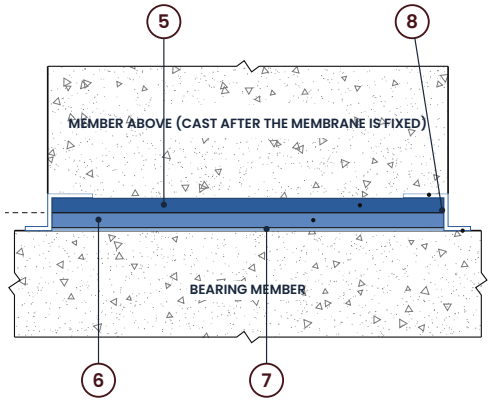
Material	:	High Density Closed Cell Polyethylene (PE)
Color	:	Black
Size	:	300mm (width) x 2m (length) strips
Thickness	:	2mm
Packing	:	25 strips / roll (50m per roll)

Typical Drawing

1 SLAB ON WALL LEDGE — Not to scale



2 SLIP MEMBRANE ENVELOPE (ENLARGED) — Not to scale



LEGEND

1. Slip membrane, 2 layers, taped
2. UNIFLEX® PE fillerboard
3. UNISEAL® joint sealant
4. Steel-float finished bearing
5. Slip membrane, layer 2
6. Slip membrane, layer 1
7. UNISTICK® CA adhesive
8. Adhesive tape on edges

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

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UNIFLEX® PE SLIP MEMBRANE

Installation Procedures

1 Surface Preparation | 2 Forming the Envelope | 3 Bonding & Concreting

Step 1
SURFACE PREPARATION

Concrete bearing surfaces for **UNIFLEX® PE SLIP MEMBRANE** must be clean, smooth, dry and free of contaminants, with a steel-float finish.

Step 2
FORMING THE ENVELOPE

UNIFLEX® PE SLIP MEMBRANE is normally laid in two layers to give a low-friction sliding interface. Before concreting, form the required width into a sealed envelope: seal all edges and joints with adhesive tape so that concrete grout and fines cannot get between the layers.

Stagger the joints between the two layers wherever possible. For circular structures, form the membrane in short chord lengths with staggered joints.

Step 3
BONDING & CONCRETING

To hold the membrane on the bearing surface before the concrete is placed, apply **UNISTICK® CA** to the bearing surface and to one side of the membrane. When the adhesive is touch-dry, position the membrane carefully and roll it thoroughly for full contact.

Cast the member above onto the membrane.

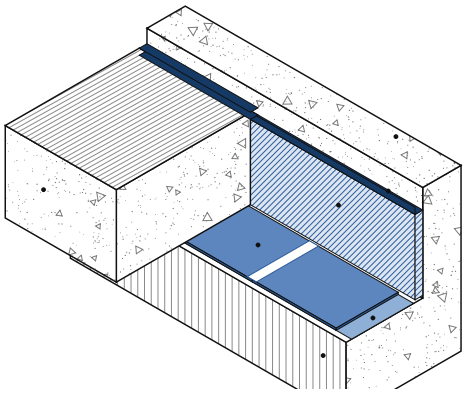
Storage

UNIFLEX® PE SLIP MEMBRANE is a plastic product and keeps for a long time. Store it under cover, in a dry place away from direct sunlight, heat and sources of ignition.

Health & Safety

UNIFLEX® PE SLIP MEMBRANE presents no health hazard in normal handling and use. Wear gloves when cutting, and follow normal site safety practice.

3D VIEW - SLAB ON WALL LEDGE NOT TO SCALE



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UNIFLEX® XPS

EXTRUDED POLYSTYRENE THERMAL INSULATION BOARD



Product Features

UNIFLEX® XPS is a rigid extruded polystyrene (XPS) thermal insulation board. The continuous extrusion process gives it a smooth, even skin and a **uniform closed-cell structure** with no gaps.

This structure makes **UNIFLEX® XPS** an excellent insulating material, with high compressive strength, low thermal conductivity, low water absorption, low vapour permeance and a long service life.

UNIFLEX® XPS is used in new buildings and retrofit works to insulate roofs, floor slabs, basement and foundation walls and precast panels, and to protect waterproofing.

It is supplied in two grades, **XPS 250** and **XPS 450**, in 25mm and 50mm thicknesses. XPS 450 is the grade for heavily loaded floor slabs.

Advantages

- Low coefficient of thermal conductivity
- Outstanding moisture resistance
- Strong yet lightweight
- High compressive strength
- Easy and safe to handle, cut and install
- Does not corrode, rot or support mould growth
- Reusable in many applications

Fields Of Application

Above foundations of exterior walls	Inverted (protected) roof decks
Exterior foundation walls	Precast sandwich panels
Basement walls	
Below concrete slab	
Cold storage facilities	

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Technical Properties

Property	Test Method	Unit	XPS 250	XPS 450
Density	ASTM D1622	kg/m³	32 - 36	40 - 45
Compressive Strength	ASTM D1621	kPa	≥ 250	≥ 450
Water Absorption	ASTM C272	% (v/v)	0.10 - 0.35	0.10 - 0.35
Thermal Conductivity	ASTM C518	W/m.K	≤ 0.028	≤ 0.028
Flammability	UL 94	Class	HB	HB
Dimensional Stability	-	%	≤ 2.0	≤ 2.0

All values are subject to 5-10% tolerance. Use XPS 450 under heavily loaded floor slabs.

Physical Properties

Material	:	Polystyrene with additives
Colour	:	Pink / Blue
Thickness	:	25mm / 50mm
Size	:	1200mm x 2400mm / 600mm x 1200mm
R-value	:	0.89 m²K/W (25mm) / 1.79 m²K/W (50mm)

Applications

Precast

UNIFLEX® XPS is cast into precast sandwich panels as the insulation core between the outer and inner concrete wythes. A higher R-value means better energy efficiency.

Rooftop

On inverted (protected membrane) roofs, **UNIFLEX® XPS** is loose-laid on top of the waterproofing membrane. It insulates the roof and protects the membrane from temperature swings and damage.

Floor Slab

UNIFLEX® XPS is laid under ground-bearing slabs. Its high compressive strength carries the slab load; use XPS 450 under heavily loaded slabs.

Wall

Fixed against the outside of basement and foundation walls, **UNIFLEX® XPS** insulates the wall and protects the waterproofing during backfilling. It resists moisture, so it keeps its thermal resistance over the years.

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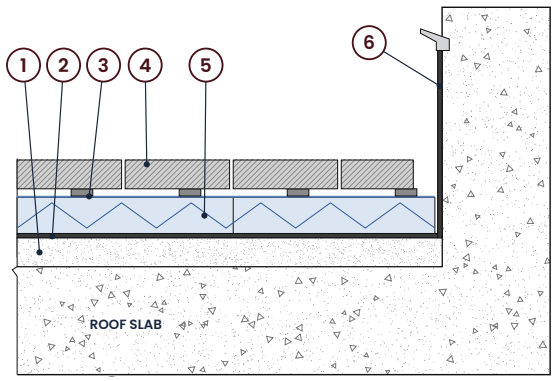
Typical Drawing

1 INVERTED (PROTECTED) ROOF

Not to scale

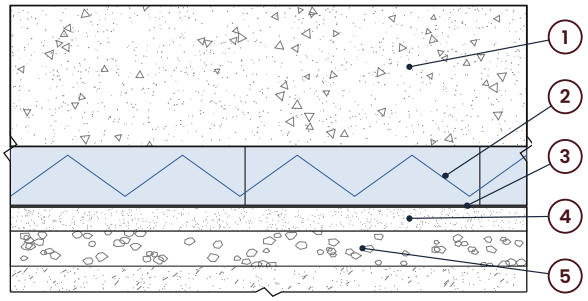


LEGEND

1. Screed to falls
2. Waterproofing membrane
3. Filter fabric (by others)
4. Paving slabs / gravel ballast
5. UNIFLEX® XPS, loose-laid
6. Membrane turned up, flashing

2 UNDER-SLAB INSULATION

Not to scale

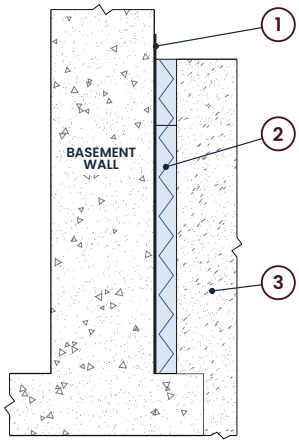


LEGEND

1. Ground slab
2. UNIFLEX® XPS, grade to suit load
3. UNIPROOF® DPM
4. Lean concrete / blinding
5. Compacted hardcore

3 BASEMENT WALL

Not to scale

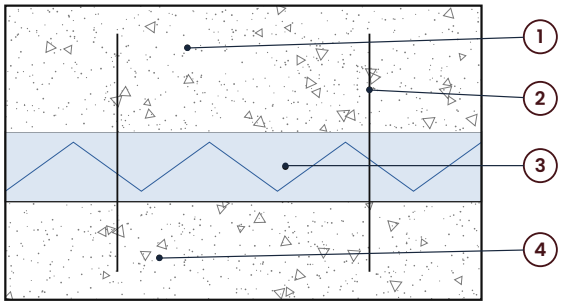


LEGEND

1. UNICOAT® BITUMEN 300 or membrane on wall
2. UNIFLEX® XPS insulation board
3. Backfill compacted in layers

4 PRECAST SANDWICH PANEL

Not to scale



LEGEND

1. Outer concrete wythe
2. Wythe ties (by precaster)
3. UNIFLEX® XPS core
4. Inner concrete wythe

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