



# TECHNONICOL



## MANUAL

### for cementitious waterproofing systems

Areas of application – sunken areas, toilets, bathrooms, kitchens, utility rooms, swimming pools, balcony, water tanks, etc.

KNOWLEDGE. EXPERIENCE. CRAFTSMANSHIP.



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**1.**

**Introduction**

# 1. Introduction

Cementitious waterproofing systems are essential for protecting concrete and masonry surfaces from water ingress in areas continuously or intermittently exposed to moisture.

TECHNONICOL offers a high-performance, acrylic-modified cementitious product range designed for durable protection in bathrooms, balconies, water tanks, swimming pools, terraces, and other wet areas.



# 2.

**Product portfolio**

## 2. Product portfolio: cementitious waterproofing solutions

### A. Cementitious waterproofing materials

#### 2.1. TECHNINICOL TECHNOCRETE

##### **A polymer additive for preparing flexible, cementitious waterproofing and repair systems**

TECHNONICOL TECHNOCRETE is a single-component acrylic polymer emulsion supplied as a liquid. It is not used alone; instead, it is mixed with ordinary portland cement (OPC), to form a two-component (2K) polymer-modified cementitious coating or mortar.

When blended with cement, TECHNINICOL TECHNOCRETE improves the properties of conventional cementitious mixes, providing:

- High adhesion to dense or smooth concrete and masonry.
- Increased flexural and tensile strength, enabling the coating to bridge hairline cracks.
- Superior impermeability, protecting concrete against moisture and chloride ingress.

Thus, TECHNINICOL TECHNOCRETE is the polymer material, and the system is prepared at site by mixing TECHNINICOL TECHNOCRETE liquid with cement in the ratio of 1:2 by weight.

##### **Area of application:**

- Waterproofing basements, wet areas, terraces, roofs, swimming pools, and water tanks.
- Repair of surface cracks, spalled or damaged concrete.

##### **Consumption:**

1 kg of TECHNINICOL TECHNOCRETE polymer (mixed with neat fresh cement in a 1:2 ratio by weight) covers approximately 2–2.5 m<sup>2</sup>, depending on surface porosity and roughness, to achieve a coating thickness of about 1 mm.

##### **Packaging:**

Available in HDPE containers of 0.5 kg, 1 kg, 5 kg, 10 kg, 20 kg, 50 kg, 100 kg, and 200 kg.

## Technical characteristics:

Properties	Performance	Test method
Appearance	milky white coloured free flowing liquid	1.10±0.02
Solid content, (w/w)	30±3	100
Parameter of pH, value	>7	50±10
14 days bond strength, N/mm <sup>2</sup> (min or concrete failure)	2.0	15±2
28 days compressive strength, N/mm <sup>2</sup> (min)	30	>1000
Application of second layer after, h	6-8	450±100



## 2.2. TECHNICAL ULTRACEM 2C

### Two-component elastic cement waterproofing membrane

TECHNONICOL ULTRACEM 2C is a two-component waterproofing system consisting of a liquid acrylic polymer and a cement-based powder. The liquid part provides flexibility and strong bonding, while the powder gives strength and durability. When mixed together, they form a smooth paste that can be applied by brush, roller, or trowel. After curing, it creates a seamless, flexible membrane that is highly resistant to water. It adheres well to concrete, plaster, and masonry.

- Component A: specially formulated acrylic polymer emulsion (liquid)
- Component B: cement-based powder blend (cement, selected fillers and additives)

#### Area of application:

Wet areas, basements, water tanks, swimming pools, balconies before surface before tiles fixing.

#### Consumption:

To achieve a 1.0 mm dry film thickness, TECHNICAL ULTRACEM 2C consumption is approximately 1.8–2.0 kg/m<sup>2</sup>. Actual usage may vary depending on surface condition (porosity, texture, unevenness) and will be higher when applied with fiberglass mesh reinforcement..

#### Packaging:

Single box containing Components A & B (total net weight 15 kg - pack contains both components).

#### Technical characteristics:

Properties	Performance	Test method
Appearance	Grey/off white	Visual
Mixed density, kg/l	1.8±0.02	ASTM D1475
Pot life, minutes	45	-
Tensile strength, MPa	> 2	ASTM D412
Elongation, %	> 50	ASTM D412
Adhesion strength to concrete, MPa	> 1.5	ASTM D4541
Crack bridging, mm	> 1.5	ASTM D836
Application of second layer after, h	6-8	-
Full cure, days	7	-

## 2.3. TECHNONICOL ULTRACEM 2C Flex

### Two-component elastomeric cementitious waterproofing membrane

TECHNONICOL ULTRACEM 2C Flex is a two-component acrylic polymer modified elastomeric cementitious liquid-applied waterproofing coating system. It is applied to concrete and mortar to prevent water infiltration and is easy to apply with a stiff brush, roller, or trowel. The coating cures to form a tough, flexible, and durable waterproof barrier.

- Component A: liquid acrylic polymer emulsion
- Component B: cement-based powder blend

Compared to standard TECHNONICOL ULTRACEM 2C, the Flex version offers more than twice the elongation, making it suitable for applications where higher flexibility and crack-bridging capacity are required.

#### Area of application:

Wet areas, basements, water tanks, swimming pools, balconies before surface before tiles fixing.

#### Consumption:

To achieve a 1.0 mm dry film thickness, TECHNONICOL ULTRACEM 2C Flex consumption is approximately 1.5 – 1.7 kg/m<sup>2</sup>.

Actual material consumption will depend on the surface condition, including porosity, texture, and undulation, as well as when used in combination with fiberglass mesh reinforcement, the consumption rate will be higher.

#### Packaging:

Single box containing components A & B (total net weight 12 kg — pack contains both components).

#### Technical characteristics:

Properties	Performance	Test method
Appearance	Grey/off white	Visual
Mixed density, kg/l	1.65±0.02	ASTM D1475
Pot life, minutes	40	-
Tensile strength, MPa	>2	ASTM D412
Elongation, %	>120	ASTM D412
Adhesion strength to concrete, MPa	>1.5	ASTM D4541
Crack bridging, mm	Up to 2mm	ASTM D836
Application of second layer after, h	6-8	-
Full cure, days	7	-

## B. Surface repairing materials

### 2.4. TECHNINICOL EPOXY PRIMER 021

#### Two component epoxy primer (base + hardener)

TECHNONICOL EPOXY PRIMER 021 is a two-component (base + hardener) surface preparation primer that improves bonding, waterproofing, and durability before coating.

It is transparent, solvent-free, and rigid after curing.

When the two parts are mixed, they react and form a strong, waterproof layer that sticks firmly to the surface and also provides excellent resistance to chemicals. It can be applied by brush, roller or spatula.

#### Area of application:

- It can be used on moist concrete (up to 5% moisture)
- It can be used as an inter-coat adhesion between topcoat and intermediate coat
- Exterior RCC surfaces include sloping roofs, masonry walls or facades.
- It is also utilized for waterproofing treatment at pipe penetration areas.

#### Consumption:

- 200–250 g/m<sup>2</sup> for standard applications
- Allow 6–8 hours drying time.
- The next layer must be applied within 24 hours after the primer is used.

#### Technical characteristics:

Properties	Performance
Application Method:	Brush or roller
Pot Life (100 g mix)	25–30 min at 25°C, 15–20 min at 35°C
Overlay Time (Max)	24 hours
Curing Time:	6-8 hours
Application Temperature	5°C to 35°C
Colour	Transparent finish

## 2.5. TECHNONICOL SBR Latex

### Latex based polymer for waterproofing, repair & rendering

TECHNONICOL SBR Latex a single-component liquid chemical (polymer) is a cement additive that improves bonding, waterproofing, and durability. When added in cement, it makes the cement stronger, flexible, waterproof, and long-lasting. It also helps the cement stick better to surfaces and prevents water from passing through. For making high performance polymer-modified mortar, it is usually added in the ratio of 10% of the cement weight.

#### Key properties:

- Bond coats as a primer for concrete repair
- Mortar modification for repair renders
- Improves adhesion to concrete, masonry, and steel reinforcement
- Enhances flexural and tensile strength, reducing cracking

#### Area of application:

Waterproofing of terraces, sunken slabs, basements, retaining walls, water tanks, balconies, lift pits, and RCC roofs, etc.

#### Mixing:

- For bond coat, mix 1:1 TECHNONICOL SBR Latex and cement and apply on a clean surface.
- For polymer-modified mortar, add 10% TECHNONICOL SBR Latex of cement weight.

#### Technical characteristics:

Properties	Performance
Specific Gravity	1.01 ± 0.02
Chemical Resistance	Resistance to mild, acids, sulphates, alkalis
Bond Strength, N/mm <sup>2</sup>	> 3
Flexural strength at 28 days, N/mm <sup>2</sup>	> 7

#### Packaging:

20 Kg, 50 Kg

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(SBR) Styrene–Butadiene Rubber

## 2.6. TECHNICAL ULTRACEM REPAIR MC

### Polymer modified high strength micro concrete

TECHNONICOL ULTRACEM REPAIR MC is a single-component, cement-based, high-strength, polymer-modified mortar used for repairing broken or damaged concrete. It is a ready-to-use material made of cement, fine sand, and special additives. After mixing with water, it becomes a strong, durable, and easy-to-apply mortar.

The material can be applied in thicknesses of up to 100 mm in one layer using a trowel, by hand, or with a pump. For deeper repairs, additional thickness can be achieved by applying it in multiple layers.

#### Area of application:

- Jacketing of beams/columns
- Filling core pipe penetrations, tie-rod holes, honeycombed concrete
- Structural repair and strengthening of damaged concrete elements
- Suitable for vertical, horizontal, and overhead applications

#### Mixing:

- Flowable mix: 3.50–4.50 L water per 25 kg
- Plastic mix: 3.00–3.75 L water per 25 kg
- Adjust water as needed for temperature and site conditions; trial batches recommended

#### Technical characteristics:

Properties	Performance
Compressive Strength, N/mm <sup>2</sup> (Typical) at 27 °C, as per IS 4031	Free flowing Mix (W/P= 0.16),
1 day, N/mm <sup>2</sup>	> 15
7 days, N/mm <sup>2</sup>	> 45
28 days, N/mm <sup>2</sup>	> 60
28 days Comp. Strength, Blended with 50% of 10 mm aggregate, N/mm <sup>2</sup> (Typical)at 27 °C	> 63

#### Packaging:

Supplied in 25 kg HDPE bags

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(MC) Micro-Concrete

## 2.7. TECHNICAL ULTRACEM REPAIR PMC

### Polymer modified cementitious fibre reinforced repair mortar

TECHNONICOL ULTRACEM REPAIR PMC is a ready-to-use repair mortar made with cement, polymers, and special fibres. These materials make it strong, durable, and resistant to corrosion, shrinkage cracks, and damage from carbonation. It is used for both structural and surface (cosmetic) repairs of concrete.

The mortar can be applied in 10–50 mm thickness on vertical surfaces and 25–30 mm thickness on overhead surfaces, using a trowel by hand or a mortar spray machine.

#### Area of application:

- Making corner fillets, repair of honeycombed concrete areas.
- Restoration of damaged or deteriorated concrete

#### Mixing:

For 25 kg powder pack, place about 3.5-4 liters fresh water in the mixer and add the total quantity of powder and mix with mechanical mixer in operation for 1-2 minutes.

#### Technical characteristics:

Properties	Performance
Appearance	Free-flowing grey powder
Compressive Strength (N/mm <sup>2</sup> @ 27°C, W/P = 0.15)	1 day: > 18 3 days: > 35 7 days: > 50 28 days: > 60
Flexural Strength (28 days), N/mm <sup>2</sup>	> 10
Tensile Strength (28 days), N/mm <sup>2</sup>	> 5
Bond Strength (28 days), N/mm <sup>2</sup>	> 15
Pot Life (27°C), minutes	> 30

#### Packaging:

Supplied in 25 kg HDPE bags

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(PMC) Polymer Modified Mortar

## 2.8. Summary comparison table

### ULTRACEM Repair MC / ULTRACEM Repair PMC

Feature	ULTRACEM Repair MC (Microconcrete)	ULTRACEM Repair PMC (Polymer Modified Mortar)
Form	Flowable, pourable micro-concrete	Thixotropic, trowel-applied mortar
Placement	Poured/pumped into formwork, voids	Applied directly on surface (no formwork needed)
Application thickness	20–100 mm per pour (extendable with aggregate)	10–50 mm vertical, 25–30 mm overhead per layer
Best for	Structural jacketing, void filling, honeycombs	Surface patch repairs, spalled concrete
Consistency	Free flowing/self-levelling	Non-sagging, workable mortar
Key advantage	Excellent for large, inaccessible areas	Excellent adhesion, crack resistance, durability



## 2.9. TECHNICAL TECHNO-MIX WL

### Integral waterproofing compound for concrete and plaster

TECHNONICOL TECHNO-MIX WL is a special liquid integral compound added to concrete or plaster to make them waterproof. It is chloride-free and comes as a brown liquid.

When mixed with cement, it reacts inside the concrete to form a water-repelling layer. This layer blocks water from entering through small pores and capillaries, reducing water absorption and leakage.

#### Area of application:

- Basements, roofs, water tanks, and other structure where protection from water is important.
- Excellent for internal and external plaster of buildings etc.

#### Mixing:

100 g per 50 kg of cement (max. 0.2% by weight of cement).

#### Technical characteristics:

Properties	Performance
Appearance:	Brown liquid
Specific Gravity (25°C)	1.06 ± 0.02 g/ml
pH Value	≥ 7
Chloride Content (BS 5075 Part 1)	Nil
Recommended Dosage	100 g per 50 kg of cement (max. 0.2% by weight of cement)

#### Packaging:

Available in 200 ml, 1 L, 5 L, 10 L, 20 L, and 100 L containers.



**Bengaluru International Airport Limited - BIAL**  
Bangaluru, India



**Navi Mumbai International LTD**  
Mumbai, India



**Adler Railway Station**  
Adler, Russia

# 3.

**Storage conditions**

## 3. Material storage conditions

(For cementitious waterproofing system)

### ■ Storage temperature:

Store between +5°C and +35°C. Protect from frost, excessive humidity, and direct heat sources, as these can impair product performance.

### ■ Storage area:

Keep bags and containers in a cool, dry, and well-ventilated area. Protect from rain, ground moisture, and prolonged exposure to sunlight.

### ■ Stacking limit:

Do not stack more than 10 bags high (or as recommended by manufacturer) to prevent tearing, caking, or compaction of the powder. Always stack on pallets with a protective cover.

### ■ Bag/Container positioning:

Store bags/containers upright and off the ground on pallets. Ensure packaging remains intact and tightly sealed until use.

### ■ Shelf life:

Typical shelf life is 6 to 12 months from the date of manufacture when stored in original, unopened packaging under recommended conditions.

### ■ Handling precaution:

Handle bags carefully to prevent damage or spillage. Use opened bags immediately; resealing is not effective against moisture ingress. Avoid inhalation of dust during handling—use proper PPE.

### ■ Do not store near:

- Water or damp surfaces
- Open flames or heat sources
- Food or drinking water supplies
- Strong acids or chemicals that may damage packaging

# 4.

Surface  
preparations

## 4. Surface preparation guidelines

Proper substrate preparation is critical to the success of any waterproofing system.

### 4.1. Grinding and chipping

**Remove laitance and loose particles.**

#### ■ Grinding:

A mechanical surface preparation method using rotary grinders to remove laitance, smooth surface irregularities, and expose sound concrete.

#### ■ Chipping:

A manual or mechanical process using chisels or chipping hammers to break and remove loose, damaged, or weak concrete.



Both processes are essential for achieving a clean and profiled substrate before waterproofing.

Ensures the surface is free from oils, grease, curing compounds, and any flaky concrete.

Enhances surface roughness for better adhesion of waterproofing systems.

Provides a mechanical key for bonding between substrate and waterproofing layer.



Proper surface preparation increases durability and service life of the waterproofing system.

The final prepared surface must be structurally sound, completely dry, and free from any loosely adhered particles or contaminants.

## 4.2. Groove cutting

### Crack treatment using polymer modified mortar

- Groove cutting is the process of creating a controlled cut (usually 10 mm wide × 10 mm deep) along visible cracks in concrete or plastered surfaces. Typically done using a mechanical cutter or angle grinder with a diamond blade. Purpose is to expose the full depth of the crack and provide space for proper filling with repair material.
- Grooves are cut in 'V' or 'U' shape depending on the repair requirements.
- Helps in achieving better mechanical anchorage and bonding for the crack filler.
- Surface inside the groove must be cleaned thoroughly using air or brush to remove dust, laitance, and debris.
- The cleaned groove is filled with PMM, which offers enhanced flexibility, adhesion, and waterproofing properties.
- PMM helps accommodate minor future movements and prevents water ingress through treated cracks.
- Proper curing of the filled groove is essential before applying the final waterproofing layer.
- Groove cutting is a standard practice in surface preparation to ensure long-term waterproofing performance over cracked areas.



- Open all visible cracks by cutting a groove 10 mm wide and 10 mm deep using a hand-held angle grinder equipped with a diamond blade.



- Apply TECHNONICOL SBR Latex bond coat prepared by mixing 1-part TECHNONICOL SBR Latex and 1 part cement (by weight) inside the cleaned grooves using a brush to ensure proper adhesion of the subsequent PMM.



- Fill the grooves completely with PMM prepared by mixing 1-part cement, 3 parts sand, and 10% TECHNINICOL SBR Latex bonding agent (by weight of cement). Finish the surface smoothly, ensuring proper compaction and strong bonding with the substrate.

- After 15-20 minutes of repair, apply one coat of TECHNINICOL SBR Latex over the patched area to enhance bonding with the upcoming waterproofing layer.

### 4.3. Angle fillet

#### (50 × 50 mm) at floor-wall junction with PPM

##### What is an angle fillet?

- An angle fillet is a triangular or curved coving made at the junction between horizontal (floor) and vertical (wall) surfaces.
- It eliminates the sharp 90° angle at the junction, allowing seamless transition for waterproofing membranes or coatings.
- Usually constructed using a mortar mix or PMM.

##### Why is angle fillet important in waterproofing?

- Removes sharp internal corners where waterproofing membranes often fail due to stress concentration.
- Improves membrane adhesion by allowing smooth turns without wrinkling or bridging.
- Reduces risk of leakage at vulnerable floor-wall junctions.
- Provides structural support to waterproofing materials, preventing cracks and edge lifting.
- Ensures continuity and uniform thickness of waterproofing layers.



- Apply a bond coat made of 1-part TECHNINICOL SBR Latex and 1 part cement (by weight) at the floor-wall junction before placing the PPM for angle fillet formation. This ensures enhanced adhesion between the substrate and the fillet mortar.



- Form a 50 mm × 50 mm angle fillet at the floor-wall junction using PMM prepared with 1 part cement, 3 parts sand, and 10% TECHNONICOL SBR Latex (by weight of cement). Shape the fillet with a trowel and ensure smooth finishing, proper compaction, and full contact with the bond coat.



- Apply a bond coat consisting of 1-part TECHNONICOL SBR Latex and 1 part cement (by weight) above the cured angle fillet using a brush. This enhances adhesion between the fillet and the subsequent waterproofing layer.

#### 4.4. Metal protrusions

##### Sealing around embedded items

Metal protrusions include embedded elements like pipes, anchors, rods, bolts, conduits, sleeves, etc., that pass through or emerge from concrete surfaces. These are critical penetration points that are highly prone to leakage and must be treated carefully during waterproofing.

##### Purpose and benefits

- Provides watertight sealing around high-risk penetration points.
- Prevents water ingress through shrinkage cracks, gaps, or poor bonding at metal-concrete interfaces.
- Enhances durability and bond strength using TECHNONICOL SBR Latex-modified mortar.
- Ensures compatibility and continuity with the waterproofing system applied over it.



##### Treatment method

- Clean the surface around the embedded metal item thoroughly to remove dust, rust, oil, or laitance.
- Apply a bond coat of 1 part TECHNONICOL SBR Latex + 1 part cement (by weight) around the base of the protrusion.



- Prepare PMM using: 1 part cement, 3 parts well-graded sand and 10% TECHNINICOL SBR Latex (by weight of cement).
- Pack and seal the area around the metal item with the PMM, ensuring full coverage and tight compaction.

- Finish the surface smoothly with a trowel and ensure no voids or gaps remain.
- Allow curing as per site conditions before proceeding with the final waterproofing layer.

#### 4.5. Repair of pinholes and potholes

##### Using polymer modified mortar

During surface preparation, if pinholes, honeycombs, or potholes are observed in concrete substrates, they must be repaired before waterproofing application.

##### Pinholes

- Tiny, shallow surface voids usually caused by trapped air during concrete placement or poor surface finishing.
- Typically, less than 5 mm in diameter.
- Often found in polyurethane coatings, screeds, or surface mortars.

##### Potholes

- Larger, deeper surface voids or cavities resulting from poor compaction, honeycombing, or degradation.
- Can range from 10 mm to several centimetres in diameter and depth.
- Often occur due to improper concrete placement, segregation, or rebar corrosion.

##### Importance of repair

- Ensures a uniform and sound substrate for waterproofing.
- Eliminates potential leakage points.
- Enhances adhesion and performance of waterproofing membranes.
- Prevents long-term deterioration due to moisture ingress.

##### Repair procedure

- Inspect and identify all pinholes and potholes on the concrete surface before waterproofing.
- Clean the defective area thoroughly to remove dust, laitance, loose material, and contaminants.

- Pre-wet the area with clean water to reach saturated surface dry (SSD) condition.
- Apply a bond coat using a mix of 1 part TECHNOMICOL SBR Latex and 1 part cement (by weight).
- Prepare PMM using: 1 part cement, 3 parts well-graded sand and 10% TECHNOMICOL SBR Latex (by weight of cement). Fill the defects completely using PMM
- For pinholes: use a putty knife or brush.
- For potholes: use a trowel and ensure proper compaction to avoid air entrapment.
- Finish the surface smoothly, flush with the surrounding area.
- Allow to cure adequately before applying any waterproofing membrane or coating.





# 5.

## Construction joint treatment

## 5. Construction joint treatment

Construction joint is a planned discontinuity or break in a concrete structure that occurs when a portion of the concrete is poured at one time, and the remaining portion is poured later. It is intentionally created to allow for the continuation of work without compromising the structural integrity of the element.

### Where construction joints are found:

- Slab-to-slab joints (horizontal)
- Wall-to-wall or wall-to-slab interfaces (vertical/horizontal)
- Lift pits, water tanks, basements, podiums, and retaining walls

### 1. Chasing of joints

Chase and open all construction joints in a "V"-shaped groove with dimensions 25 mm (width) x 25 mm (depth) using appropriate mechanical tools.

### 2. Surface cleaning

Thoroughly clean the grooves to remove all dust, loose particles, and laitance using a wire brush and compressed air or vacuum.

### 3. Filling of grooves

Fill the prepared grooves with a polymer-modified mortar consisting of:

- 1 part cement
- 3 parts clean, well-graded sand
- 10% TECHNONICOL SBR Latex (by weight of cement) as a bonding agent.

Chase and open all Construction joints in a "V"- Shaped groove with dimensions of 25mm (width) x 25mm (depth) using mechanical tools and same shall be filled with Polymer Modified mortar



Typical section - construction joint groove opening

# 6.

## Pipe penetration treatment

## 6. Pipe penetration treatment

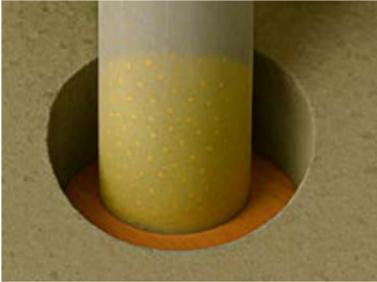
Special attention is given to pipe entries, a common leakage point.

### Step-by-step treatment



#### ■ STEP 1

**Pre-concreting:** Plywood shuttering is typically installed from the underside before concrete filling to provide support and shape to the concrete structure, ensuring a smooth finish and accurate dimensions.



#### ■ STEP 2

**Pre-concreting:** Apply TECHNOMICOL Epoxy Primer 021 on the PVC pipe, immediately sprinkle coarse sand, and cure for 24 hours.



#### ■ STEP 3

**TECHNOMICOL Ultracem Repair MC Filling:** After the TECHNOMICOL Epoxy Primer 021 has fully cured, fill the core area with TECHNOMICOL Ultracem Repair MC around the annular space of pipes.



#### ■ STEP 4

During final finishing of micro-concrete, leave a 10 mm deep groove along the repair edge.



#### ■ STEP 5

**Groove Sealing:** After 24 hours of air curing, fill the groove with TECHNONICOL PU sealant or Epoxy mortar for sealing to ensure long-term watertightness and durability.



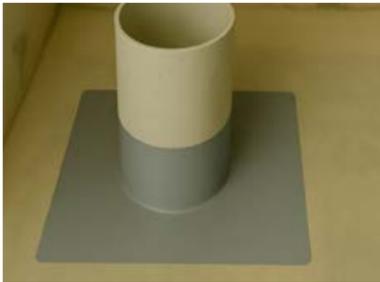
#### ■ STEP 6

After 24 hours of TECHNONICOL micro-concrete filling, de-shutter the cores from the underside and repair the annular spaces around pipes with micro-concrete or TECHNONICOL SBR Latex polymer modified mortar.



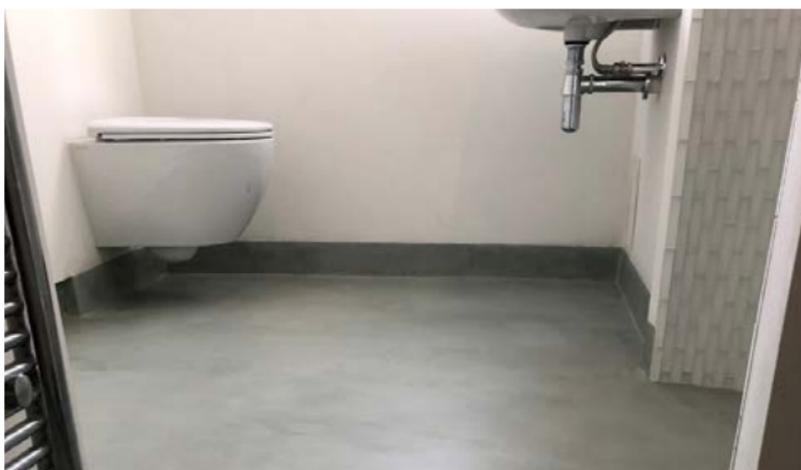
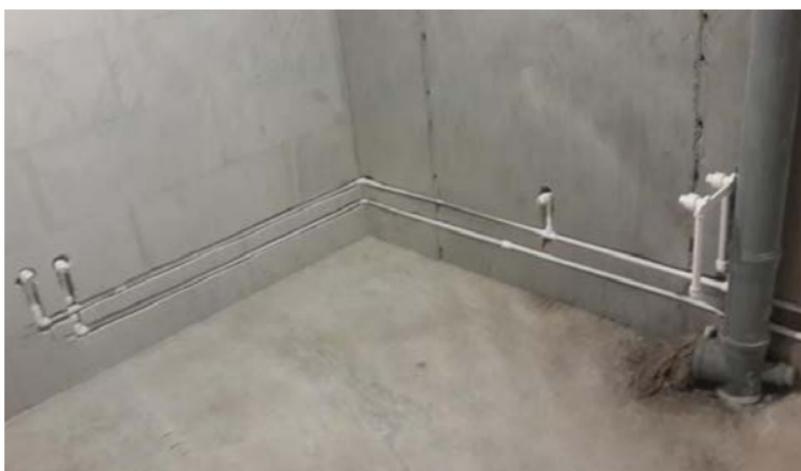
#### ■ STEP 7

**Fabric Fixation:** Clean the surface around pipe penetrations and fix 45 GSM Fabric with a 50-100mm width extension around the pipes, as per the reference picture.



#### ■ STEP 8

**Coating & Flashing:** Apply TECHNONICOL TECHNOCRETE / ULTRACEM 2C / ULTRACEM 2C Flex coating in minimum 2 layers around the pipes, ensuring the fabric is properly embedded, at the required consumption rate.



# 7.

## Pre-application testing

## 7. Pre-application testing

Conduct pre-pond test to identify cracks & leakages in the slab / around pipe penetrations.

It is always preferable to conduct pre-pond test for cementitious application to identify the cracks in the slab, at floor-wall junctions and from around the pipe penetrations.

It will also bring the substrate in SSD condition which is a pre-requisite of cementitious application.



# 8.

## Material mixing procedure

## 8. Material mixing procedure

### 8.1. TECHNINICOL TECHNOCRETE

#### Step-by-Step mixing instructions



- Combine TECHNINICOL TECHNOCRETE polymer with fresh neat cement in a 1:2 weight ratio (polymer to cement).
- Mix thoroughly using a slow-speed mixer until a smooth, uniform slurry is achieved, free from lumps.
- Allow the mixture to stand for 5–10 minutes to let any trapped air bubbles escape.

- If any lumps remain, remove them or continue mixing until fully dispersed.
- Do not use the polymer without adding cement.

### 8.2. TECHNINICOL ULTRACEM 2C

#### Step-by-Step mixing instructions



- Pour the latex (component B) into a clean mixing container of adequate size and shake well.
- Gradually add the powder (component A) in a 1:2 weight ratio (latex to powder).
- Using a low-speed mixer, blend until the mixture is smooth, uniform, and free of lumps. Avoid whipping air into the mix.
- Do not dilute with water and avoid preparing partial batches of the two components.

- In hot weather, store product containers in the shade prior to use to maintain workability.

### 8.3. TECHNONICOL ULTRACEM 2C Flex

#### Step-by-Step mixing instructions



- Pour the latex (component B) into a clean mixing container of suitable size and shake well.
- Gradually add the powder (component A) in a 1:1.4 weight ratio (latex to powder).
- Blend with a low-speed mixer until a uniform, lump-free, and smooth consistency is achieved, ensuring no air is entrapped.

- Do not add water at any stage. Avoid mixing partial quantities of the components.
- In hot weather, keep product containers shaded before use to maintain optimal performance.

### 8.4. TECHNONICOL SBR Latex

#### Recommended uses & mixing guidelines

#### 1. Bond Coat:

- Take 1-part TECHNONICOL SBR Latex and 1 part cement in (1:1 ratio).
- Manually mix with a trowel or use a mechanical stirrer until smooth and lump-free.
- Apply immediately on a clean, roughened surface.
- Apply the next layer while the coat is still tacky.

#### 2. Polymer-Modified Mortar:

- Take cement and sand in (1:3 ratio) 1 part cement, 3 part sand.
- Add TECHNONICOL SBR Latex equal to 10% of cement weight.
- Mix manually until a creamy, workable mortar is formed.
- Use immediately for plastering or repairs.

### 8.5. TECHNONICOL ULTRACEM REPAIR MC

#### Recommended uses & mixing guidelines

- Flowable mix: 3.50-4.50 L water per 25 kg
- Plastic mix: 3.00-3.75 L water per 25 kg
- Use a slow-speed (250 - 350 rpm) mechanical stirrer for best results.
- Add the TECHNONICOL ULTRACEM MC slowly into the recommended volume of clean water while mixing.
- Mix for about 5 minutes until homogeneous; hand mixing is not recommended.

## 8.6. TECHNICAL ULTRACEM REPAIR PMC

### Recommended uses & mixing guidelines

- For a 25 kg bag, add 3.5 - 4 litres of fresh water to a mixing vessel
- Slowly add the powder while mixing mechanical stirrer for 1–2 minutes until uniform
- Slight water adjustments may be made based on ambient temperature and desired consistency

## 8.7. TECHNICAL TECHNO-MIX WL

### Recommended uses & mixing guidelines

#### Dosage:

- 100 g of additive per 50 kg of cement  
(max. 0.2% by weight of cement).

#### Method:

- Take the required amount of cement.
- Add the Techno-Mix WL integral compound (100 g per 50 kg cement).
- Mix thoroughly with water and aggregates as per the mix design until a uniform, lump-free mixture is achieved.
- Use the mix immediately for casting or plastering.

## 8.8. TECHNICAL EPOXY PRIMER 021

### Step-by-Step mixing instructions



- Measure the components accurately in the ratio of 3 parts Base : 2 parts Hardener by weight.
  - Pour both components into a clean mixing container.
  - Mix thoroughly using a slow-speed mechanical stirrer (avoid high-speed mixing to prevent air entrainment) until the blend is completely uniform in colour and consistency.
- 
- Prepare only the quantity of material that can be applied within the specified pot life:
    - 25-30 minutes at 25°C
    - 15-20 minutes at 35°C

**9.**

**Application process**

# 11. Application process of cementitious waterproofing

## 9.1. Achieving SSD (Saturated Surface Dry) condition



- Before cementitious waterproofing, pre-wet the surface with clean water. Allow water to soak in until the concrete is fully saturated.
- Then, remove any surface water using clean cloths, sponges, air blowers, or vacuum. The surface must appear damp but without any visible water film or puddles.

- Achieving SSD condition helps ensure proper bonding by preventing the rapid absorption of mix water into dry concrete.

## 9.2. Application procedure: TECHNOCRETE TECHNOCRETE



- Ensure the surface is clean, sound, and in SSD condition (damp but without standing water).
- 1 kg of TECHNOCRETE polymer (mixed with neat fresh cement in a 1:2 ratio by weight) (1 part TECHNOCRETE: 2 parts cement) covers approximately 2–2.5 m<sup>2</sup>, depending on surface porosity and roughness, to achieve a coating thickness of about 1 mm.

- Stir thoroughly to achieve a smooth, homogeneous slurry.
- Allow the mix to stand for 5–10 minutes to release entrapped air, then re-mix gently.
- Ensure the mix is lump-free; TECHNOCRETE polymer must not be used without cement
- Apply the slurry by brush on the prepared surface (horizontal, vertical, or inclined).
- Apply a minimum of two coats, allowing 5–6 hours of air drying between each coat.

- After the final coat, allow 2–6 hours of initial air drying, then start moist curing for the next 24 hours by gentle sprinkling/spraying of potable water
- Do not allow the coating to become completely dry or fully submerged during this 24-hour curing stage.
- After moist curing, allow minimum 2 days of air drying before exposing the coating to continuous water contact.
- Extend the coating on vertical walls as follows:
  - 300 mm above floor level in general wet areas.
  - 1.8–2.1 m height in shower or splash zones.

### 9.3. Application procedure: TECHNINICOL ULTRACEM 2C / ULTRACEM 2C Flex



- Surface should be clean, sound, and pre-wetted to achieve SSD condition.
- Apply TECHNINICOL ULTRACEM 2C / ULTRACEM 2C Flex polymer-modified cementitious waterproofing coating by brush or roller in two alternative coats.

- The consumption shall be 1.8–2.0 kg/m<sup>2</sup> for TECHNINICOL ULTRACEM 2C and 1.5–1.7 kg/m<sup>2</sup> for TECHNINICOL ULTRACEM 2C Flex to achieve an overall dry film thickness of approx. 1.0–1.2 mm.
- Allow the first coat to dry for 6–8 hours.
- Apply the second coat in cross direction at the same coverage.
- Leave the coating for 48 hours air curing before conducting ponding test.
- At the floor–wall junction, place minimum 100-150 mm wide strip of glass fiber mesh (40–60 gsm) over the angle fillet and press it into the first coat while it is still wet.
- After the first coat has dried, apply the second coat to fully cover the glass fiber mesh reinforcement.
- For water tanks or high-movement areas, embed fiberglass mesh over the entire height of internal vertical walls between the two coats.
- Sprinkle coarse sand on the second coat while wet to provide a mechanical key for tile adhesive.
- Extend waterproofing on vertical walls:
  - 300 mm above floor level in general areas.
  - 1.8–2.1 m height in shower/splash zones.

## 9.4. Fiberglass mesh embedding

### Purpose of fiberglass mesh embedding



- Reinforces critical junctions and movement-prone areas.
- Prevents crack propagation and enhances flexibility of the waterproofing system.
- Improves tensile strength and overall durability of the waterproof coating.
- Assists in bridging hairline cracks and substrate irregularities.

### Application Procedure



- Apply the first coat of TECHNOCOL ULTRACEM 2C / ULTRACEM 2C Flex cementitious waterproofing material.
- While the first coat is still wet, embed fiberglass mesh of 40–60 GSM into the surface.

- Use mesh of 100–150 mm width at the following critical areas:
  - Floor-wall junctions
  - Inside corners and edges of vertical walls
  - Around pipe penetrations and embedded items (if applicable)
- Gently press the mesh using a brush or trowel to ensure full contact without wrinkles or air pockets.
- Allow the first coat to set, then apply the second coat over the embedded mesh, fully covering it.
- For water tanks or high-movement areas, embed fiberglass mesh over the entire height of internal vertical walls between the two coats.
- Ensure overlaps of 25–50 mm if mesh pieces are joined.

## 9.5. Curing of cementitious coating



- Cure waterproofed areas and polymer-modified mortar using moist hessian cloth or by light water sprinkling for a minimum of 3 days to ensure proper strength development.
  - Avoid water ponding during curing to prevent washout or damage to the freshly applied material.
- 
- Ensure the surface remains uniformly moist, especially in hot or windy conditions.
  - Curing is essential for achieving maximum bond strength, durability, and shrinkage control of repair mortars.



# 10.

**Final testing  
& protection**

## 10. Final testing & protection

### 10.1. Water pond test

Conduct a water pond test to verify the effectiveness and integrity of the applied cementitious waterproofing system.



- Fill the treated area with clean water up to 50 mm height above the finished coating level.
- Maintain the ponding condition for a minimum duration of 48 hours without interruption.
- The test should be carried out after 3 days of final coat application, depending on ambient temperature and curing conditions.

- Ensure there is no leakage, dampness, or seepage observed during or after the test.
- Record and document test results before proceeding with any protective layers or tile fixing.

### 10.2. Separation layer & screed

- Place 100 GSM non-woven geotextile fabric over the fully cured waterproofing layer to act as a separation and protection barrier.
- Ensure the geotextile covers the entire area without wrinkles or folds, with proper overlaps at joints (typically 50–100 mm).





- Over the geotextile, apply a protective cement-sand screed (usually 40–75 mm thick), with: Proper slope (typically 1:100 to 1:150) for effective drainage.
- Levelling pads or reference points to maintain uniform screed thickness.
- Cure the screed as required before allowing foot traffic or tiling.

### 10.3. Protective plastering on vertical surface

- Apply a 10–12 mm thick protective plaster over vertical surfaces treated with waterproofing.
- Prepare a cement–sand mortar in the ratio of 1:4 (1 part cement: 4 parts sand) and add TECHNICAL TECHNO-MIX WL waterproofing integral compound at a dosage of 100 gram per 50 kg bag of cement. The mix should be uniform, with good workability and excellent adhesion.
- Ensure sprinkling of coarse sand over the second coat of cementitious coating while it is still wet to provide a proper mechanical key for the tile adhesive.
- Ensure the surface is evenly finished, free from cracks or voids.
- The plaster acts as a protective barrier against mechanical damage, UV exposure, and weathering.
- Cure the plaster adequately to achieve the desired strength and durability.



## 11. Key benefits of TECHNONICOL cementitious systems

- Excellent bonding with multiple substrates.
- Crack-bridging and thermal expansion tolerance.
- Strong protection for wet and submerged environments.
- Easy to apply and compatible with various site conditions.

## 12. Conclusion

TECHNONICOL's range of acrylic polymer-modified cementitious waterproofing systems delivers high durability, flexibility, and protection. With systematic surface preparation and proven application techniques, these systems ensure reliable waterproofing performance in critical wet areas and water-retaining structures.



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