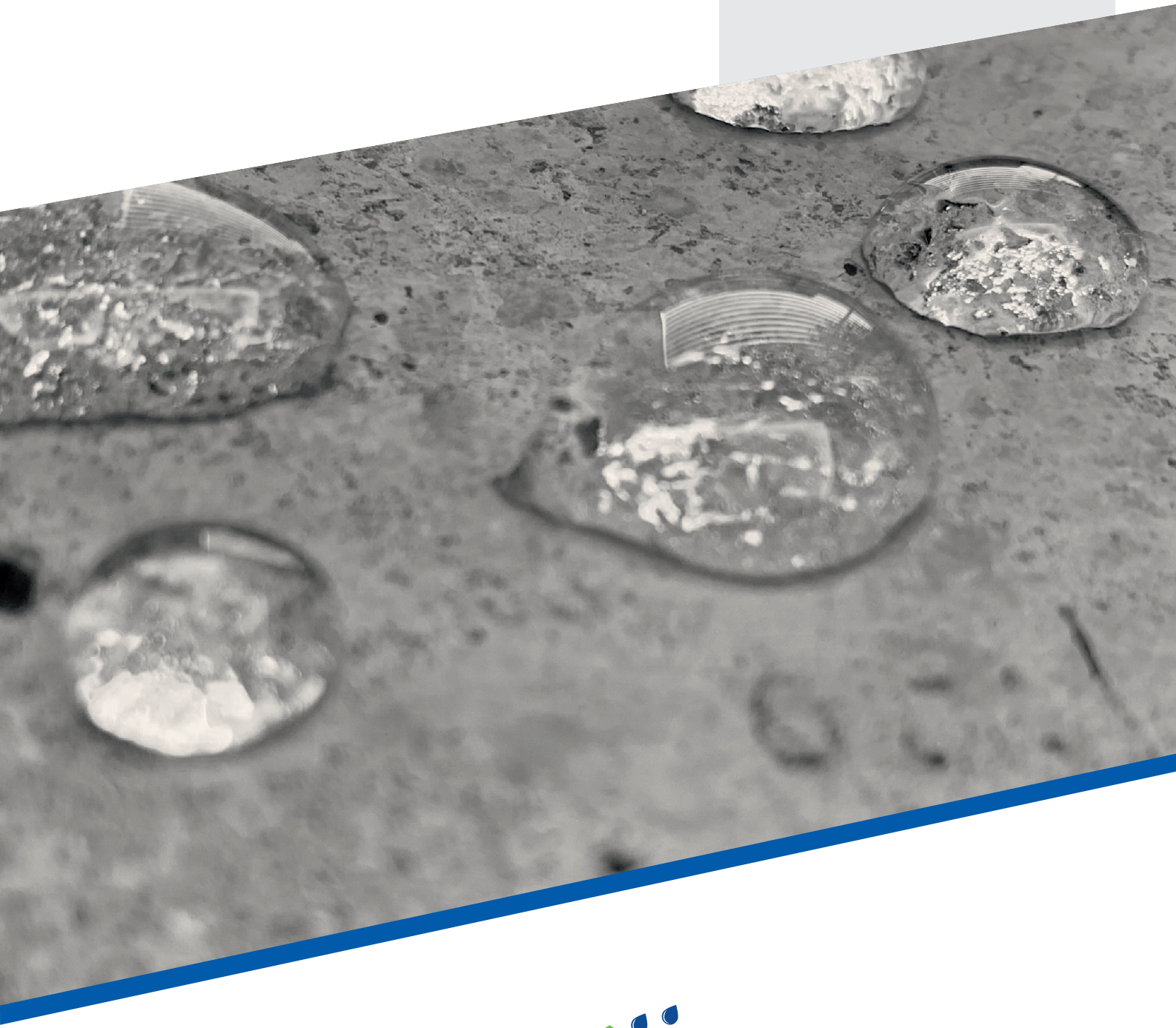
Zydex
Innovating for Sustainability



ZYCOSIL MAX
PENETRATIVE WATERPROOFING

WATERPROOFING APPLICATION MANUAL

INDEX

I. NANOTECHNOLOGY WATERPROOFING SYSTEM

1. INTRODUCTION

The nanotechnology waterproofing system is designed to protect the structure for life using a combination of

- ZycoSil Max (Organosilane penetrative nanotechnology)
- Zycobond Max (Acrylic co-polymer as a bonding agent)
- Elastobar (Acrylic co-polymer as an elastomeric membrane coating)
- Zycoprime+ (Acrylic admixture compound)
- ColdBond
- ZycoFix

2. PRODUCTS & FORMULATIONS

2.1 ZycoSil Max

ZycoSil Max is a 100% Silane, water soluble and reactive technology. It penetrates 2 to 4 mm into the substrate and protects the structure from water seepage. It also has excellent UV stability with life expectancy of over 20 years. Being a breathable waterproofing technology, the water cannot seep through, but the water vapour can escape.

ZycoSil Max waterproofs all types of siliceous surfaces and makes them water resistant while maintaining breathability.

2.1.1 ZycoSil Max Solution

a. Preparation

ZycoSil Max must be diluted with potable water (TDS below 1000 ppm) to obtain a clear transparent solution. ZycoSil Max Solution consist typically of 1 part of ZycoSil Max and 40 parts of potable water unless recommended otherwise. (Refer Table - 1)

Ensure that the water quality is fit for use with ZycoSil Max before making ZycoSil Max Solution. Simple process for above test is as follows:

Take 200 gm water in a clean beaker; add 5 gm of ZycoSil Max and stir it manually, till Zycosil Max dissolves. A clear solution indicates good water quality. If the sample solution turns turbid/whitish, the water quality is not acceptable. In rare cases when turbidity is seen even in potable water, do not use ZycoSil Max. Contact Zydex representative / customer care for clarification.

TABLE – 1

Solution Code	Application Areas	ZycoSil Max (ltrs.)	Water (ltrs.)	ZycoBond Max (ltrs.)	Total Volume (ltrs.)	Approximate Coverage (depends on the permeability of the substrate and the surface absorption)
S1	All exposed surfaces like clay roof tiles, tile joints, IPS layers, walkways, paved surfaces	1	40	0	41	25-40 m^2 (270-430 ft^2)
S2	Basement, Sunks, Mother slabs, Pre Stone Cladding, Priming before IPS / Plastering / Tiles	1	40	1	42	25-40 m^2 (270-430 ft^2)
S3	Stones, Plastered & Concrete structures	1	40	0	41	25-40 m^2 (270-430 ft^2)
S4	Exposed Bricks/ Fair faced concrete	1	40	0	41	25-40 m^2 (270-430 ft^2)
S5	Priming for Painting	1	40	2	43	80-100 m^2 (860-1075 ft^2)
S6	Treatment of Honeycomb, Cracks, Cold Joints	1	40	1	42	Till saturation

b. Application

For effective and long term waterproofing, use diluted ZycoSil Max solution in the area to be treated till saturation, to ensure 3 to 4 mm penetration into the substrate.

ZycoSil Max is best applied at ambient temperatures of 10 °C to 35 °C. We recommend that the application be done in the morning or evening hours, to avoid peak heat of the sun.

Horizontal Surfaces

Apply ZycoSil Max solution with a roller brush on surface till flood saturation is achieved. Ensure 100% saturation.

Vertical Surfaces

For achieving best performance, spray ZycoSil Max solution from bottom to top.

Full saturation for the vertical surface is achieved when, with repetitive light spray (typically 3-4 times after 30-45 seconds time intervals), the solution starts dripping down the wall.

c. Drying

ZycoSil Max treated surfaces becomes waterproofed only after the water evaporates completely. Check waterproofing by splashing water on the treated surface. If the water droplets remain for at least 10 to 15 minutes, waterproofing and surface curing is confirmed.

For Semi-wet areas and during rainy season, the procedure for ZycoSil Max waterproofing application is as follows:

Depending on surface wetness and residual water absorption capacity, ZycoSil Max should be diluted with water in the ratio of 1:5 to 1:10. For quick and complete drying, use Halogen lamp or hot blower on the surface. Confirm waterproofing on horizontal or vertical surface with RILEM test. (Sec. 4.1)

The dilution ratio and the exposure time with the halogen lamp must be decided by the applicator depending on the surface conditions.

2.2 ZYCOBOND MAX

Zycobond Max is an acrylic co-polymer emulsion, to be used as a bonding agent for excellent adhesion on plaster surfaces. When added to ZycoSil Max Solution it reduces the porosity of cement surfaces substantially & makes it water resistant.

2.3 ELASTOBAR

Elastobar is an acrylic co-polymer emulsion. It forms on-site seamless cross-linked elastomeric membrane barrier on concrete. The acrylic composition ensures excellent UV stability, high strength and elongation up to 250% on mixing with cement and sand.

2.4 ZYCOPRIME+

ZycoPrime+ can be used as an additive for bonding plaster or concrete mixes for improved water resistance and flexibility.

2.5 COLDBOND

Nano Size Acrylic Coploymer (70-90 mm) with very high bond strength.

2.6 ZYCOFIX

Regular, Super & Ultra Grade Tile adhesive.

TABLE – 2

Formulations for various waterproofing applications:

Formulations	ZycoPrime+ (ltrs.)	Elastobar (kg)	Cement (kg)	Sand (kg)	Water (ltrs.)	Coverage
F 1 (For Coving)	1	0	5	15	2.5	9 running meters for 25 mm x 25 mm size coving
F 2 (For sealing surface cracks, joints & corners)	0	1	1	1.5 (<100 mesh)	0.16	4-5m² for 0.2mm (200 microns) DFT. Sun Dry (>/= 25° C) for 6 hours.
F 3 (Membrane Coat)	0	1	1	1	Brushable consistency	2 m² @ 0.5 mm (2 coats) or 1 m² @ 1 mm (4 coats) membrane coating. Apply all coats on a wet on wet basis. Sun Dry (>/= 25°C) for 6-12 hours.

3. COMMON APPLICATION PROCEDURES

3.1 Surface preparation, testing and defect rectification

3.1.1 Surface cleaning

Clean the surface by chipping and removing all the loose particles. Remove the laitance by grinding and clean the dust by air blower or by using industrial vacuum cleaner, followed by high pressure water-jet cleaning. Allow surface to dry.

3.1.2 Testing

Carry out sound & water ponding test (sec. 4.2 & 4.3) to identify the cavities, voids, honey combs and cracks.

3.1.3 Defect rectification

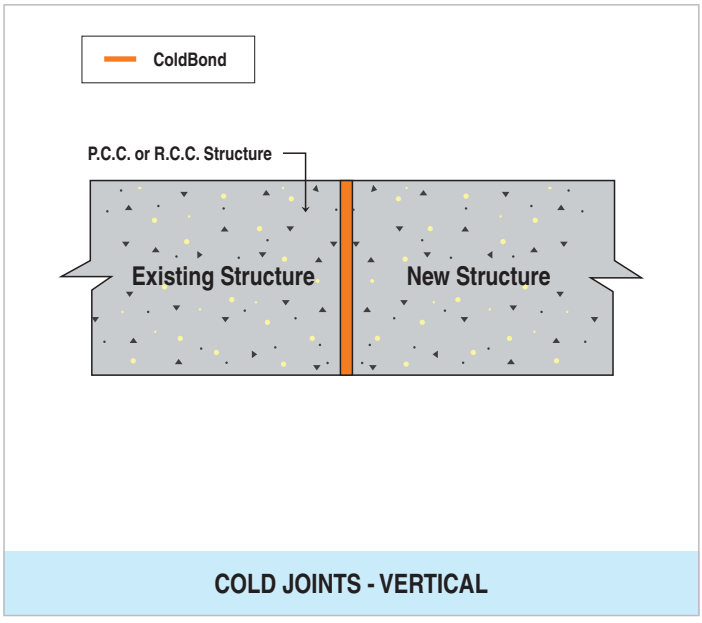
a. ***Crack rectification:*** Identify cracks responsible for leakages. Check the cracks visually and open with a cutter. Clean the cracks with blower and flood with ZycoSil Max solution S6 (Table 1). Let it dry for 24 hours then fill the cracks (upto 10 mm) with F 2.

b. ***Voids and Honey Combs rectification:*** Inject ZycoSil Max solution S6 (Table 1) till voids and honey combs are completely filled and saturated. Allow structure to dry totally and grout with F 1 (Table 2). Adjust water to achieve paste consistency.

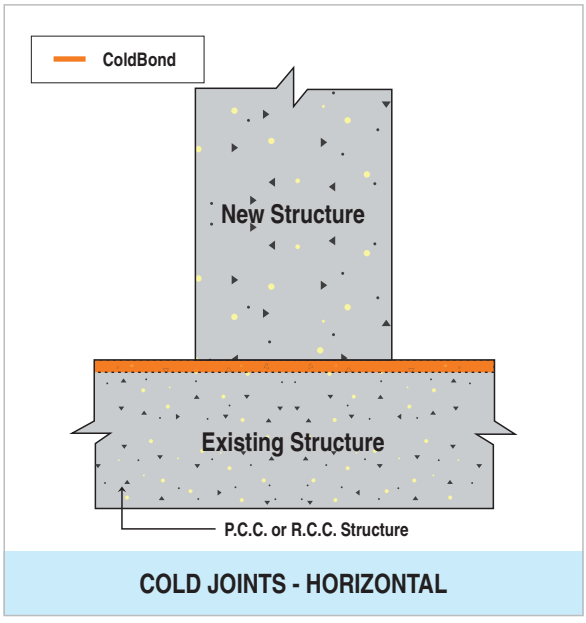
c. ***The structural joints:*** Make V-groove, treat with ZycoSil Max solution S6 (Table 1) and allow complete drying. Apply one coat of ZycoBond Max and fill the joints with F 2 (Table 2). Allow proper curing.

d. ***Water Outlets:*** Open the water inlets and outlets, weep holes and drain pipes by chipping or grooving. Saturate the opened grooves with ZycoSil Max solution S6 (Table 1) and allow drying. Apply one coat of ZycoBond Max to act as a bonding layer. Fill the gaps with F 1 (Table 2) and cure properly. Waterproof the cured surface with ZycoSil Max solution S6 (Table 1).

3.2 Cold joints



COLD JOINTS - VERTICAL



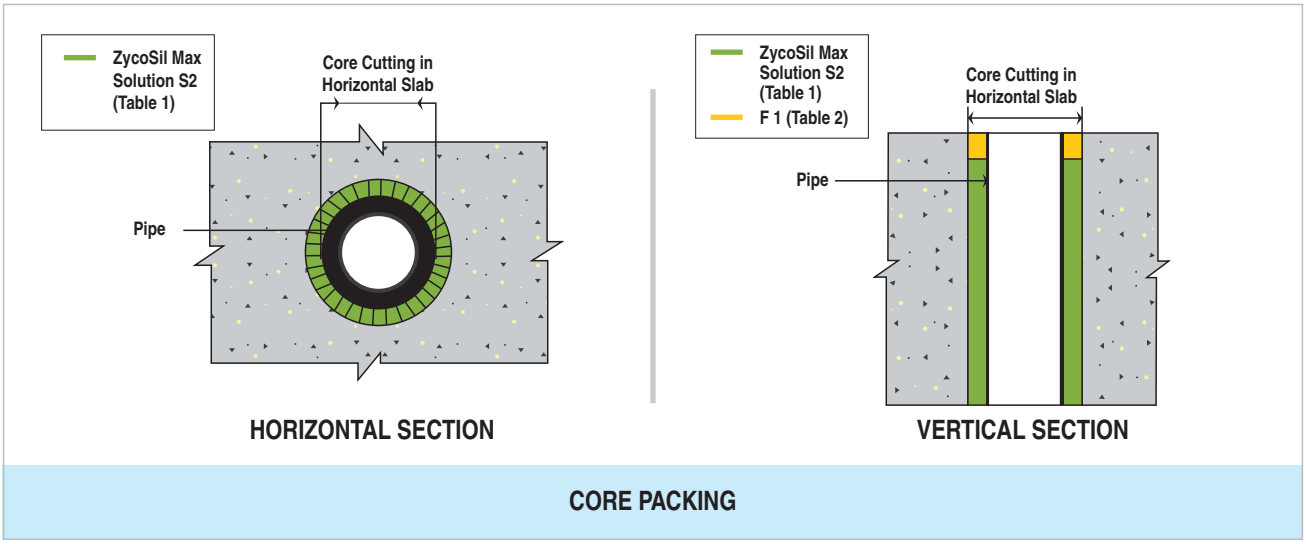
COLD JOINTS - HORIZONTAL

PCC (Plain Cement Concrete) or RCC (Reinforced Cement Concrete) are cast in parts. The junction of PCC or RCC structures will always have cold joints. The waterproofing of cold joints is critical to have water tight structure. Waterproofing procedure for the cold joints is as below:

Apply a single coat of undiluted ColdBond on the treated surface with a brush or spray.

Now pour fresh concrete or plaster the surface. This eliminates hacking procedure.

3.3 Core Packing (Horizontal and Vertical)



CORE PACKING

a. Apply ZycoSil Max solution S6 (Table 1) on the core wall and the sides to saturation and let it dry.

b. Treat the core area along with outer edges, up to 25 mm with ZycoSil Max solution S 6 (Table 1) and dry completely.

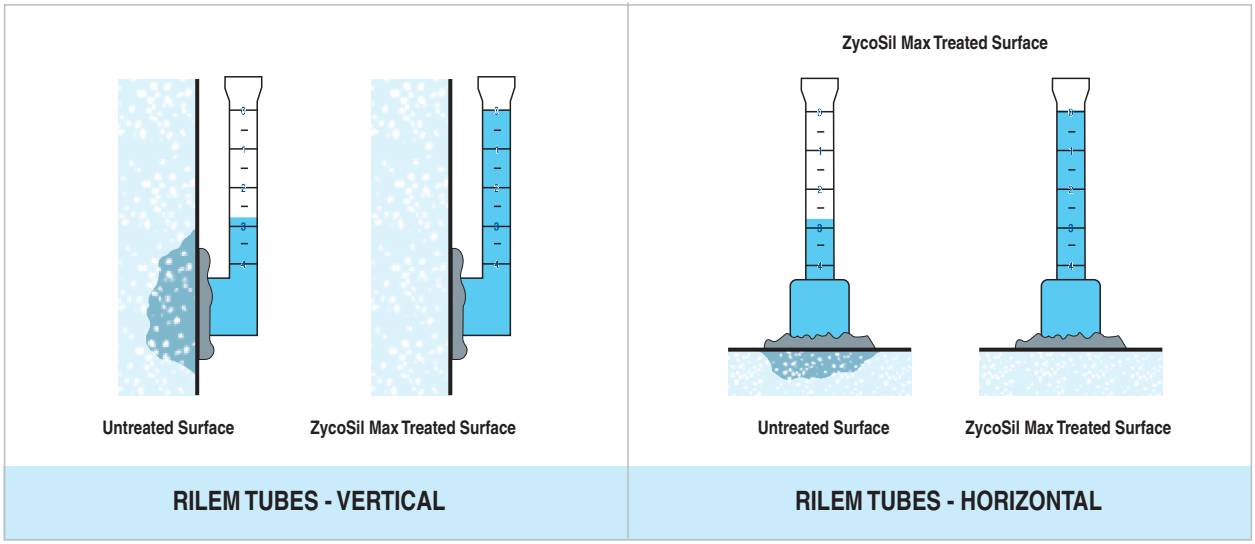
c. Brush apply core surface with ZycoBond Max. Insert the pipe into the prepared core pack.

d. Grout the gap between pipe and the core with F 1 (Table 2). Cure completely by watering for 2-3 days.

4. ON-SITE TEST TECHNIQUES

Monitor and evaluate the quality of the ZycoSil Max waterproofing technology by following test procedures:

4.1 RILEM TEST



RILEM (Reunion Internationale des laboratories D'Essais et de Recherches sur les Materiaux et les Constructions, Paris), is the International Union of Testing and Research Laboratories for Materials and Structures.

RILEM Test Method II.4 is for measuring the volume of water absorbed by a material within a specified time period. The test can be performed at the site easily for vertical or horizontal surfaces. It simulates pressure created by wind driven rain of a Category 1 hurricane.

Water absorption of less than 0.2 ml in 20 minutes confirms acceptable waterproofing. This waterproofed surface can with stand 120 (Vertical) – 140 (Horizontal) km/hr. wind driven rain. ZycoSil Max Solution (Table 1 - S6) treated surfaces show < 0.2 ml after 1-3 hrs.

RILEM Test Procedure:

a. Affix the bottom end of the tube on the masonry surface with clay or putty. Apply manual pressure to ensure adhesion.

b. Add water through the upper open end of the pipe using a long pipette to prevent any air bubbles in the tube until the column reaches the zero gradation mark.

c. Check the quantity of water absorbed by the material in a specified time (20 minutes). This can be read directly from the graduated tube.

4.2 SOUND TEST

Hammer the structure softly and observe the sound. Hollow space of honeycombs will absorb and dampen the sound compared to solid structures. Identify the defects and treat them. (3.1.3 b)

4.3 WATER PONDING TEST

Close the water outlets of the test area and fill it up to 50 mm with water and observe for signs of seepage or leakage for 24 - 48 hours. No seepage or leakage confirms waterproofing.

4.4 SCRATCH / ABRASION TEST

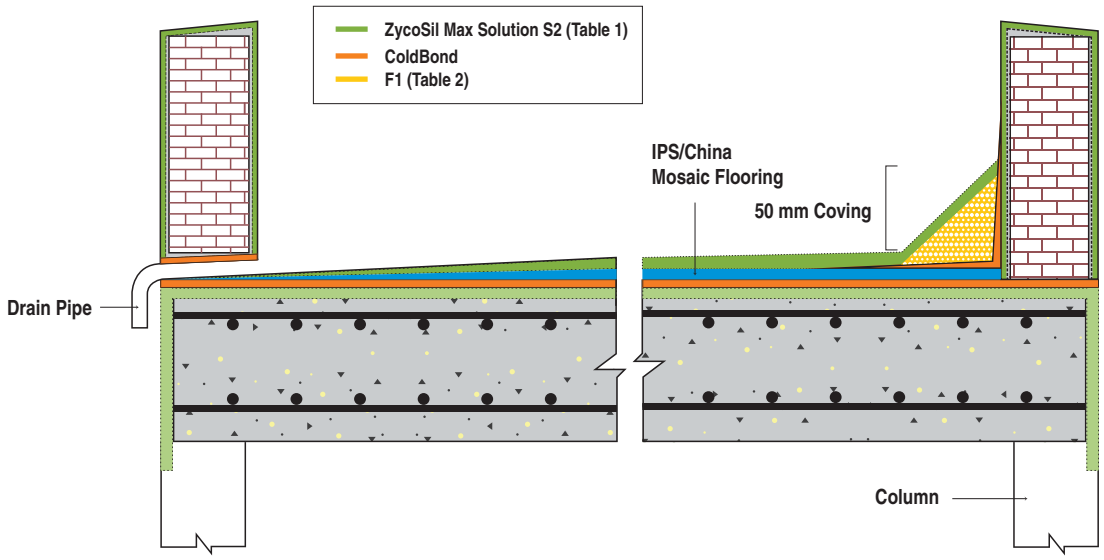
Scratch ZycoSil Max treated surface up to 2 to 3 mm with a blade. Put a drop of water on the scratched surface as well as on the scratched powder material. Non- wetting of the scratched surface as well the powder confirms waterproofing. To determine the depth of penetration, continue scratching till surface starts absorbing water.

II. APPLICATION TECHNIQUES

5. ABOVE GROUND LEVEL APPLICATIONS

5.1 ROOF TERRACE

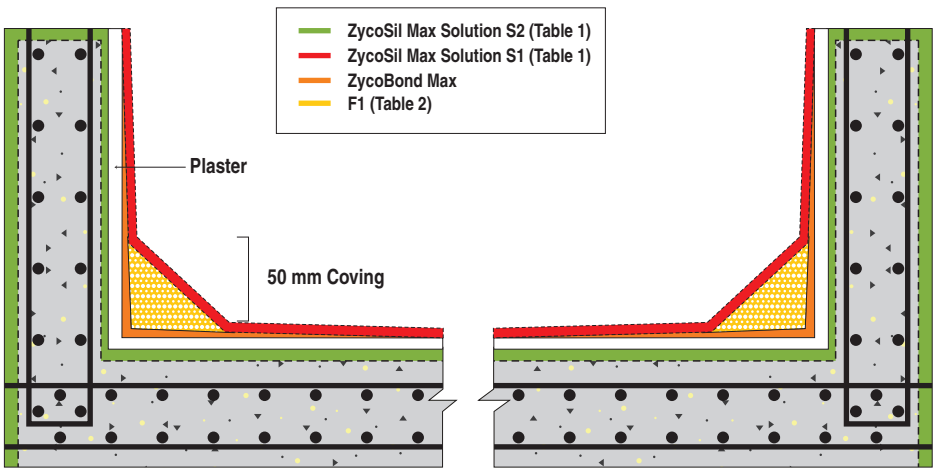
Waterproof the roof terraces as detailed below:



ROOF TERRACES

1. Carry out 'surface preparation' and 'defect rectification'. (Sec. 3.1)
2. Apply ZycoSil Max solution S2 (Table 1) on horizontal surface.
3. Carry out Rilem Test on the treated dry surface to check for water absorption.
4. Apply one coat of ZycoBond Max as bonding layer for sloping and cladding work.
5. Then do sloping (screeding or IPS) and cladding (tiling or china mosaic) as per specifications, followed by waterproofing of the finished surface with ZycoSil Max solution S2 (Table 1) and dry completely if needed for extra protection.
6. Apply ZycoSil Max solution S2 (Table 1) to saturation on the vertical surfaces (walls and parapet - inner, top and outer side). Dry completely.
7. **Coving:** Apply one coat of ZycoBond Max up to 100 mm on both surfaces, at the vertical wall and at the horizontal slab junction to provide bonding for coving. Do 50 mm X 50 mm coving using F 1 (Table 2). Apply ZycoSil Max solution S2 (Table 1) to saturation, on the coving area and dry completely. Check for waterproofing efficacy by a water ponding test.
8. **Core Packing / Pipe Fixing:** Do core packing waterproofing. (Sec. 3.3)

5.2 OVERHEAD TANKS



OVERHEAD TANKS - R.C.C. AND TANK WALLS

Floor and Walls (Inside & Outside)

1. Carry out 'surface preparation' and 'defect rectification' (as per guidelines Sec. 3.1).
2. Apply ZycoSil Max solution (1:20) at 1 ltr / m^2 on horizontal and vertical surface.
3. Always use Flood Lamps to dry inside tanks.
4. Carry out Rilem Test on the treated dry surface to check for water absorption (Sec. 4.1).
5. Treat floor and inside walls of the tank with one coat of ZycoBond Max and plaster the surface.

6. Coving:

a. Apply one coat of ZycoBond Max up to 100 mm on both surfaces, at the vertical wall and at the horizontal slab junction to provide bonding for coving. Carry out 50 mm X 50 mm coving using F 1 (Table 2).

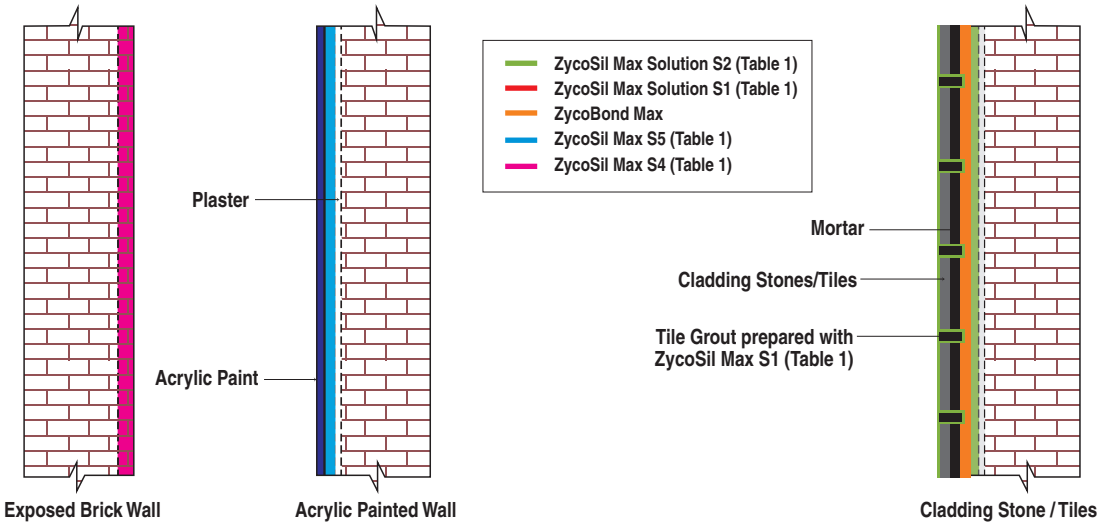
b. Apply ZycoSil Max solution S1 (Table 1) till saturation on the coving area and dry completely. Check for waterproofing efficacy by a water ponding test.

7. Apply ZycoSil Max solution S1 (Table 1) on outside and inside of the tank walls.

8. Core Packing / Pipe Fixing: Carry out core packing waterproofing (Sec. 3.3).

5.3 EXTERNAL WALLS & CLADDINGS

The external walls of any structure / building are either cement plastered with / without paint or exposed bricks or with stone claddings or painted with acrylic paint.



WALLS AND CLADDINGS

5.3.1 External Walls

Carry out 'surface preparation' and 'defect rectification' of the wall and joints (Sec. 3.1).

1. Exposed brick:

Perform a test patch to check appearance of the surface after ZycoSil Max treatment. Treat the test area with different dilutions to make sure the natural texture and appearance is not affected by ZycoSil Max treatment. Observe appearance of the treated bricks after drying for any drastic change in colour tone.

While doing work on bricks there is a possibility of minor tonal differences, which the customer should be willing to bear with. Do a Rilem Test (Sec. 4.1) on the treated dry surface to check for water absorption. Apply ZycoSil Max solution S4 (Table 1) till saturation on the exposed brick wall.

2. Plaster with Acrylic paint:

Apply ZycoSil Max solution S5 (Table 1) on plastered wall and dry completely. Fill the wall cracks with a crack filler. In case putty is applied, prepare putty using ZycoSil Max solution S3 (Table 1) instead of water. Follow with the paint application.

4. Stone / Tile Claddings

a. Apply ZycoSil Max solution S2 (Table1) till saturation on the vertical wall. Dry completely.

b. Apply one coat of ZycoBond Max on the ZycoSil Max treated surface for excellent bonding to cement mortar.

c. Fix stones /tile cladding using appropriate Zycofix (tile adhesive) grades.

d. For grouts, use ZycoSil Max solution S1 (Table 1) instead of regular water to make the paste.

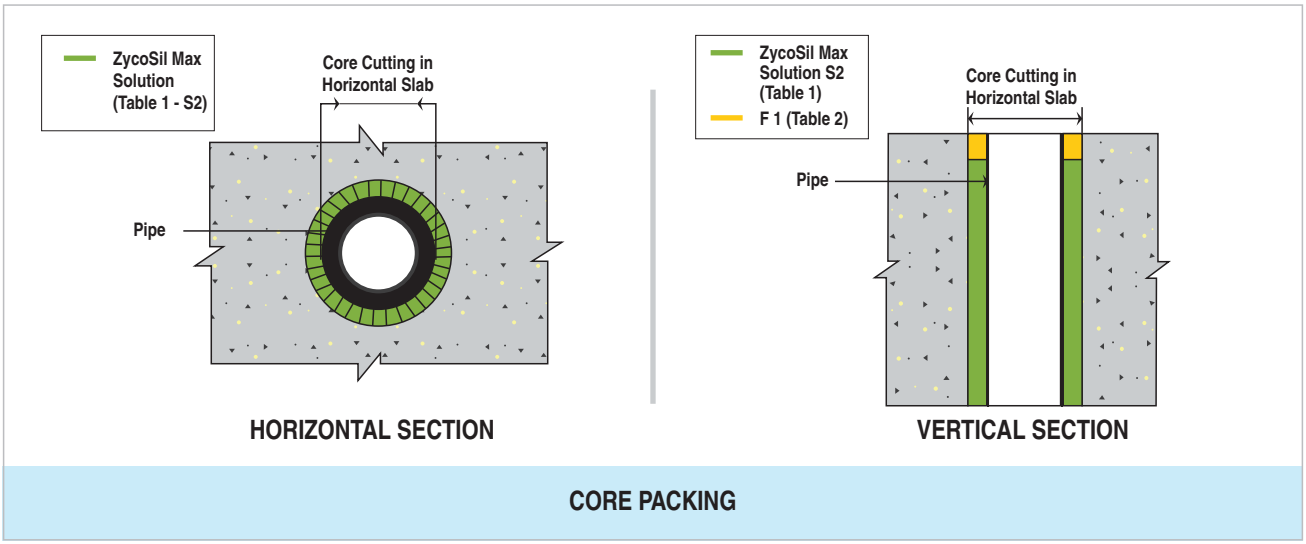
e. Perform a test patch to check appearance of the surface after ZycoSil Max treatment. Treat the test area with different dilutions to make sure the natural texture and appearance is not affected by ZycoSil Max treatment. Observe appearance of the treated stone claddings after drying for any drastic change in color tone. Do a Rilem Test (Sec. 4.1) on the treated dry surface to check for water absorption.

f. Apply ZycoSil Max S1 (Table 1) till saturation on the stone claddings.

5.4 TOILETS, BALCONIES AND UTILITY AREAS

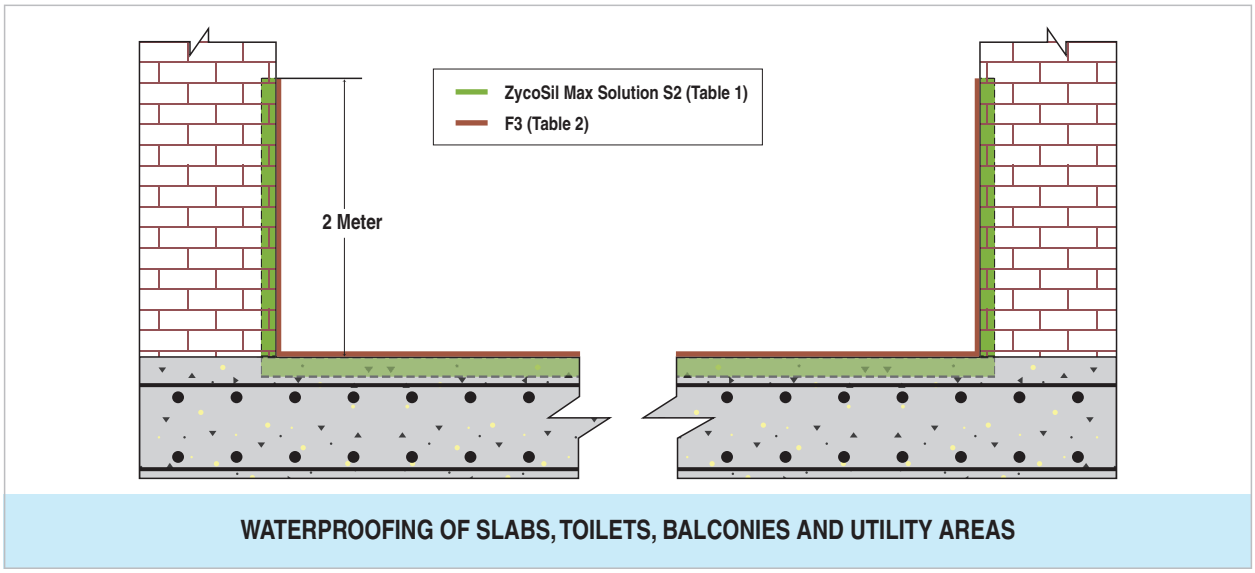
I. Core Packing / Pipe Fixing:

Do core packing waterproofing. *(Sec. 3.3)*



CORE PACKING

ii. Waterproofing of Slab

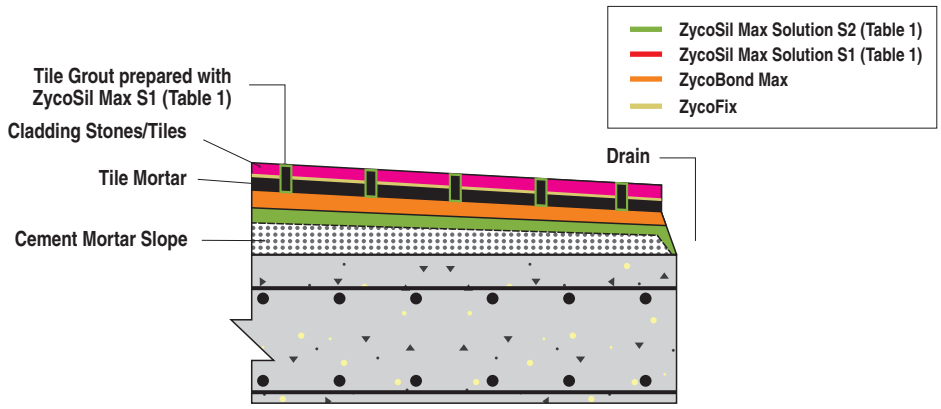


WATERPROOFING OF SLABS, TOILETS, BALCONIES AND UTILITY AREAS

Carry out 'surface preparation' and 'defect rectification'. (Sec. 3.1)

1. Apply ZycoSil Max solution S2 (Table 1) on horizontal surface and vertical walls upto two meter height and dry completely.
2. Check for waterproofing efficacy by Water Ponding test (Sec. 4.2).
3. Apply F3 (Table 2) using a brush. A minimum of one coat is recommended to achieve 250 microns thickness. Allow to cure.

iii. Protective Plastering / Slope Creation / Cladding



BATHROOM AND BALCONIES (SLOPE & CLADDING)

1. Lay cement mortar plaster as per specifications to make the slope towards the drain outlets.
2. Apply ZycoSil Max solution S2 (Table 1) on horizontal surface.
3. Apply a single coat of ZycoBond Max on cement mortar slope and follow the procedure for installation of tiles as per Zydex protocol using ZycoFix tile adhesive.
4. For all tile grouts, use ZycoSil Max solution S1 (Table 1) instead of regular water to make the paste.

6. BELOW GROUND LEVEL APPLICATIONS

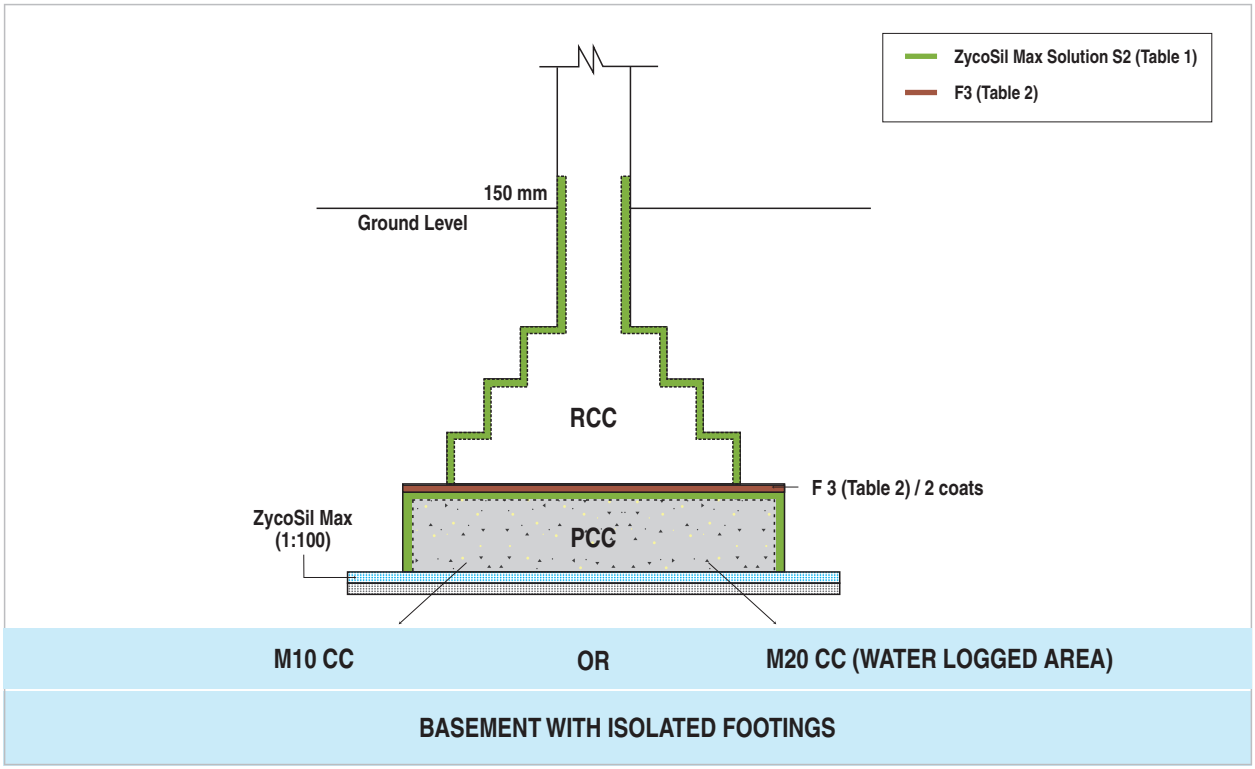
6.1 Basements

a. Foundation

Waterproofing of soil with ZycoSil Max nanotechnology enables to prevent water seepage due to capillary rise.

After excavation spray 3 liters / m^2 ZycoSil Max solution (1:100) on dry soil bed and sun dry for 1 to 3 hours. Allow to dry and check the waterproofing by creating water puddle for at least 20 to 30 minutes. The confirmation of waterproofing is that water will not be absorbed by the treated surface.

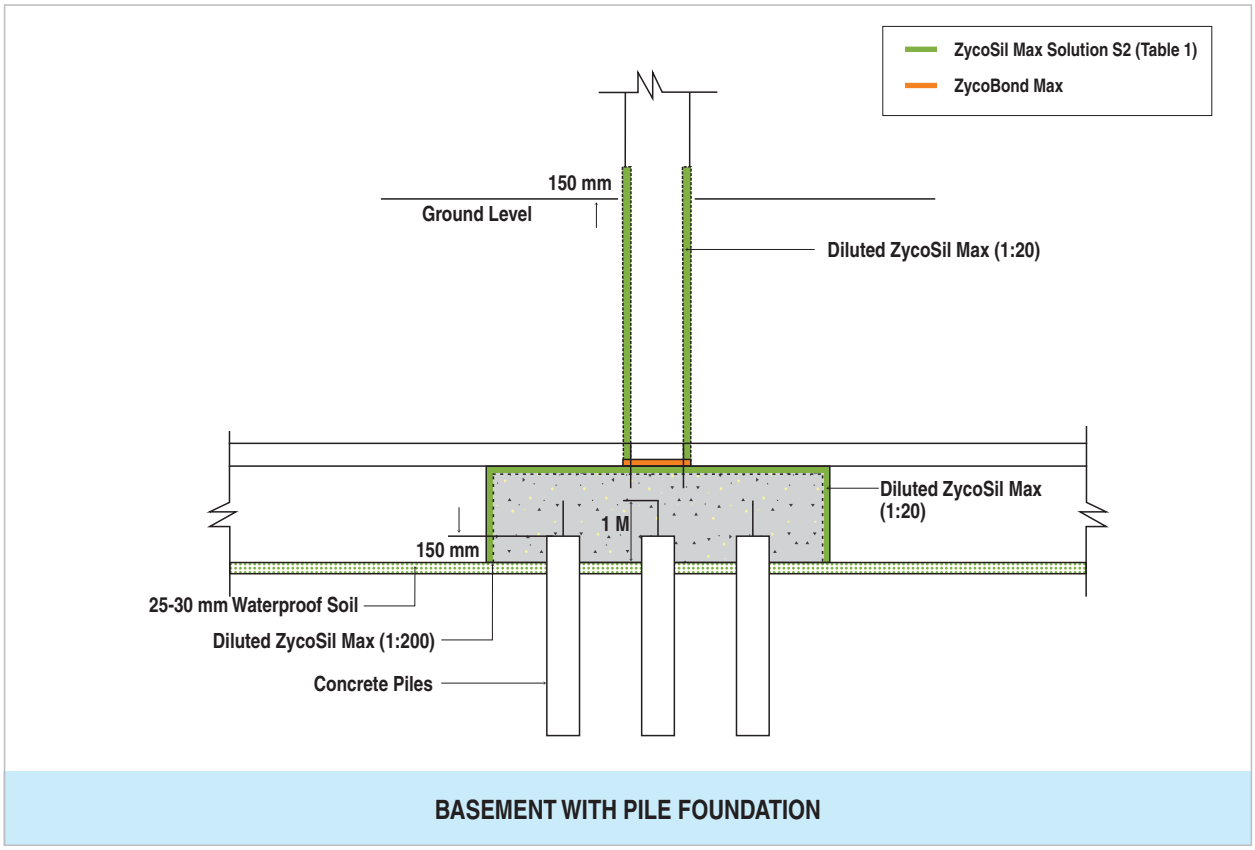
b. Basement with Isolated Footings



1. Dig up to load bearing soil and waterproof the soil with ZycoSil Max Solution 1:100 (3 ltrs / m^2).
2. Construct M10 / M20 concrete and treat with ZycoSil Max solution S2 (Table 1).
3. Apply two coats of F 3 (Table 2) on M10 / M20 surface. Carry out the RCC for footing.
4. Apply ZycoSil Max solution S1 (Table 1) on all the sides of the footing upto 150 mm above the earth level.

In water logged areas the junction of PCC & RCC can be treated with F1 (Table 2) to ensure a complete sealing of the linear junctions around the footing.

c. Basement with Pile Foundation

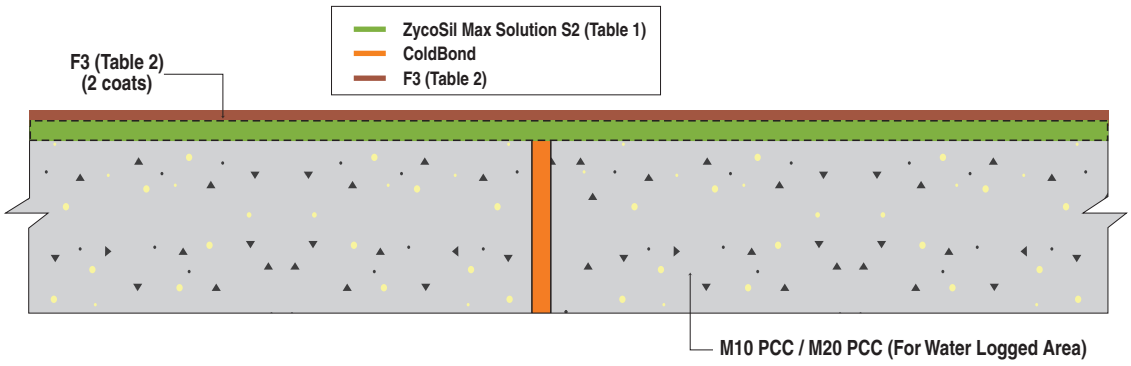


BASEMENT WITH PILE FOUNDATION

1. Pour specified concrete to fill the piles and cure completely. Open up one meter reinforcement of the top of pile structure. In case of slushy or marshy land, use waterproofed soil from Zydex around 2.5 - 3 cm thick layer around the pile structures and then compact manually or by mechanical compactor.
2. Ensure that 150 mm concrete piles are above the waterproofed soil surface along with one meter open section of reinforced steel.
3. Use mechanical vibrator for compaction followed with pouring of wet on wet specified concrete to complete casting of the pile footing.
4. Apply ZycoSil Max solution (1:20) on all the sides of the footing 150 mm above the expected earth level followed with one coat of ZycoBond Max. Fill the soil.

d. Below-Grade PCC

1. Apply ZycoSil Max solution S1 (Table 1) on cured PCC to cover 24-40m² per litre. Apply one coat of F3 (Table 2) on the treated PCC.
2. Apply two coats of F3 (Table 2)



BASEMENT - BELOW GRADE P.C.C.

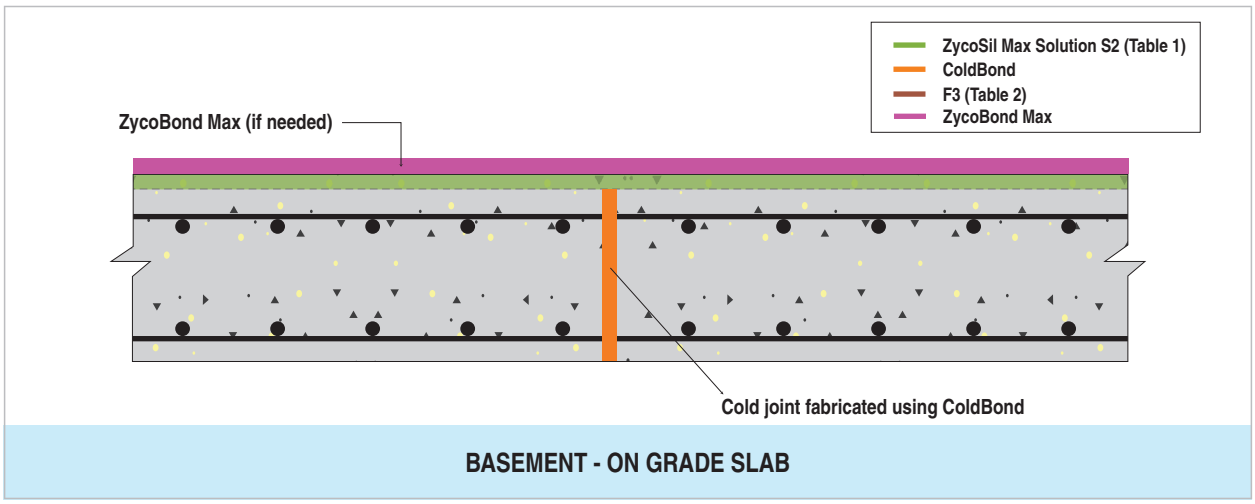
3. Apply ZycoSil Max solution S5 (Table 1) on all sides of the junctions of PCC and the column.

4. Coving:

a. Apply one coat of ZycoBond Max up to 100 mm on both surfaces, at the vertical wall and at the horizontal slab junction to provide bonding for coving. Do 50 mm X 50 mm coving using F 1 (Table 2).

b. Apply ZycoSil Max solution S2 (Table 1) till saturation on the coving area and dry completely.

e. On-Grade Slab

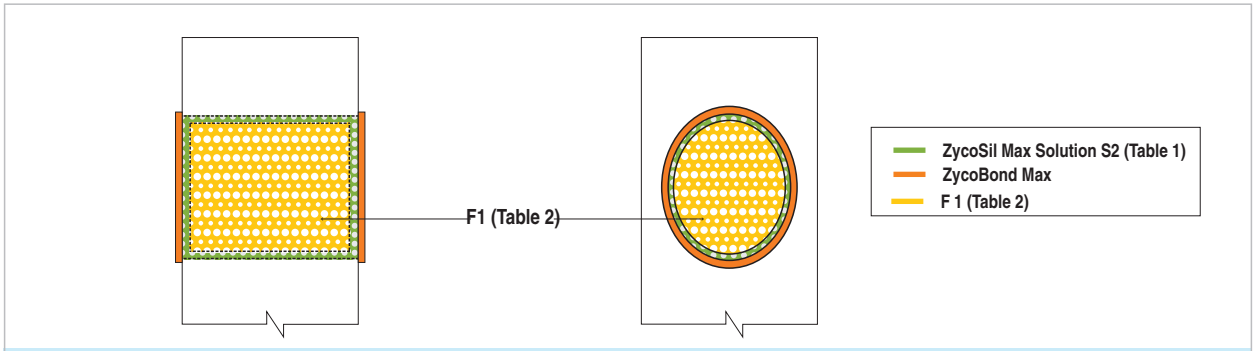


BASEMENT - ON GRADE SLAB

1. Carry out 'surface preparation', 'defect rectification' and 'cold joint treatment'. (Sec. 3.1 & 3.2).
2. Apply ZycoSil Max solution S2 (Table 1) on horizontal surface.
3. Carry out Rilem Test (Sec. 4.1) on the treated dry surface to check for water absorption .
4. Apply one coat of ZycoBond Max on the ZycoSil Max treated surface. Screeding, concreting, plastering or tiling can be done as specified.

f. Retaining Wall

i. Tie-Rod Holes



RETAINING WALL - TIE ROD HOLES

1. Saturate tie rod holes completely with ZycoSil Max solution S2 (Table 1) by spray.
2. Pack the tie rod hole with F1 (Table 2). Cure properly by watering for 2-3 days.
3. Apply ZycoSil Max solution S2 (Table 1) on the top of the filled tie-rod holes.
4. Apply ZycoBond Max on the treated surface.

ii. Positive Side

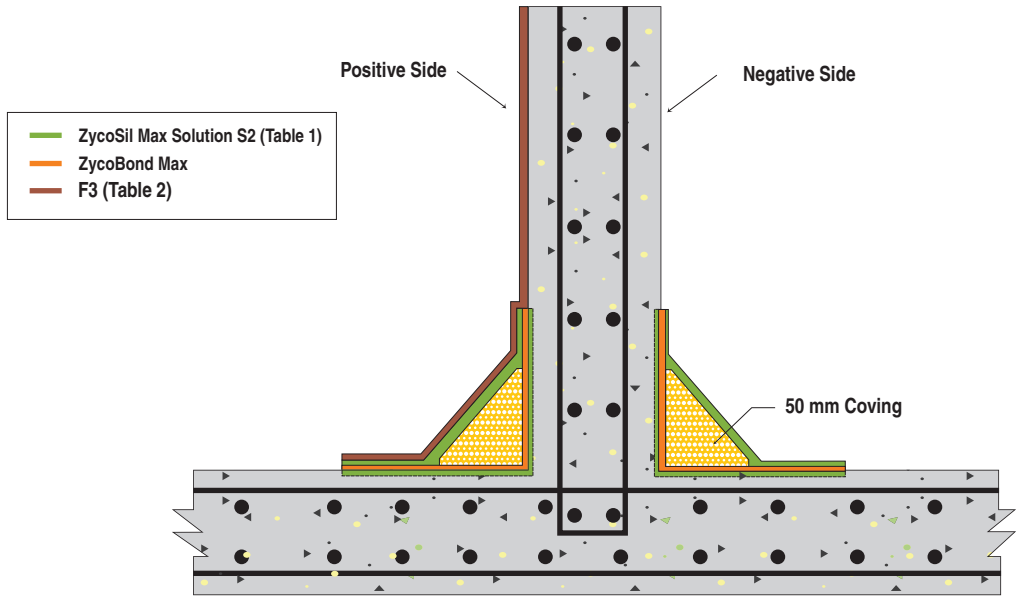
1. Carry out 'surface preparation', 'defect rectification' and 'cold joints treatment' (Sec. 3.1 & 3.2).
2. ZycoSil Max solution S2 (Table 1) is applied on the vertical surface by roller brush and the surface is saturated for deep penetration.
3 **Coving:** Apply one coat of ZycoBond Max up to 150 mm on both surfaces at the retaining wall and graded slab junction to provide bonding for coving. Carry out 50 mm X 50 mm coving using F1 (Table 2). Apply ZycoSil Max solution till saturation S2 (Table 1) on the coving area and dry completely.
4. Clean the surface to remove dirt by blower to remove any new dust that may have settled.
5. Apply two coats of F3 (Table 2) on the retaining wall and do back filling only after allowing curing for 2-3 days to ensure protection against damage.

iii. Negative Side

Coving:

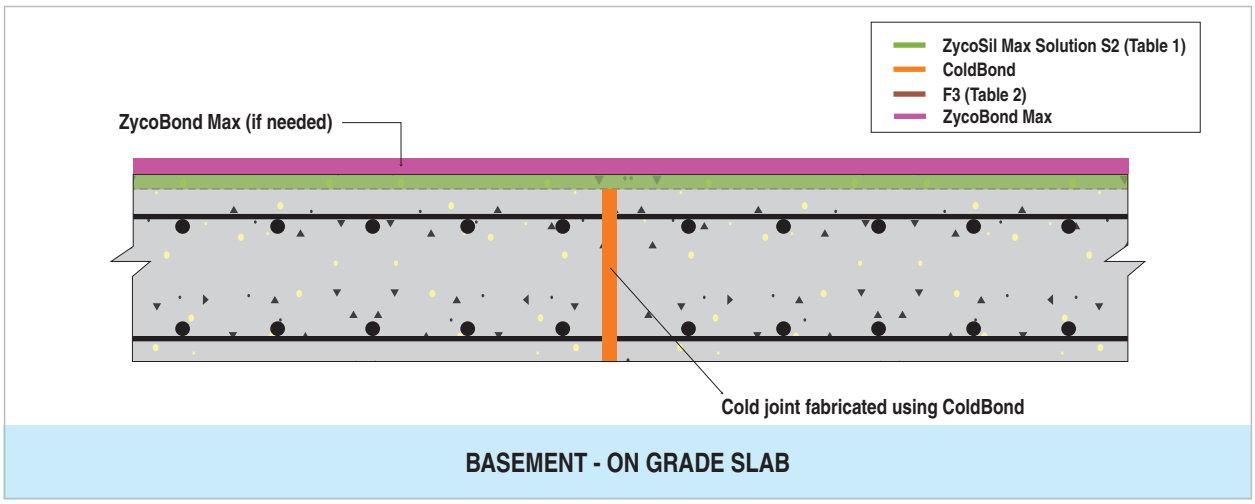
a. Apply ZycoSil Max solution S2 (Table 1) on the coving area.

b. Carry out coving as mentioned in positive side treatment.



BASEMENT - RETAINING WALL

e. On-Grade Slab

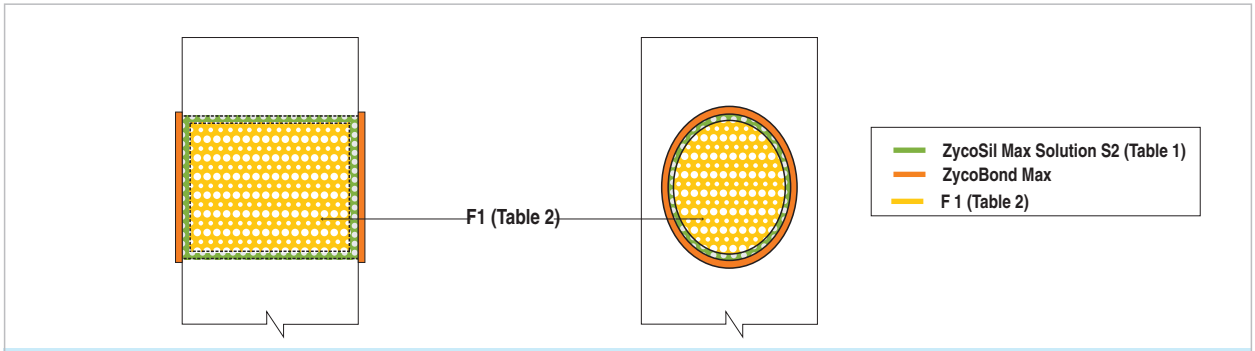


BASEMENT - ON GRADE SLAB

1. Carry out 'surface preparation', 'defect rectification' and 'cold joint treatment'. (Sec. 3.1 & 3.2).
2. Apply ZycoSil Max solution S2 (Table 1) on horizontal surface.
3. Carry out Rilem Test (Sec. 4.1) on the treated dry surface to check for water absorption .
4. Apply one coat of ZycoBond Max on the ZycoSil Max treated surface. Screeding, concreting, plastering or tiling can be done as specified.

f. Retaining Wall

i. Tie-Rod Holes



RETAINING WALL - TIE ROD HOLES

1. Saturate tie rod holes completely with ZycoSil Max solution S2 (Table 1) by spray.
2. Pack the tie rod hole with F1 (Table 2). Cure properly by watering for 2-3 days.
3. Apply ZycoSil Max solution S2 (Table 1) on the top of the filled tie-rod holes.
4. Apply ZycoBond Max on the treated surface.

ii. Positive Side

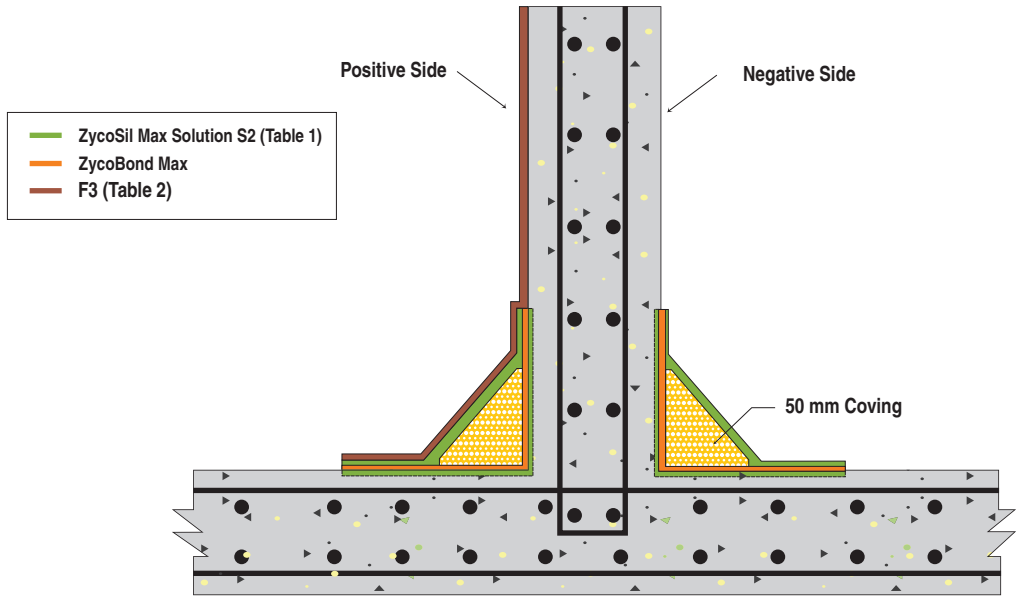
1. Carry out 'surface preparation', 'defect rectification' and 'cold joints treatment' (Sec. 3.1 & 3.2).
2. ZycoSil Max solution S2 (Table 1) is applied on the vertical surface by roller brush and the surface is saturated for deep penetration.
3 **Coving:** Apply one coat of ZycoBond Max up to 150 mm on both surfaces at the retaining wall and graded slab junction to provide bonding for coving. Carry out 50 mm X 50 mm coving using F1 (Table 2). Apply ZycoSil Max solution till saturation S2 (Table 1) on the coving area and dry completely.
4. Clean the surface to remove dirt by blower to remove any new dust that may have settled.
5. Apply two coats of F3 (Table 2) on the retaining wall and do back filling only after allowing curing for 2-3 days to ensure protection against damage.

iii. Negative Side

Coving:

a. Apply ZycoSil Max solution S2 (Table 1) on the coving area.

b. Carry out coving as mentioned in positive side treatment.



BASEMENT - RETAINING WALL

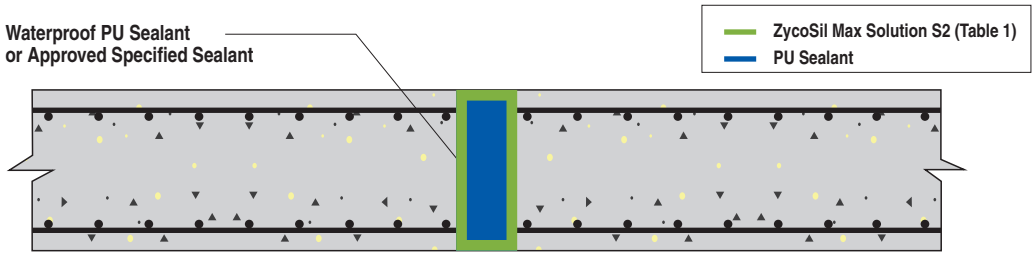
6.2 ELEVATOR PITS

Follow the Overhead Tank Protocol (Sec. 5.3)

6.3 PODIUMS

Carry out the 'surface preparation', 'defect rectification' and 'cold joints treatment'. (Sec. 3.1 & 3.2).

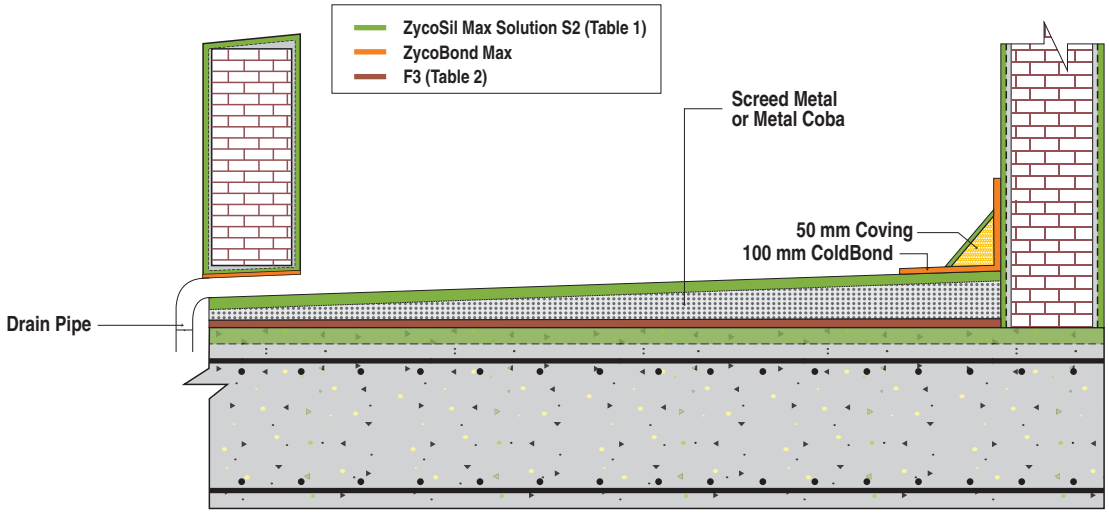
1. Expansion Joints



PODIUM - EXPANSION JOINTS

Clean the surface of the expansion joint to remove dirt. Apply PVC fabric tape form underneath to create a seal capable of holding liquid the joint. Ensure this cavity of expansion joint is completely filled with ZycoSil Max solution S2 (Table 1) and allow to absorb and dry. Fill the expansion joint with flexible sealant as per specification.

2. Podium Slab



PODIUM SLAB

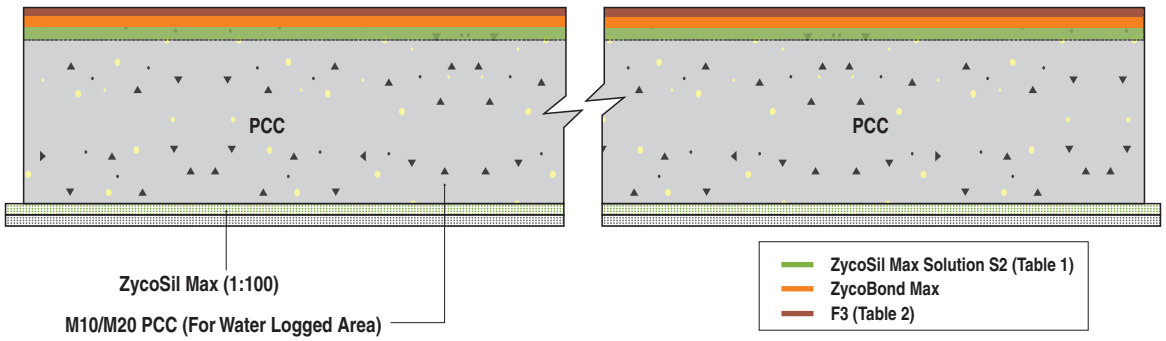
1. Carry out 'surface preparation' and 'defect rectification'. (Sec. 3.1 & 3.2).
2. Apply ZycoSil Max solution S2 (Table 1) on horizontal surface and parapet. Dry completely.
3. Carry out Rilem Test on the treated dry surface to check for water absorption. (Sec. 4.1).
4. Apply two coats of a special composition (2:1:1 of Elastobar : Cement : Sand) for extra elongation, using a rubber scrapper or a brush.
5. Lay cement mortar plastering to make the slope towards the drain outlets. Follow the ZycoSil Max solution S2 (Table 1) application on finished surface.
6. **Coving:**

    a. Apply one coat of ZycoBond Max up to 150 mm on both surfaces at the wall and slab junction to provide bonding for coving. Do 100 mm X 100 mm coving using F1 (Table 2).

    b. Apply ZycoSil Max solution S2 (Table 1) till saturation on the coving area and dry completely. Check for waterproofing efficacy by Water Ponding test (Sec. 4.3).

7. **Core Packing:** Carry out core packing waterproofing. (Sec. 3.3).

6.4 SWIMMING POOL / SEWAGE TREATMENT PLANT (STP) AND OTHER WATER BODIES



SWIMMING POOL/SEWAGE TREATMENT PLANT (STP) AND OTHER WATER BODIES - P.C.C. SLAB

Waterproofing of soil with ZycoSil Max enables prevention of water seepage due to capillary rise.

After excavation spray 3 liters / m^2 of ZycoSil Max solution (1:100) on dry soil bed and sun dry for 1 to 3 hours. Check the waterproofing by drop test for at least 20 to 30 minutes. If the treated surface does not absorb water, the waterproofing is successful.

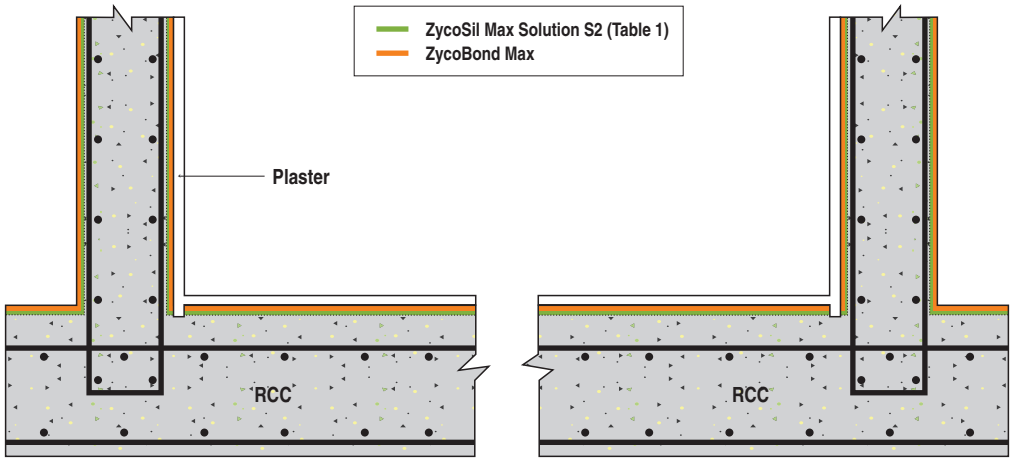
i. PCC Slab

1. Apply ZycoSil Max S2 (Table 1) on cured PCC to cover 15-20m^2 per kg.
2. Apply two coats of F3 (Table 2) on the treated PCC.

ii. RCC Slab

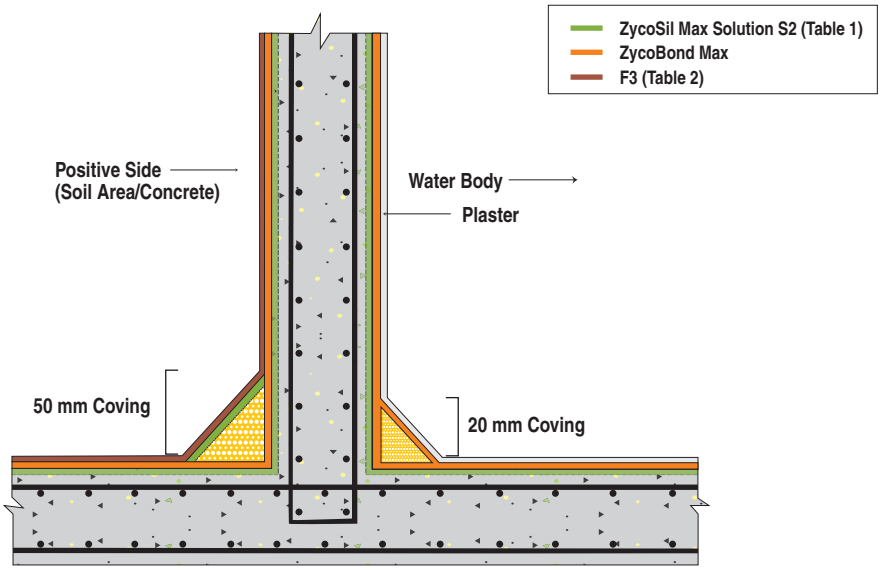
1. Carry ot 'surface preparation', 'defect rectification' and 'cold joints treatment'. (Sec. 3.1 & 3.2).
2. Apply ZycoSil Max solution S2 (Table 1) on horizontal surface.
3. Carry out Rilem Test on the treated dry surface to check for water absorption. (Sec. 4.1)
4. Check for waterproofing efficacy by Water Ponding test (Sec. 4.3)
5. Carry out core packing waterproofing. (Sec. 3.3).

iii. Walls: Both surfaces of the underground water bodies are considered as positive sides since both the surfaces need to withstand water pressure. Follow the procedure of 'surface preparation', 'defect rectification' and 'cold joints treatment'. (Sec. 3.1 & 3.2)



SWIMMING POOL/SEWAGE TREATMENT PLANT (STP) AND OTHER WATER BODIES - RCC SLAB

iv. Outside And Inside Vertical Wall Treatment for STP and other water bodies



VERTICAL WALL

1. Carry out 'surface preparation', 'defect rectification' and 'cold joints treatment' (Sec. 3.1 & 3.2).
2. Apply ZycoSil Max solution S5 (Table 1) to saturation on the vertical surface.
3. Carry out Rilem Test on the treated dry surface to check for water absorption. (Sec. 4.1)
4. Blow the dust and clean the surface with water and allow it to dry.
5. **Outside walls:** Apply a single coat of ZycoBond Max followed by two coats of F3 (Table 2) on the wall to ensure protection against damage during back filling with soil.

6.Coving:

a. Apply ZycoSil Max solution S2 (Table 1) on all sides of the junctions of PCC and vertical RCC wall.

b. Apply a single coat of ZycoBond Max up to 100 mm on vertical and horizontal surfaces for coving. Then do 50 mm X 50 mm coving using F1 (Table 2). Apply ZycoSil Max solution on the coving area.

7. **Inside walls:** Apply ZycoSil Max solution S2 (Table 1). Allow it to dry, apply one coat of ZycoBond Max followed with plaster.

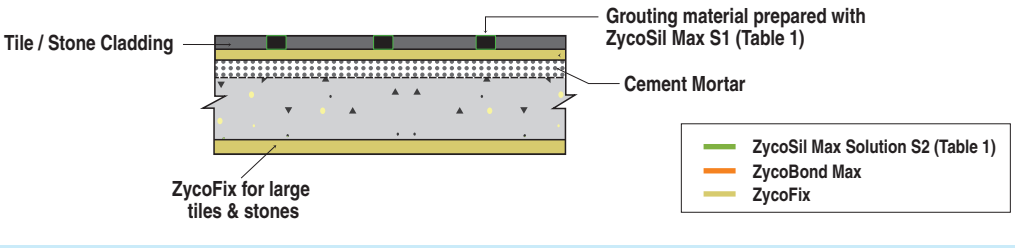
Coving:

a. Apply one coat of ZycoBond Max up to 100 mm on vertical and horizontal surfaces for coving. Check for waterproofing efficacy by a Water Ponding test. (Sec. 4.3)

b. Then do 20 mm X 20 mm coving using F1 (Table 2) and allow curing.

c. Apply ZycoSil Max solution S2 (Table 1) till saturation on the coving area.

6.5 Tiling/Cladding



TILING/CLADDING

Do tiling or cladding as per specification. Seal the joints with specified grout material prepared with ZycoSil Max solution S1 (Table 1).

Specifications

ZYCOFIX GRADE	SOLIDS	APPLICATIONS
Regular	11 ± 1%	Strong bonding for Small Tiles upto 0.25 m^2 size
Super	17 ± 1%	Strong bonding for Large Tiles up to 2 m^2
Ultra	35 ± 1%	Strong bonding for Stones up to 4 m^2 size

Application area & method

ZycoFix Regular (small tiles up to 0.25 m^2):

- Apply (Brush or Spray) ZycoFix Regular on the reverse side of the tile and let it dry for 15-30 minutes.
- Apply 2 to 4 mm mortar (1:2 cement and sand mix) layer on the plastered cementitious surface on which the tile is to be fixed.
- Immediately fix the tile on the surface where mortar has been applied.

  Allow a curing period of 28 days under normal weather conditions for best results.

ZycoFix Super (large tiles up to 2 m^2):

- Apply (Brush or Spray) ZycoFix Super on the reverse side of the tile and let it dry for 15-30 minutes.
- Apply ZycoFix Super on the plastered cementitious surface on which the tile is to be fixed. Let it dry for 15-30 minutes.
- Apply 4 to 6 mm mortar (1:2 cement and sand mix) layer on the plastered cementitious surface on which the tile is to be fixed.
- Immediately fix the tile on the surface where mortar has been applied.

  Allow a curing period of 28 days under normal weather conditions for best results.

ZycoFix Ultra (for large tiles / stones* up to 4 m²):

- Apply (Brush or Spray) ZycoFix Ultra on the reverse side of the tile and let it dry for 15-30 minutes.
- Apply ZycoFix Ultra on the plastered cementitious surface on which the tile is to be fixed. Let it dry for 15-30 minutes.
- Apply 6 to 8 mm mortar (1:2 cement and sand mix) layer on the plastered cementitious surface on which the tile is to be fixed.
- Immediately fix the tile on the surface where mortar has been applied.
- Allow a curing period of 28 days under normal weather conditions for best results.

** For highly porous stone, apply one coat of Elastobar on the back side of the stone, allow it to dry for 6-8 hours. Then apply ZycoFix Ultra on Elastobar treated surface.*

DO NOT MIX ZYCOFIX WITH CEMENT

Coverage

3.5 - 4 m² (40-45 ft²) per kg.
(Coverage may vary depending upon surface roughness & porosity)

ABOUT ZYDEX

Established in 1997, Zydex is a specialty chemicals company with the purpose of innovating for sustainability.

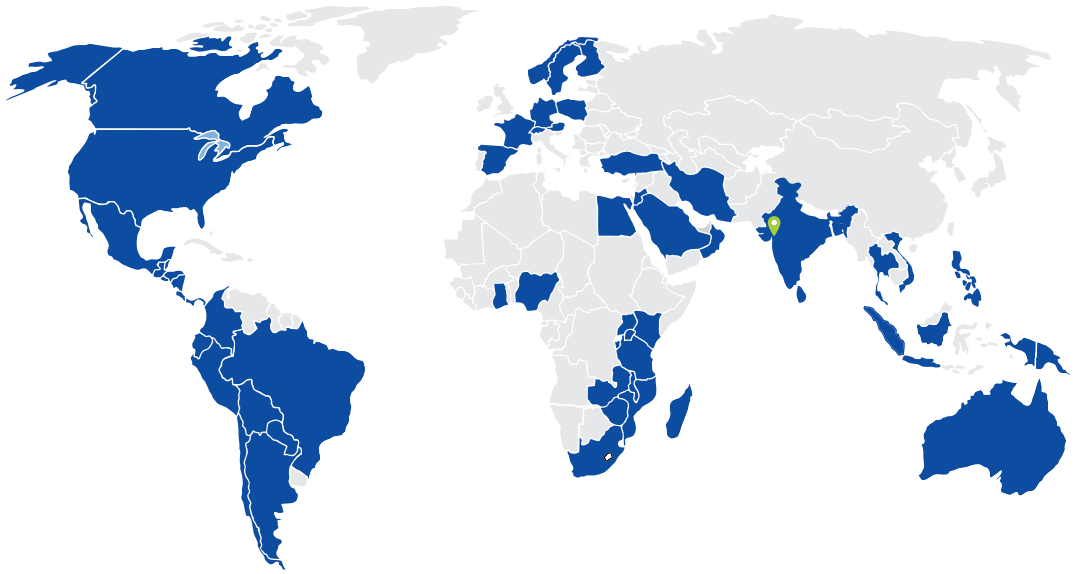
Beyond construction products, Zydex offers a diverse set of chemical technologies for the textile, agriculture and pavement industries. We were recently recognised as one of the 25 Most Innovative Companies in India by the Confederation of Indian Industry (CII).

Sustainable Green Chemistry

Zydex is deeply committed to sustainable chemistries that ensure a greener future for everyone. Our commitment has made us a pioneer in introducing non-polluting and non-hazardous technologies that conserve, protect and enhance the environment. Pursuing chemical innovations that would mean a greener, purer and more resource renewable world is our passion. Our technologies have been recognized for their contribution to sustainability and globally accepted.

CII INDUSTRIAL INNOVATION AWARDS 2018 — *25 Most Innovative Companies of India*

GLOBAL PRESENCE



Zydex
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