

ZYCOSIL[®]+

Penetrative Waterproofing



100% Silane



Eco-Friendly



Long Life

Complete Waterproofing System for Buildings and Structures



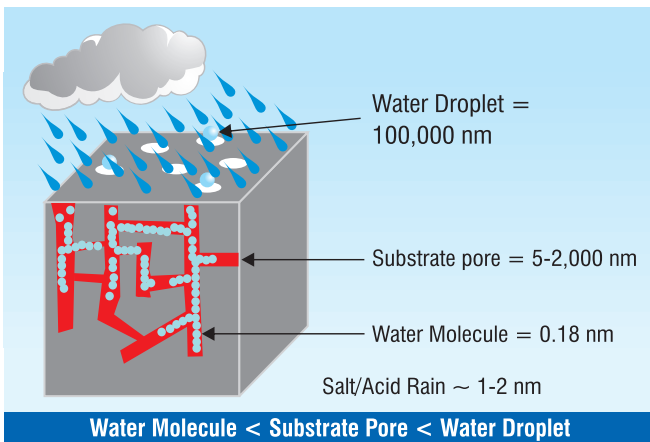
Zydex[®]

WATER

The Great Destroyer

BUILDING MATERIAL DETERIORATION

Cement Structures can absorb water over 11 ltrs per sq. m., while concrete blocks can absorb upto 22 ltrs per sq. m. in 6 hours, during 32 km per hour wind driven rain. Rain water enters into structures and causes aesthetic and structural damages.



Structural Damages

Cement loses its strength due to:

- Alkali Silica Reaction (ASR)
- Carbonation
- Freeze - Thaw

Corrosion of Reinforced Steel Bars

- Cracking due to ductility loss and volume expansion

Conventional waterproofing materials & repellents give short term protection by forming a surface film which is vulnerable to UV radiation, heat and abrasion. Long term protection solutions require a combination of permanent silane modification of concrete with reinforced bitumen membrane.



Concrete Ageing



Cracks



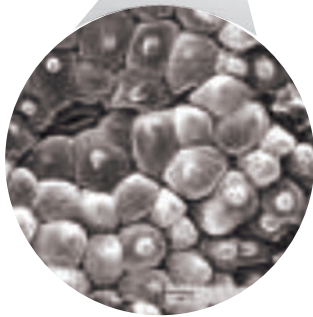
Corrosion



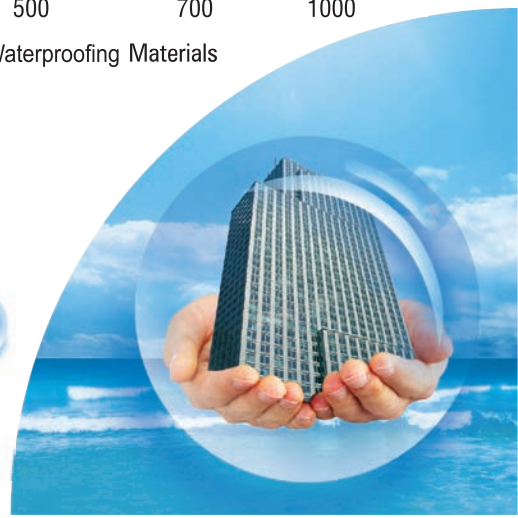
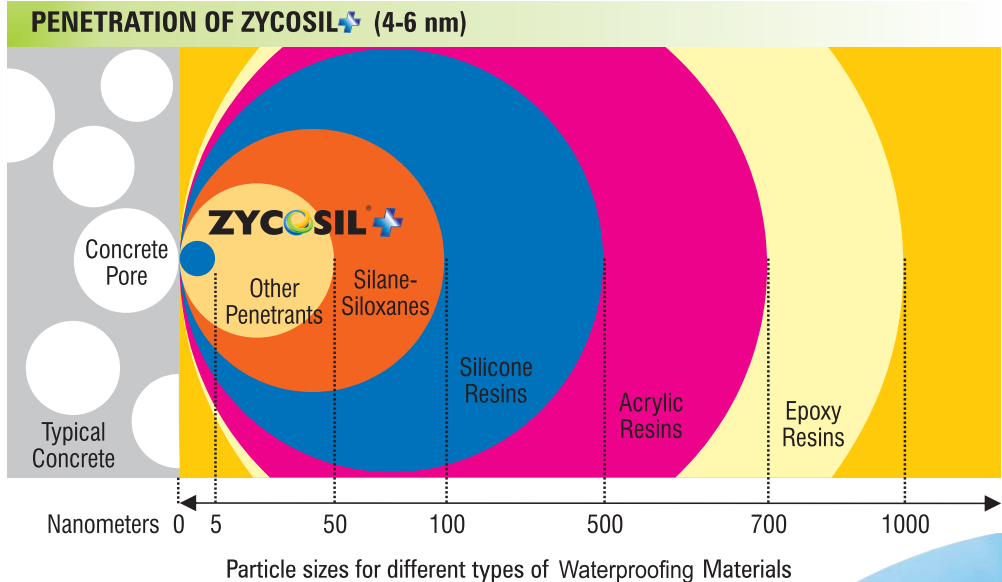
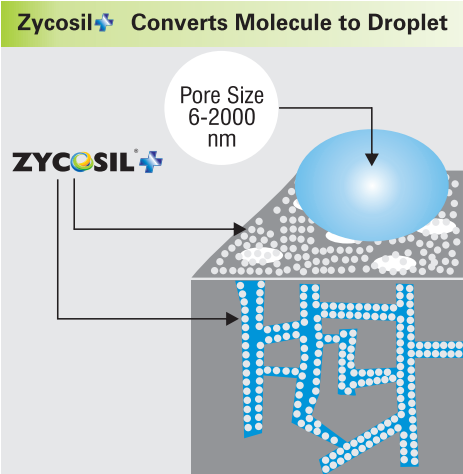
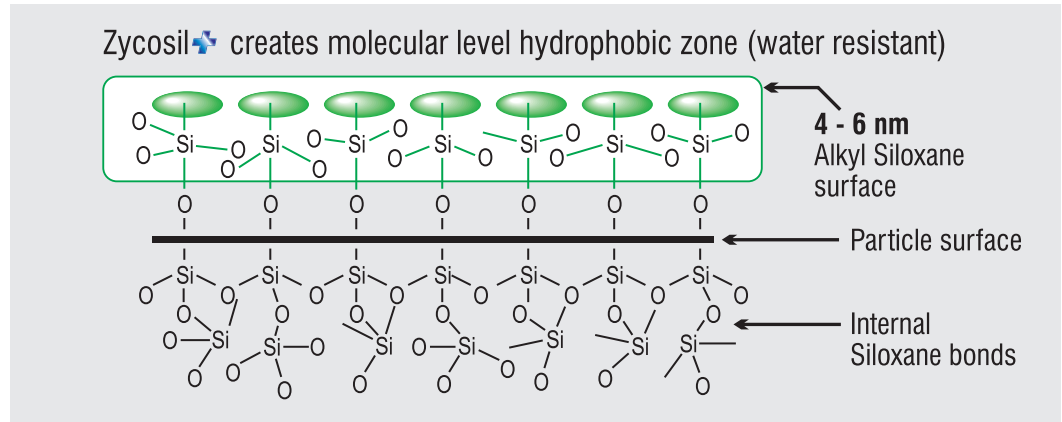
ZYCOSIL⁺ is 100 % Organo Silane, eco friendly, water soluble nanotechnology. It is reactive waterproofing with penetration upto 2 mm into concrete pores / cementitious surfaces offering 360° envelope and creates an impervious monolithic membrane to eliminate seepages.

It is inspired by nature's nanotechnology and mimics the lotus leaf.

ZYCOSIL⁺ CHEMICAL ACTION



Nano Hydrophobes that breathe





Chemically reactive, water soluble, breathable Nanotechnology

Forms Si-O-Si Siloxane bond by nano siliconization of surfaces (Mother nature's strongest bond for centuries)

Penetrates upto 2 mm in concrete pores / cementitious surfaces, forms Monolithic Structural Membrane

Makes soil layer (25 – 50 mm) impervious to water to prevent capillary rise

UV and Heat stable



Excellent bonding to the Zycosil+ treated surfaces (6 hrs Boil Test)

Forms In-situ, seamless modified bitumen membrane (without fillers)

Elongates 300-400%, bridges micro cracks

Excellent bonding to StretchFab (6 hrs Boil Test)



Stretchable fabric

Reinforces ZMB60 to make "Reinforced, flexible, bonded bitumen membrane"



Acrylic co-polymer emulsion-Bonding Agent for cement mix to Zycosil+ / ZMB60 surface

Ensures excellent bonding of reinforced membrane to screed plaster

Forms In-situ polymer cement membrane (Zycoat)

Makes strong bonded rich mortar for coving (Zycomix)

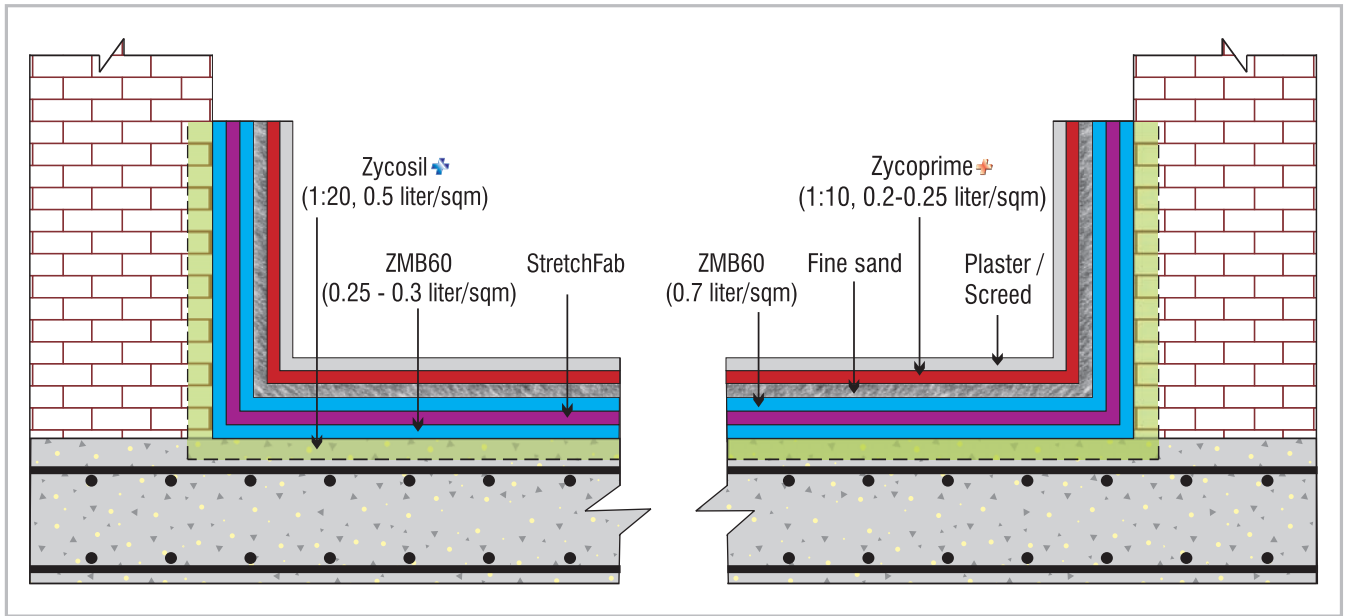




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- 1 **Surface Preparation** : Clean the surface by chipping and removing loose cement mortar. Remove laitance by grinding. Clean dust by air blower / industrial vacuum cleaner, followed by high pressure water-jet cleaning. Allow surface to dry. Clean the surface again with vacuum cleaner.
- 2 Spray Zycosil  (1:20) @ 0.5 liter / sqm.
- 3 Apply ZMB60 (0.25 - 0.3 liter / sqm) wet on wet / semi dried surface.
- 4 Lay Stretch Fab on ZMB60 wet on wet and roller press the fabric. Dry overnight.
- 5 Brush apply ZMB60 (0.5 ltr/sqm) on the dried StretchFab. Do final finish with ZMB60 (0.2 ltr / sqm) wet on wet for pin hole free reinforced bitumen membrane. Dry for 2 hours, preferably over night.
- 6 Spray sand (30 mesh above) for tack free bitumen surface.
- 7 Spray Zycoprime  (1:10) 0.2 - 0.25 liter / sqm on the sanded waterproofed membrane for superior bonding to plaster / cement screed.
- 8 Do Screed Plaster as required and cure for 5 – 7 days.
- 9 Confirm waterproofing with water ponding test after complete drying.
- 10 Use Zycoat / Zycomix for coving / beam joints / cold joints / cracks / corners.

Zycoat - for cracks, joints & corners

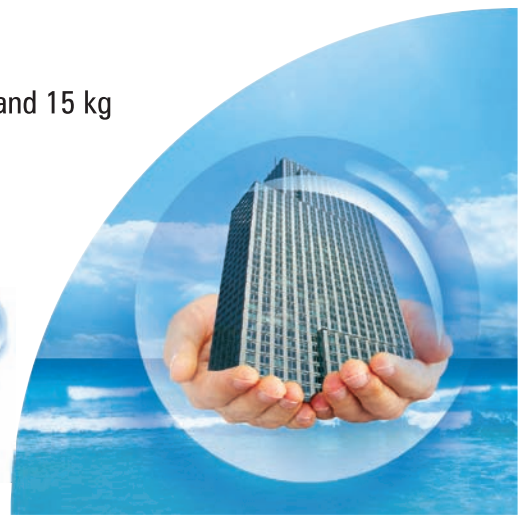
Add Zycoprime  1 ltr (water as required) to the mix of cement 1 kg & sand / silica (100 mesh) 1 kg and mix manually / mechanically. Sun Dry ($\geq 25^{\circ}\text{C}$) for 6-12 hours.

Coverage: 4-5 m² for a 0.2 mm (200 micron) coat.

Zycomix - for Coving

Add Zycoprime  1 ltr & Water 2.5 ltrs. to the mix of cement 5 kg & sand 15 kg and mix manually / mechanically. Use the mixture for smooth coving

Coverage: 9 running meters for 25mm x 25mm size coving.



BOND STRENGTH CONFIRMATION

Boil test confirms the bonding / strength of bitumen membrane to screed plaster even after 6 hrs boiling in the above double barrier waterproofing system.



← Boil Test

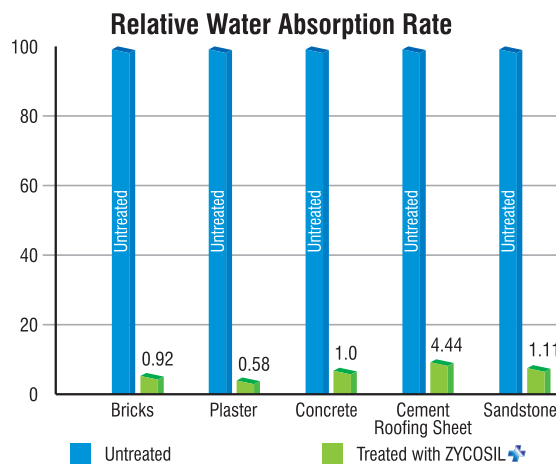


No Debonding →

QUALITY CONTROL TESTS

i) RILEM TEST

Affix Rilem tube on substrate's surface & fill water column up to 5ml. Water absorption of less than 0.2 ml in 20 minutes confirms acceptable waterproofing. The water column pressure in RILEM test is equivalent to the pressure generated by 140 Km/hr wind driven rain.



ii) SCRATCH / ABRASION TEST

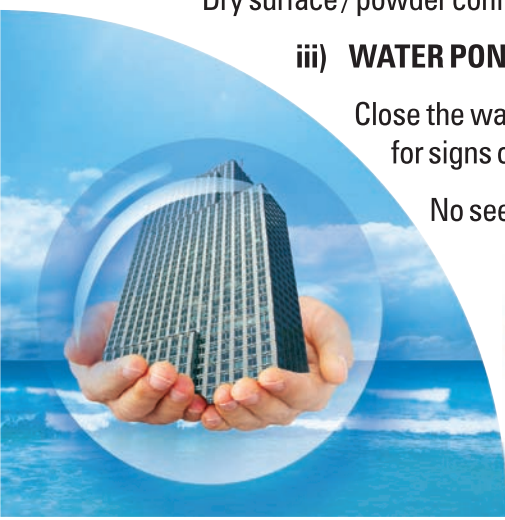
Scratch 0.5 to 1 mm Zycosil+ treated surface with a blade /knife. Put a drop of water on the scratched surface as well as on the scratched powder material.

Dry surface / powder confirms waterproofing.

iii) WATER PONDING TEST

Close the water outlets of the test area and fill it upto 50 mm height of water and observe for signs of seepage or leakage for 24 - 48 hours.

No seepage or leakage confirms waterproofing.





APPLICATIONS

Basements, Elevator pits, Podiums, Toilets, Balconies, Utility Areas, Terraces, Overhead Tanks, Swimming Pool/STP etc.



TECHNICAL SPECIFICATIONS

| PARTICULARS | ZYCOSIL [®] + | ZMB60 Modified Bitumen for Membrane | Zycoprime [™] + |
|--------------------|------------------------|--|---------------------------------|
| Appearance | Pale Yellow liquid | Black liquid | Milky white free flowing liquid |
| Viscosity at 25 °C | 20 - 100 cps | 50 - 500 cps | 10 - 100 cps |
| Specific gravity | 0.91 ± 0.02 | 1.01 ± 0.02 | 1.03 ± 0.02 |
| Flash Point | Flammable 12 °C | Water based, Non flammable | Water based, Non flammable |



PACKAGING

| STRETCH [™] Fab | ZYCOSIL [®] + | ZMB60 Modified Bitumen for Membrane | Zycoprime [™] + |
|---------------------------------------|------------------------|--|--------------------------|
| 0.4 mtrs wide rolls, 250 meter length | 1 / 5 / 20 ltrs. | 20 / 200 ltrs. | 1 / 5 / 20 ltrs. |



STORAGE

Store under shaded area away from direct sunlight between 5°C to 45°C. Keep away from heat, ignition / sparks and from rain / standing water. Prevent the products from freezing.

Keep the container of Zycosil⁺ tightly closed after every withdrawal (product can start reacting with moisture in the ambient air) when not in use.

ZMB60 will settle on standing. Therefore STIR WELL before use or roll drums. The longer it stands, the more it will settle.

SHELF LIFE

Zycosil⁺, Zycoprime⁺ : 24 months when stored as recommended
ZMB60 : 6 months when stored as recommended

Disclaimer:

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendation made by us, our representatives or distributors, as the conditions of use and the competence of labor involved in the application are beyond our control.





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