

# ZYCOTHERM

**ZycoTherm (ZT)** is an organosilane additive to bitumen binder, to be added before bitumen is mixed with aggregates to produce HMA. ZT makes the pavements resistant to:

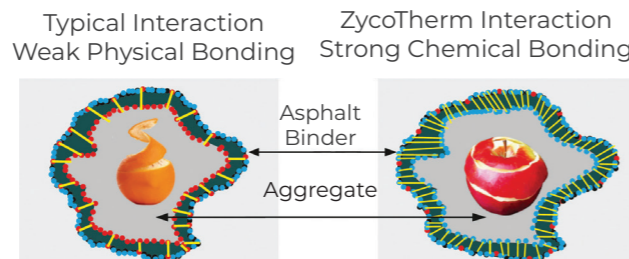


- Moisture, as it promotes chemical bonding at the aggregate interface
- Oxidation, as it enables complete coating
- Fatigue loads, as it facilitates consistent compaction while paving

**MOREOVER, ZT ALSO ALLOWS LOWER MIXING TEMPERATURE (BY 10-15 ° C) AND LOWER COMPACTION TEMPERATURE (BY 30-40 ° C), MAKING ZT AN ENVIRONMENTALLY FRIENDLY WARM-MIX, WARM COMPACTION BITUMEN ADDITIVE.**

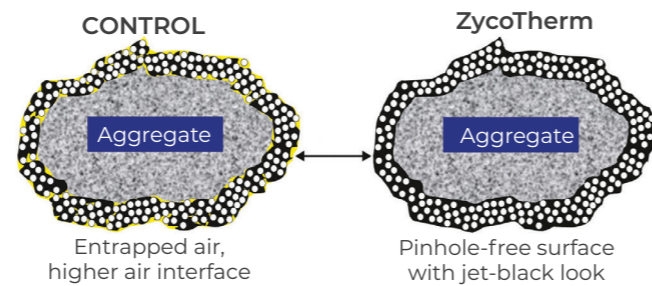
## MOISTURE RESISTANCE THROUGH CHEMICAL BONDING

- ZT ensures nano modification of aggregate surface from water -loving to bitumen-loving
- Permanent chemical bonding at the aggregate interface leads to excellent anti-stripping performance
- No raveling
- Pothold free pavements.



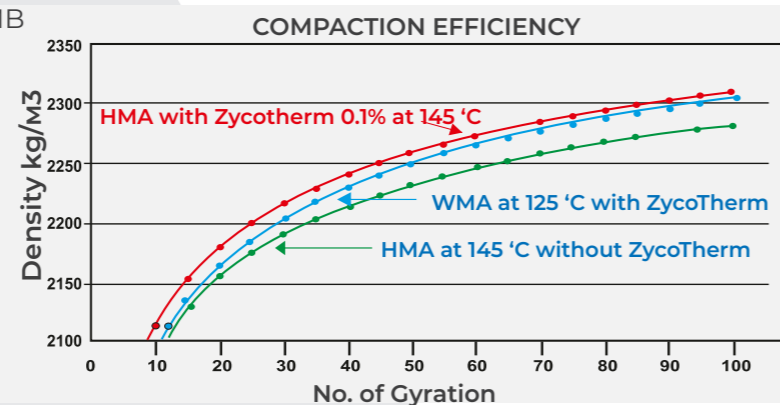
## OXIDATION RESISTANCE THROUGH COMPLETE COATING

- 100% coating of aggregates with 30-40% lower mixing time
- Complete coating of fines ever below 75 micron
- Blacker, glossier looking HMA due to improved coating
- Easy mixing at lower temperature, leading to energy saving
- Tanks and equipments remain clean



## FATIGUE RESISTANCE THROUGH CONSISTENT COMPACTION AT LOWER TEMPERATURE

- Improved flow & workability of the mix at lower temperature
- Excellent workability even with SBS / PMB / CRMB
- Excellent fiber distribution in SMA mixes
- Eliminates rock pockets
- Extended paving season
- Longer hauls



## TYPICAL DOSAGE

- 0.03 - 0.1 % by weight of the bitumen binder

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# VANTAGE GROUP

NANOTECHNOLOGY FOR WATERPROOFING OF CONCRETE AND ROAD PAVING



**ZycoTherm**  
**ZYCOSIL+** **NANO TAC**

### VANTAGE GROUP

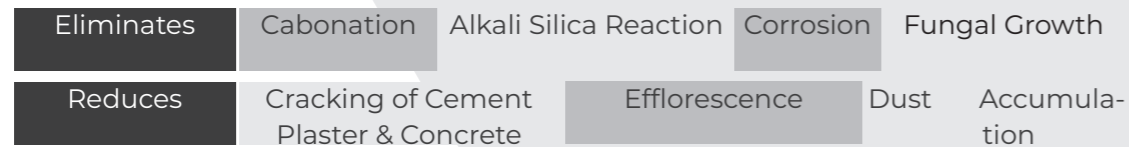
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VANTAGE GROUP IS AN AUTHORIZED DISTRIBUTOR OF **Zydex** PRODUCTS IN SE ASIA

# ZYCOSIL



Innovative Solutions ofr Structure Protection & Aesthetics Enhancement.



## 360° Water Resistant Envelope

### DESCRIPTION

Zycosil is a breathable 100% Reactive Organosilane Nano water repellent. When applied on a siliceous substrate, it penetrates deeply inside the substrate and become an integral part of the structure.

It converts a water absorbinf surface into a water repellent one.

Zycosil is water dilutable, safe, sprayable, and easy to apply. Zycosil is permanent, non-leachable & UV resistant.

### MECHANISM OF ACTION

Zycosil penetrates deeply into substrates and converts to siliceous surface to an alkyl siloxane (water resistant) surface. Complete drying is critical to complete the reaction and achieve water resistance. Zycosil will ensure that water molecules do not penetrate the pores of the treated surface.

### APPLICATION METHOD

The sustrate should be cured, dry, free from voids (honey combs). For substrates with oil, grease, fungal growth, etc, clean and dry surface thoroughly before application.

Zycosil should be diluted with potable water (TDS < 1000 ppm) at a ration of 1:20. A translucent to transparent solution will be obtained. The diluted solution should be liberally sprayed till saturation.

On vertical surfaces apply Zycosil from bottom to the top to eliminate drip marks. For doing any screeding / Plastering / Tiles / Paint work on the treated surface, ZYCOPRIME (Acrylic Bonder) must be added to the Zycozil Solution

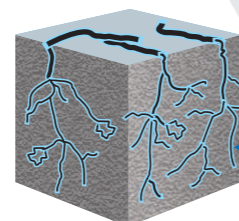
### SPECIFICATION

From	Pale yellow clear liquid
Viscosity at 25 °c	< 100 cps
Specific gravity	0.91 ± 0.01
Flash point	85 °C
Odour	Low odour
Solubility (in Water)	Easily soluble
PH	Approx 6 ± 1
Dilutant	Clean potable water TDS < 1000 ppm, pH – or 6.5 to 7

### Coverage (per litre)

Horizontal	24-40 M2
Vertical	60-100 M2

Zycosil in Micro Cracks



Zycosil treated water resistant surface



# NANOTAC

Nanotac is an organosilane additive to Cationic Bitumen Emulsion (CBE) for tack coat application.

it improves the flow and spray quality of emulsion. It can also make the tack coat waterproof.

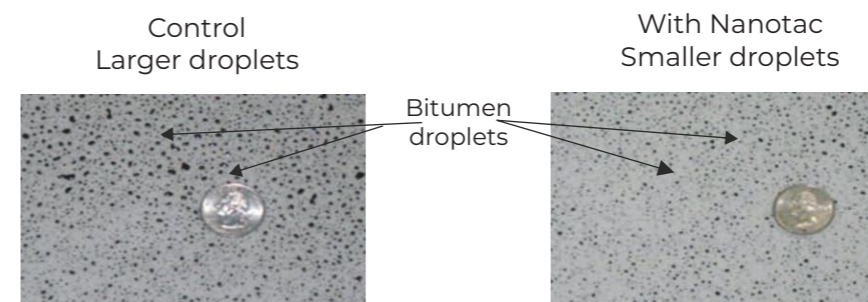
Tack coat with Nanotac sets in 15 to 30 minutes with substantially reduces tracking.

Nanotac also substantially improves the bond strength, even at lower residual bitumen.



- Chemical bonding
- Higher bond strength
- Waterproofing
- Finer spray leading to improved coverage
- Uniform load transfer due to 100% coverage
- Reduced slippage
- Quick setting
- Nozzle clogging eliminated
- Reduce tracking
- Zero volatile emissions

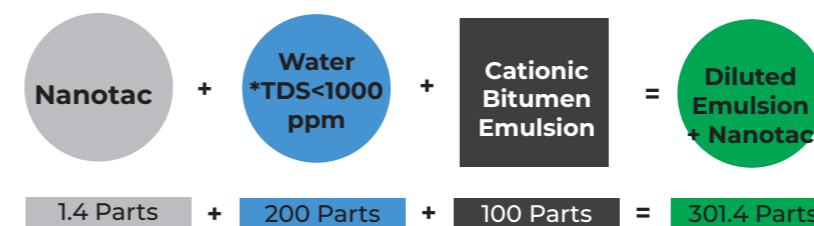
### FINER DROPLET SIZE & QUICKER ABSORPTION



### NOZZLE CLOGGING ELIMINATED

CONTROL	PARAMETER	WITH NANOTAC
60 °C	2-3 hours	Reduced
Poor	heating time to get 40-50C	Improved
Clogged	Stability of emulsion	Clean
Streaky	Nozzles	Uniform
	Spray	

### MIXING & DOSAGE



Spray rate of diluted emulsion + Nanotac should be as follows:

- For new / old surface : 0.35 - 0.40 kg per sqm
- For milled surface : 0.45 - 0.55 kg per sqm

Mixing of Nanotac and water; and this solution with Bitumen Emulsion, must be done under circulation.