

**Zydex<sup>®</sup>**

The Silane  
Nanotechnology  
for Penetrative  
and Reactive Bonding



**NANOTAC**

Ultimate Bonding, Without Tire "Pick Up"

# NANOTAC

Tack Coat is applied to ensure bonding between existing and incoming new asphalt layers. Tack coats eliminate slippage and debonding of pavements and allow the transfer of stresses in the monolithic structure.

However water based emulsion tack coats, suffer from typical issues of tire 'pick up' by construction vehicles, clogging of nozzles, non-uniform and inadequate coverage (poor wetting), water permeation and water sensitivity. This is due to inadequate cleaning of dust/ dirt and resultant bond failures.

## NANOTAC

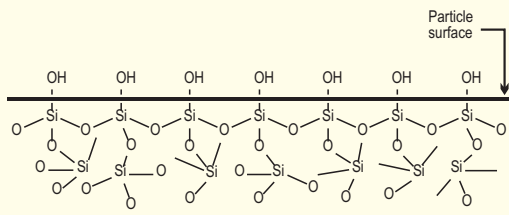
Nanotac is new generation reactive 100% organosilane nanotechnology. It has excellent wetting, sets quickly and eliminates tire pick up.

### FEATURES

- Makes tack coat water resistant and penetrative
- Converts water loving dust/ dirt/ aggregates to asphalt loving surfaces for excellent bonding
- Improves stability and lowers surface tension of cationic bitumen emulsion

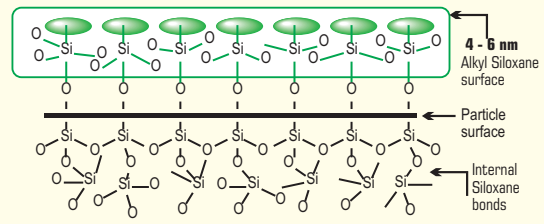
## THE CHEMICAL ACTION

-OH groups make surface very hydrophilic (water loving)



Untreated Stone / Dirt / Dust / Aggregate

Nanotac creates molecular level hydrophobic zone (water repellent)



Treated with Nanotac

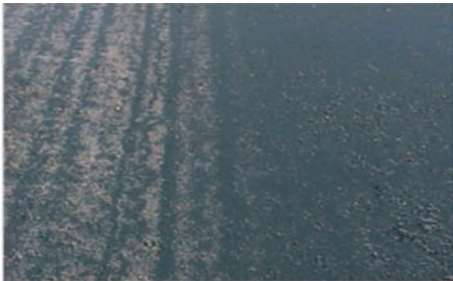
## BENEFITS

### WATER RESISTANCE

Nanotac converts water loving dust / dirt / aggregates to asphalt loving surfaces and ensures excellent bonding and water resistance

### WETTING, PENETRATION & SURFACE COVERAGE

Lowers surface tension of cationic bitumen emulsion, increases wetting and ensures complete coverage



Without Nanotac - Poor Wetting



With Nanotac - Excellent Wetting & Coverage

### CLEAN NOZZLES

Keeps nozzles clean by improving stability of cationic bitumen emulsions and ensures uniform spraying at room temperature. Saves time and energy since heating of the emulsion is not required



Without Nanotac - Result of Clogged Nozzles



With Nanotac - Clean Nozzles, Uniform Spray

## OPTIMIZES BITUMEN

Allows substantial reduction in asphalt thickness due to better wetting & spraying

## NO TIRE PICK UP

Wets, penetrates and sets quickly (5 – 10 minutes), reduces tackiness on the surface to eliminate tire pick up



Without Nanotac: Tire Pick Up



With Nanotac: No pick up just 15 minutes after application



With Nanotac: No pick up just 15 minutes after application

## MIXING PROCESS

- Start re-circulation of cationic bitumen emulsion
- Add water followed with Nanotac, continue re-circulation for 10-15 minutes
- Spray the mix

## DOSAGE

Bitumen Emulsion mix	Cationic Bitumen Emulsion (60%) (Kg)	Water (Liter)	Nanotac (Kg)	Total (Liter)	*Asphalt Content (%)
Conventional	3000	3000	0	6000	30
Nanotac	1500	4500	45	6000	15
Nanotac	1000	5000	50	6000	10

\* A 10 micron thickness requires only 2% residual asphalt content



## TECHNICAL SPECIFICATION

Particular	Nanotac
Appearance	Clear to Pale Yellow
Solid Content	41 +/- 2%
Solvent	Ethylene Glycol
Flash Point	80 °C
Viscosity (25 °C)	200 - 800 cps
Solubility	Soluble in cationic bitumen emulsion

## PACKAGING

Nanotac is available in 20 kg Carboy.

## STORAGE

Store under shaded area, away from direct sunlight. Recommended storage temperature is 10 °C to 45 °C. Keep away from heat, ignition / sparks source and from rain / standing water.

Even after freeze-thaw condition the product can be used with the same performance.

Keep the container tightly closed after the first withdrawal (product can start reacting with moisture in the ambient air) when not in use, in a dry and cool place.

## SHELF LIFE

24 months when stored as recommended.





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