

# Odor Free Antistrip and Warm Mix Technology



## ZycoTherm

ZycoTherm is a next generation antistrip additive with the additional benefit of warm mix asphalt (WMA). It is compatible with all aggregate types and allows for improved adhesion of bitumen to aggregate at significantly lower dosage rates compared to conventional antistrips. ZycoTherm enables temperature reduction up to 30°C (60°F) during mix production and field compaction, and has benefits of Chemical Bonding, Complete Coating and Consistent Compaction.

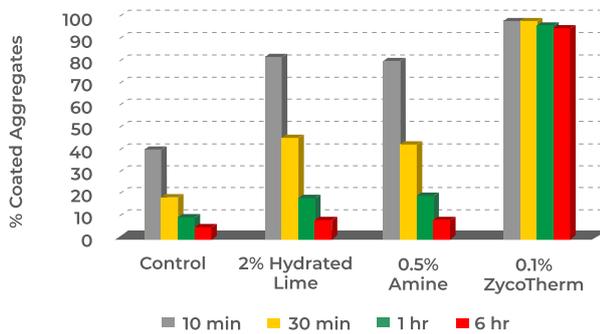
## BENEFITS

- ✓ Combined Antistrip and WMA
- ✓ Higher Incorporation of RAP
- ✓ Longer Hauls
- ✓ Excellent Compaction in Cold Climates
- ✓ Odor Free
- ✓ Extremely Low Dosage Rates
- ✓ Excellent Salt Tolerance
- ✓ Compatible with PPA, SBS & CRMB

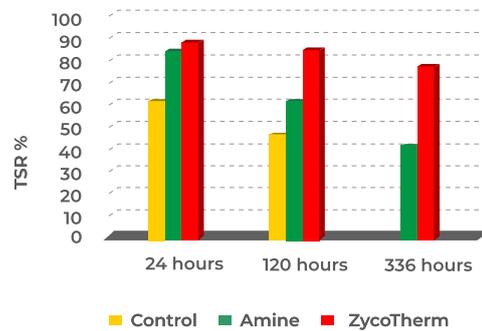
## CHEMICAL BONDING

Unlike conventional antistrips which form a weak physical bond between the aggregate and bitumen, ZycoTherm forms a permanent chemical bond with the aggregate and improved adhesion to bitumen. Due to the permanent nature of the chemical bond formed, there are significant gains with respect to moisture resistance, durability and overall life cycle costs for the pavement. ZycoTherm is compatible with all aggregate types, works at significantly lower dosages compared to conventional antistrips and is an environmentally friendly additive that is non-corrosive and odor free.

ASTM D 3625 BOIL TEST

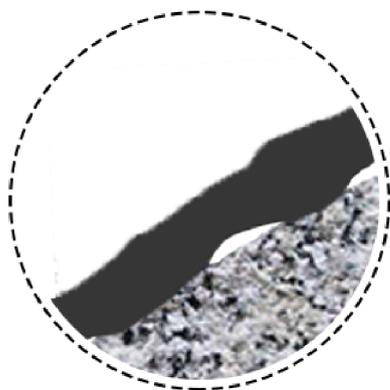


EXTENDED CONDITIONING TSR COMPARISON

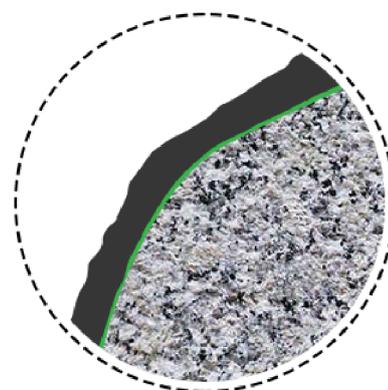


## COMPLETE COATING

ZycoTherm modified bitumen coats aggregate surfaces in a significantly faster and easier manner compared to conventional additives. The superior coating and wetting attributes of ZycoTherm ensure easy coating of fines, better mixing of RAP and jet black looking mixes. The complete coating of aggregates by ZycoTherm modified bitumen also leads to mixes that are free of pinholes and have reduced stripping and oxidative potential.



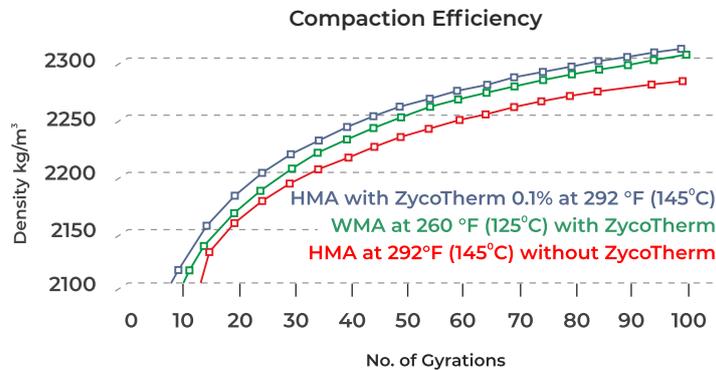
Without Zycotherm



With Zycotherm

## CONSISTENT COMPACTION

ZycoTherm provides excellent warm mix asphalt benefits and reduces production temperatures to as low as 135 °C (275 °F). Consistent and easy compaction can be achieved up to temperatures of 98 °C (210 °F), thereby enabling longer hauls and cold climate paving.



## DOSAGE

- The typical dosage range for ZycoTherm is 0.03 to 0.1% by weight of the bitumen binder. If aggregate type and characteristics are known, refer to the table below for indicative dosages. Adjust the same based on design mix testing.
- For modified binders (PMB / CRMB) or RAP / RAS mixes use 0.07 - 0.125% of ZycoTherm, (include extracted binder from RAP / RAS) to ensure easy workability

Adhesion Promoter		Aggregate Type	Warm Mix + Adhesion Promoter	
Aggregate Water Absorption %			Aggregate Water Absorption %	
< 1.4	1.5-2		< 1.4	1.5-2
0.03	0.05	Limestone, Dolomite	0.06	0.07
0.04	0.05	Basalt, Gabbro	0.07	0.1
0.05	0.05	Granite, Granodiorite, Rhyolite	0.07	0.1
0.07	0.1	Quartzite	0.1	0.1
0.07	0.1	Greywacke, Andesite, Sandstone	0.1	0.1

## ADVANTAGES

### Paving

- Reduced odor
- Improved workability and compaction efficiency
- Improved mix flow & cleaner equipments
- Elimination of mix segregation
- Dark black look
- Extended paving season

### Manufacturing

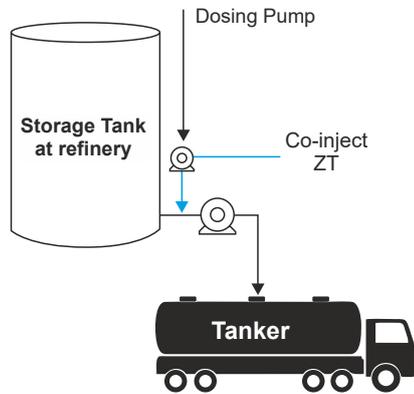
- Reduced odor
- Cleaner tanks, coils & elevators
- Cleaner flights of the mixing chamber
- Lower mix temperature & fuel economy
- Higher RAP/RAS

### Health and Environment

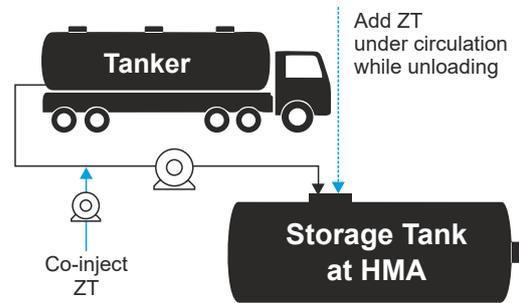
- Non corrosive
- Odor free
- Health rating 1
- TSCA Compliant
- REACH Compliant
- DSL Compliant

**BLENDED METHODS**

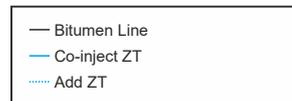
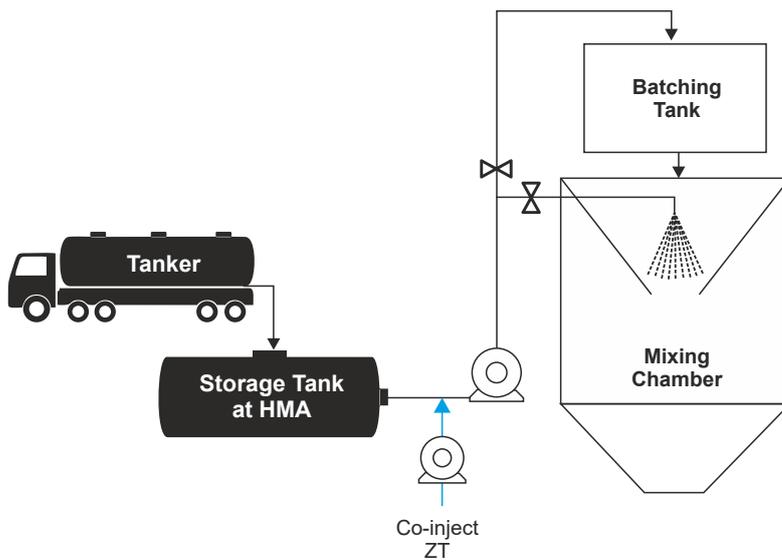
**At Terminal / Refinery**



**At Plant Storage Tank**



**In-Line Blending**



**STORAGE & SHELF LIFE**

Store ZycoTherm between 5° - 45 °C (41° - 113 °F) in a shaded, dry area away from sunlight, heat, source of sparks, rain and standing water. Fasten the container lid securely after every use. It's shelf life is 48 months. In case the product freezes at low temperatures, allow it to thaw and melt.

# OUR VISION



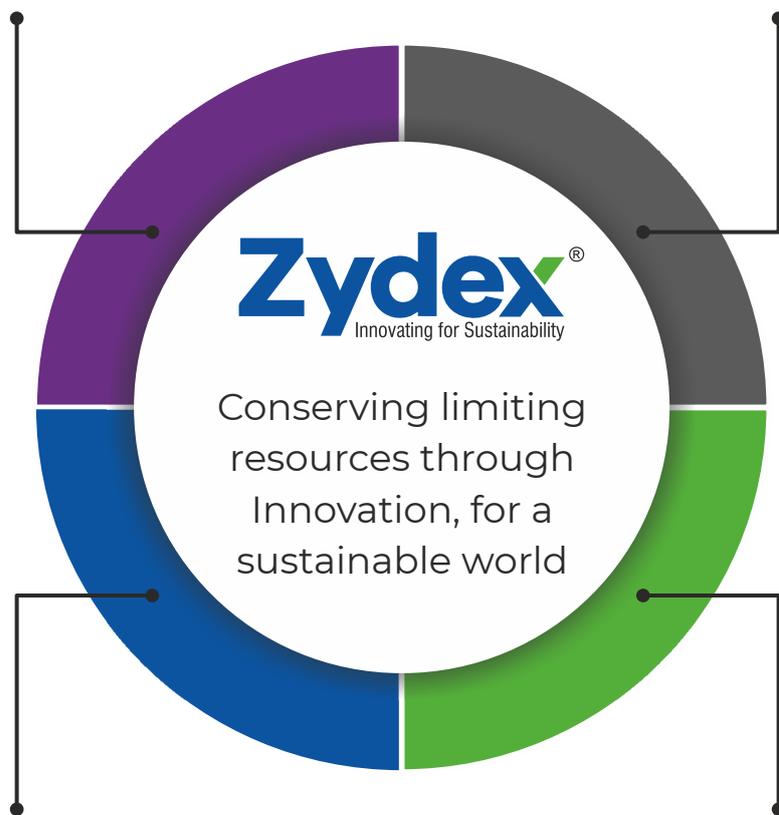
## Textiles

To be the most preferred high-performance textile processing solution provider globally, driven by eco-innovation aimed at conserving resources



## Roads

Innovating solutions for building climate-resilient and perpetual pavements



## Waterproofing & Paints

Innovating ultra-durable technology solutions for structural and aesthetic management of buildings, making them more sustainable



## Agriculture

Sustainable farming for nutritious, safe and affordable food for all

# EXCELLENCE



## Achievements

2001

- FGI award  
(Export excellence)

2013

- IRF Global Road  
Achievement Award  
(Innovation in Roads)

2014

- Marico Innovation Award  
(Innovation in  
Nanotechnology)

2018

- CII Innovation Award  
(Top 25 most innovative companies)

2011

- FGI award  
(Research in Science & Technology)

2014

- Inc India Innovation Award  
(Research category)

2016

- FGI Award  
(Best innovation in  
Agriculture Development)



## Certifications



Certified Company

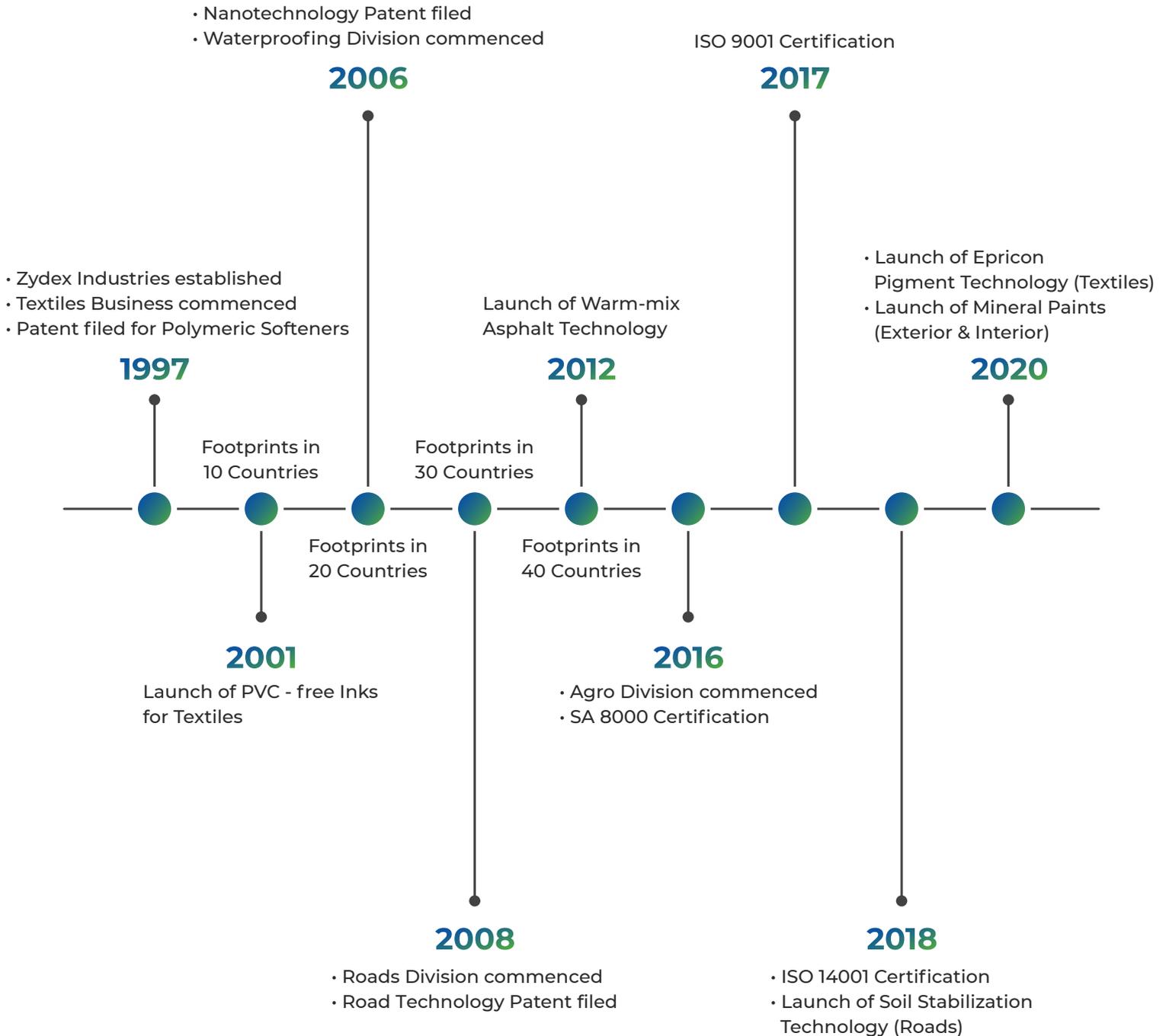


ISO 9001:2015



ISO 14001:2015

# JOURNEY SO FAR



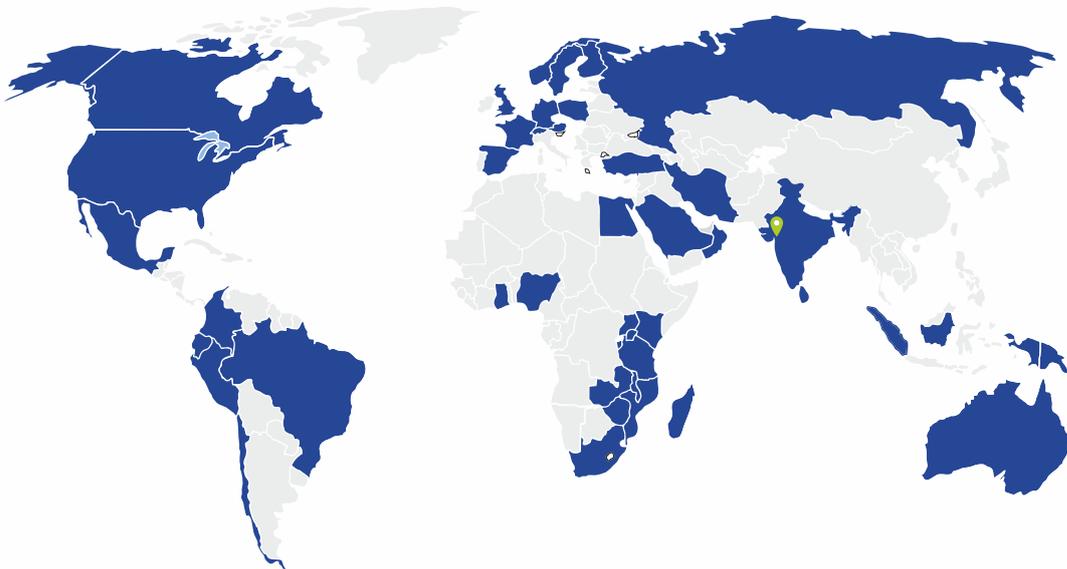
## ABOUT ZYDEX

Established in 1997, Zydex is a specialty chemicals company with the purpose of innovating for sustainability. We are committed to creating a sustainable world through innovative, environment friendly and patented technologies in the areas of **AGRICULTURE, TEXTILES, PAINTS & WATERPROOFING and ROADS**. Our product portfolio encompasses 200+ innovative solutions with presence in over 40 countries across the globe.

### Sustainable Green Chemistry

Zydex is deeply committed to sustainable chemistries that will 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 innovations that would mean a greener, safer and more resource renewable world is our passion. Our technologies have been recognized for their contribution to sustainability and are accepted globally.

## GLOBAL PRESENCE



Version No. VN05/22/2023