

Odor Free Antistrip and Warm Mix Technology



ZycoTherm-LS

ZycoTherm-LS is a next generation antistrip additive that creates a permanent chemical bond between aggregate and binder. It can be used exclusively as an adhesion promoter at hot mix temperatures or optionally be used as a combined antistrip and WMA additive. It is compatible with all aggregate types and operates at significantly lower dosage rates compared to conventional antistrips. ZycoTherm-LS optionally enables temperature reduction during mix production and field compaction, and has benefits of Chemical Bonding, Complete Coating and Consistent Compaction.

BENEFITS

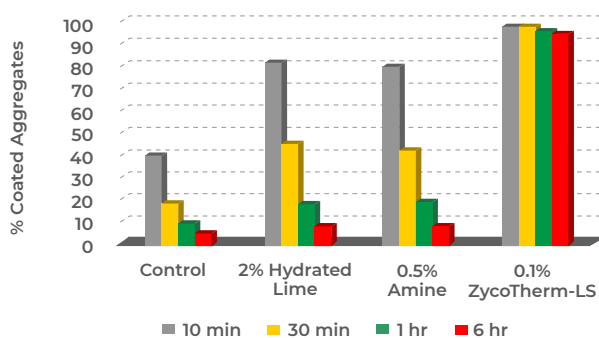
- ✓ Permanently bonded antistrip
- ✓ Optional use for lowering production and compaction temperatures
- ✓ Higher incorporation of RAP
- ✓ Longer hauls
- ✓ Excellent compaction in cold climates
- ✓ Non-toxic and odor free
- ✓ Extremely low dosage rates
- ✓ Excellent salt tolerance
- ✓ Compatible with PPA, SBS & CRMB

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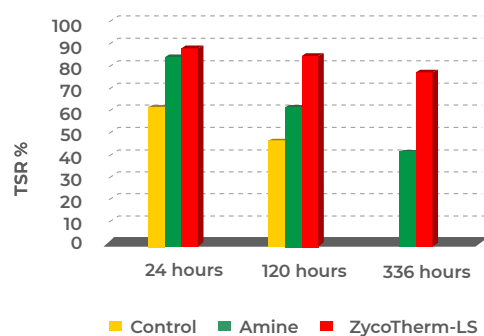
CHEMICAL BONDING

Unlike conventional antistrips which form a weak physical bond with the aggregate & ZycoTherm-LS forms a permanent chemical bond with the aggregate & enhanced bonding with 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-LS 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

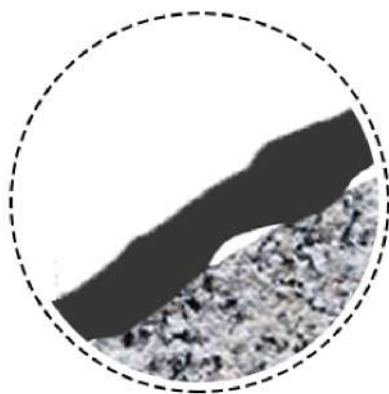


EXTENDED CONDITIONING
TSR COMPARISON

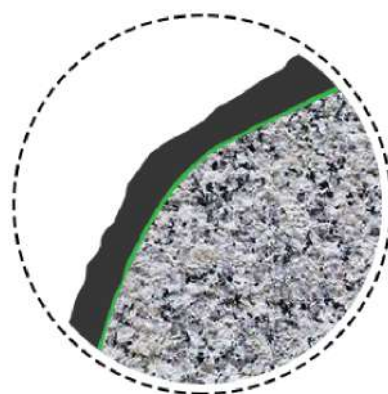


COMPLETE COATING

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



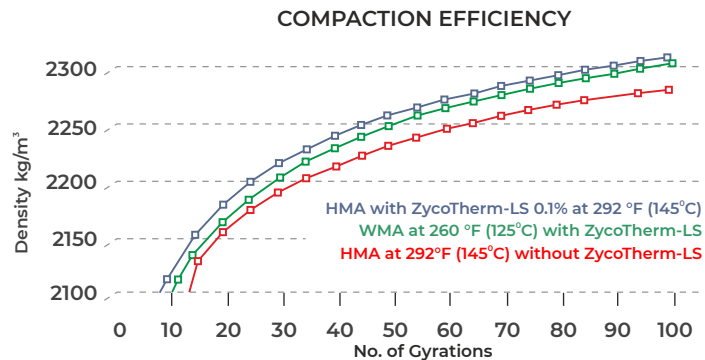
WITHOUT ZycoTherm-LS



WITH ZycoTherm-LS

CONSISTENT COMPACTION

While ZycoTherm-LS can be used as an adhesion promoter for hot mix asphalt, it also enables the option of reducing production temperatures while still enabling consistent and easy compaction. This helps enable consistent compaction in cold climate paving.



DOSAGE

- The typical dosage range for ZycoTherm-LS 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 mix testing.
- It is critical that ZycoTherm-LS be thoroughly mixed into the bitumen to ensure homogenous distribution of the product.

ZycoTherm-LS Dosage for Antistrip Benefits			AGGREGATE TYPE	ZycoTherm-LS Dosage for Antistrip and Warm Mix Benefits		
AGGREGATE WATER ABSORPTION %				AGGREGATE WATER ABSORPTION %		
0.5-0.8	0.9-1.4	1.5-2		0.5-0.8	0.9-1.4	1.5-2
0.03	0.03	0.05		Limestone, Dolomite	0.07	0.07
0.03	0.03	0.05	Basalt, Gabbro	0.07	0.07	0.1
0.03	0.05	0.05	Granite, Granodiorite, Rhyolite	0.07	0.07	0.1
0.03	0.05	0.1	Quartzite	0.1	0.1	0.1
0.03	0.07	0.1	Greywacke, Andesite, Sandstone	0.1	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 of 1
- TSCA Compliant
- REACH Compliant
- DSL Compliant

STORAGE & SHELF LIFE

ZycoTherm-LS should be stored 41 – 113 °F (5 to 45 °C) in a shaded, dry area away from sunlight, heat, source of sparks, rain and standing water. The container lid should be securely fastened every time it is used. It's shelf life is 48 months. In case the product freezes at low temperatures, allow it to thaw and unfreeze.

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



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