



Lake Asphalt
of Trinidad And Tobago (1978) Limited

PRODUCT BROCHURE



LAKE ASPHALT OF TRINIDAD AND TOBAGO (1978) LIMITED

Lake Asphalt in Profile

Lake Asphalt of Trinidad and Tobago (1978) Limited (Lake Asphalt) is a wholly state owned enterprise operating under the purview of the Ministry of Works and Transport. The Company is situated in Brighton, La Brea. Lake Asphalt is involved in the mining, processing and exporting of asphalt products for over one hundred years. It is a global organization with distributors and alliances in five of the seven continents of the world.

The Company processes and exports Trinidad Lake Asphalt (TLA) which is mined from the Pitch Lake in La Brea. TLA, a premium quality enhancer for refinery bitumen, is used in a number of applications worldwide, including the paving of some of the largest roadways, highways, bridge decks, racetracks and airport runways across the globe.

Apart from TLA, Lake Asphalt manufactures and markets a range of Cationic Bitumen Emulsions produced in its Bitumen Emulsion Plant. The Company is also a distributor of Refinery Bitumen.

Lake Asphalt also manufactures:

- TLA Coatings Range of Products - a range of coatings that use TLA as a base
- TLA Blend Asphalt Cement (AC) - a mixture of TLA and Refinery Bitumen

All of which are marketed locally and exported regionally and internationally.

Lake Asphalt is continuing its history of innovation through ongoing investment into its Research and Development capabilities.





Lake Asphalt Products

TRINIDAD LAKE ASPHALT (TLA)

TRINIDAD LAKE ASPHALT (TLA) is a unique bituminous, naturally occurring material, which provides performance - enhancing properties to binders and Hot Mix Asphalts (HMAs) in the asphalt industry.

TLA is the world's #1 Modifier of Refinery Bitumen.

Description

- It is a Natural Asphalt
- It is black and gives a matte grey colour to Hot Mix Asphalt when processed
- It comprises bitumen and naturally occurring mineral components

It acts as THE IDEAL MODIFIER to refinery bitumen, enhancing the performance characteristics of bitumen- based Hot Mix Asphalts (HMAs).

Behaviour

Trinidad Lake Asphalt (TLA) is considered to be a thermoplastic (viscoelastic) material. At ambient temperatures, it is actually a semi-solid or can be solid or can be classified as a gel-sol but appears completely solid on initial observation. However, if left outdoors, at ambient tropical and sub-tropical temperatures, it will slowly change shape and occupy the area in which it is kept.

The mineral presence PROVIDES IMPROVED RESISTANCE TO SKID and imparts stiffness to the binder.

The presence of the mineral material allows for a reduced amount of “fines” to be added in the generation of the Job Mix Formula (JMF) of the Hot Mix Asphalt (HMA).

Advantages of using TLA

- Increased life cycle of pavement (2.5 times over regular bitumen)
- The unique mineral component adds non-skid properties
- Increased stability and resistance to permanent deformation
- Decreased rate of aging
- Improved surface friction
- Higher cracking resistance
- Increased fatigue resistance
- Ease of pigmentation
- Greater durability and better full-life cost performance
- Improved pavement load carrying
- A light coloured, safer surface
- Provides structural and durability improvements which lead to extended pavement life.

TLA Uses

- Airport and Seaport Terminals
- Bridge decks
- Truck lanes (heavy and high traffic areas)
- Highways
- Tunnels
- Roofs
- A variety of protective coatings

PACKAGING:

Trinidad Lake Asphalt is packaged in 230 kg fire-board drums and shipped internationally in 20' and 40' containers.



Trinidad Lake Modified Asphalt

60/75 Asphalt Cement (60/75 AC)

Trinidad Lake Modified Asphalt is a modified asphalt binder used to bind aggregates together to form the asphalt pavement.

Manufacturing Process:

Produced by the proportionate blending of 180/200 refinery bitumen, a heavy oil residue resulting from the refining of crude petroleum, with the world's #1 modifier of Refinery Bitumen, naturally occurring Trinidad Lake Asphalt (TLA).

Other Names: AC, TLAC, Trinidad Modified Asphalt (TMA), Trinidad Lake Asphalt Cement, Modified Asphalt, 60/75 Pen, Asphalt Cement.

Composition

Homogenous blend of 27-37% Trinidad Lake Asphalt and 63-73% Refinery Bitumen

PHYSICAL AND CHEMICAL PROPERTIES

Appearance

A semi-solid, brown to black material

Uses:

- Airport runways
- Roads
- Highways
- Bridge Decks



ADVANTAGES OF USING TRINIDAD LAKE MODIFIED ASPHALT

60/75 ASPHALT CEMENT

- TLA components improve the ductility of the asphalt cement allowing the pavement to recover from distortions due to stress, without rupturing and rutting.
- The unique mineral matter component of the TLA adds non-skid properties to the pavement.
 - Increased stability and resistance to permanent deformation and rutting
 - Decreased aging
 - Resistance to cracking
 - Increased fatigue performance
 - Improved pavement load carrying
 - Provides structural and durability improvements which lead to extended pavement life
 - Withstands a wide temperature range

CATIONIC BITUMEN EMULSIONS

Lake Asphalt of Trinidad & Tobago (1978) Limited has emerged as a true pioneer in the region with the supply and manufacture of Cationic Bitumen Emulsions which complement its product range. This pioneering feat is made possible with the acquisition of a state of the art SEP Continuous Inline 12 metric ton per hour plant, backed by the technology of a world leader in business, Akzo Nobel.

The plant is fully automated producing materials of superior quality and high performance. The engineering and production staff are experienced and well trained, having received extensive overseas training on the operations of the plant and manufacture of the emulsified bituminous products.

As outlined in our product slate the plant has the capacity to manufacture a wide range of Bitumen Emulsions which are used for road surfacing and maintenance, among other purposes. This venture is a tangible sign of our commitment towards providing premier quality surfacing materials to our ever expanding cadre of customers globally.

A COMPLETE RANGE OF CATIONIC BITUMEN EMULSIONS

CATIONIC RAPID SETTING (CRS)-CRS-1, CRS-2

The rapid setting grades are designed to react quickly with aggregate and revert from the emulsion state to asphalt. They are used primarily for spray applications such as aggregate (chip) seals, sand seals, surface treatments and asphalt penetration macadam. CRS-2 grades have a higher viscosity to minimize potential for runoff.

CATIONIC MEDIUM SETTING (CMS) - CMS-2

The medium setting grades are designed for mixing with coarse aggregate, as these grades do not break immediately upon contact with aggregate. CMS mixes possess some measure of workability and have high viscosities to prevent runoff. These are generally used for cold mix applications and mixed-in-place operations.

CATIONIC SLOW SETTINGS (CSS)-CSS-1, CSS-1h

The slow setting grades are designed for maximum mixing stability. They are used with high fines content and dense-graded aggregates. All slow setting grades have low viscosities that can be further reduced by adding water. It can then be used for tack coats, prime coats, fog seals and dust palliative. CSS-1h has a stiffer/harder emulsion residue.

Lake Asphalt produces Cationic Bitumen Emulsions according to American Society for Testing and Materials (ASTM) Cationic Emulsified Asphalt specifications ASTM D2397.



ADVANTAGES OF LAKE ASPHALT'S CATIONIC BITUMEN EMULSIONS

- Environmentally friendly and easy to use due to relatively low viscosity
 - Applied in ambient conditions without the need for expensive heating equipment (energy saving)
 - May be used with cold as well as heated aggregates and with damp or dry aggregate, unlike cutback asphalts
 - Low cost, road servicing alternative to cutback, superior to comparable products
 - Easy and ready to use, already liquefied with superior performance to Cutbacks, without the shortcomings
 - Quality adhesion and durability are equivalent to and in most cases superior to their Cold mix applications
 - Specific Emulsions to suit your aggregate type and job requirements

Lake Asphalt produces Cationic Bitumen Emulsions in a state of the art continuous plant with a capacity of twelve (12) metric tons per hour, backed by technology of a world leader in the business, Akzo Nobel.

GENERAL USES OF EMULSIFIED ASPHALT

NOTE: Only those grades of emulsified asphalt in general use have been indicated. It is possible that under variations of aggregates, climatic conditions, or both, additional selections may be appropriate. Where the use of emulsified asphalt for applications other than those listed in the table are required, Lake Asphalt can be consulted.

Type of Construction	ASTMD2397; AASHTO		M208		
	CRS-1	CRS-2	CMS-2	CSS-1	CSS-1h
Asphalt Aggregate Mixtures:					
For pavement bases and surfaces:					
Plant mix (hot)	...	...	...	...	...
Plant mix (cold)					
Open-graded aggregate	...	...	X	...	...
Dense-graded aggregate	...	...	...	X	X
Sand	...	...	...	X	X
Mixed-in place:					
Open-graded aggregate	...	...	X	...	...
Dense-graded aggregate	...	...	...	X	X
Sand	...	...	...	X	X
Sandy Soil	...	...	...	X	X
Slurry seal	...	...	...	X	X
Asphalt-aggregate applications:					
Treatments and seals:					
Single surface treatments (chip Seal)	X	X	...	...	...
Multiple surface treatment	X	X	...	...	...
Sand seal	X	X	...	...	...
Asphalt applications:					
Fog seal	...	...	...	X ^C	X ^C
Prime coat-penetrable surface	...	...	...	X ^D	X ^D
Track coat	...	...	...	X ^C	X ^C
Dust binder	...	...	...	X ^C	X ^C
Mulch treatment	...	...	...	X ^C	X ^C
Crack filler	...	...	...	X	X
Maintenance mix					
Immediate use	...	...	...	X	X

^C Diluted with water; ^D Mixed-in prime only

TLA Coatings Automotive Underbody Coating

TLA Coatings Automotive Underbody Coating is used in the automotive industry for the protection of underbody carriages and internal joints and seams from corrosion caused by exposure to the elements.

Advantages:

- It dampens sound
- It can be sprayed or brushed on
- It can be used with a primer or top coat
- It is resistant to splashes of Petroleum Solvents
- Touch dries in one hour

This product is a blend of Trinidad Natural Asphalt and inorganic fillers. TLA Coatings Automotive Underbody Coating is non-toxic, asbestos-free and manufactured by Lake Asphalt of Trinidad and Tobago (1978) Limited.



TLA Coatings Pipe Guard

TLA Coatings Pipe Guard is a high quality coating designed specifically to protect metal and line pipes, tubing, drill pipes and casings in underground and above ground storage, typically used in the oilfield industry.

It is manufactured with superior adhesive and protective coating qualities which allows it to dry within 10 minutes.

TLA Coatings Pipe Guard is a blend of Trinidad Natural Asphalt and inorganic fillers.

It is manufactured by Lake Asphalt of Trinidad and Tobago (1978) Limited.



TLA Coatings Sealant

TLA Coatings Sealant is a water proofing compound ideal for use:

- In repairing cracks and seams in concrete walls, floors, and roofing
- In cementing asphalt shingles
- In sealing metal and rubber joints
- In preventing underground seepage
- In providing an airtight seal around doors and window frames

This product is a blend of Trinidad Natural Asphalt and inorganic fillers.

TLA Coatings Sealant is both non-toxic and asbestos-free, and safe for household and industrial uses. It is manufactured by Lake Asphalt of Trinidad and Tobago (1978) Limited.



TLA Coatings Bituminous Black Paint

TLA Coatings Bituminous Black Paint is an anti-corrosive coating which:

- Provides protection from metal surfaces
- Can be used as a decorative coating for fences and burglar proofing
- Is useful in coating water tanks, both outside and inside, while maintaining potability
- Is used as a primer

This product is a blend of Trinidad Natural Asphalt and inorganic fillers.

TLA Coatings Bituminous Black Paint is both non-toxic and asbestos-free and is a proven assistant in many household maintenance tasks.

TLA Coatings Bituminous Black Paint is manufactured by Lake Asphalt of Trinidad and Tobago (1978) Limited.



Underbody Coating

Product Name: TLA COATINGS AUTOMOTIVE UNDERBODY COATING

Recommended Uses: Protective Coating for the underbody surface of all vehicles, fenders and other parts.

Chemical Composition: Refined Trinidad Lake Asphalt (TLA) , Inorganic Fillers and Solvents.

Appearance: Black Viscous Material

Properties: Penetration - 360 - 365
Solid Content - 88 - 95%

Coverage: Approximately 50 sq. ft./gallon depending upon thickness of spread.

Shelf Life: Indefinite (be sure to seal contents properly after opening)

Application: May be brushed on or sprayed on when diluted with Lasco thinners

Drying Time: Touch dry 1 – 2 hours. Allow 24 hours drying before over coating

Pipe Guard

Product Name: TLA COATINGS PIPE GUARD

Recommended Uses: Protective Coating for line pipes, tubings drill pipes and casings in storage.

Chemical Composition: Refined Trinidad Lake Asphalt (TLA) , Inorganic Fillers and Solvents.

Appearance: Black Viscous Liquid

Properties: Viscosity - 3.0 – 3.5 poise (@ 25° C)
Solid Content - 65 – 76%

Coverage: Approximately 50 sq. ft./gallon depending upon thickness of spread.

Shelf Life: Indefinite (be sure to seal contents properly after opening)

Application: May be brushed on or sprayed on clean surfaces

Drying Time: 15 –30 minutes

Complete Cure: 4 – 6 hours

Sealant

Product Name: TLA COATINGS SEALANT

Recommended Uses: Protective Sealant for joints and cracks in metal, plastic and concrete works.

Composition: Refined Trinidad Lake Asphalt (TLA), Inorganic Fillers and Solvents.

Appearance: Black Soft solid

Properties: Penetration - 320 -330 (@ 25° C)
Solid Content - 86- 98%

Shelf Life: Indefinite (be sure to seal contents properly after opening).

Application: May be applied by putty knife or trowel

Drying Time: 4-6 hrs

Complete Cure: 10 - 12 hrs

Bituminous Black Paint

Product Name: TLA COATINGS BITUMINOUS BLACK PAINT

Recommended Uses: Protective Coating for surfaces prone to corrosion and deterioration from the elements.

Composition: Refined Trinidad Lake Asphalt (TLA), Inorganic Fillers and Solvents.

Appearance: Black Viscous Liquid

Properties: Viscosity - 1.5– 2.0 poise
Solid Content - 60 – 75%

Coverage: Approximately 6m²/ litre depending upon thickness of spread.

Shelf Life: Indefinite

Application: May be brushed on prepared surfaces

Drying Time: 2-3 hrs

Complete Cure: 6 –8 hrs



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