Address: 148 Toryork Dr. Toronto ON M9L 1X6
Phone: 905-669-9720
Website: www.vulcanasphalt.ca
Date: February 2025

Standard Membrane and Mastic SDS and Installation Assembly

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MATERIALS SAFETY DATA SHEET

SECTION 1 - PRODUCT INFORMATION

Product Identifier: **Florastic Mastic Asphalt**
Product Identification Number (PIN):
Product Use: Trafic Wearing Surface, Chemical & Acid Resistant Heavy Duty Industial Floors
WHMIS Classification Manufactured article:

Vulcan Ashphalt & Supply (1995) Ltd.
Phone: 905-669-9720-1
10 Doughton Road, Unit 4
Concord, Ontario L4K 1R2
Fax: 905-669-5846

SECTION 2 - INGREDIENTS

Mastic asphalt is a type of material, composed of suitably graded mineral matter and asphaltic cement, blended together in such proportions as to form a cohesive, voidless impermeable mass, solid or semi-solid under normal temperature conditions, but sufficiently fluid when brought to a suitable temperature to be spread by means of a hand float, without compaction

Materials: 1. Asphaltic cement, which consists of bitumen, lake asphalt, asphaltic or blends of these with one another. 2. Fine aggregate: this will be either natural rock asphalt, which is limestone naturally impregnated with bitumen and mined or quarried in that form, or limestone, which is crushed to a fine powder. 3. Coarse aggregate: either crushed stone, eg: granite or limestone, or naturally occuring material, eg: grit.

Vapor resistivity: The vapor resistivity of mastic asphalt is very high and can be assumed to be not less than 100,000 MNs/(g.m.) Vapor difusion resistance factor (u) lo: the ratio of the vapor resisivity of the materials to that of still air. Mastic asphalt can be taken to have a factor of 20,000 for condensation control calculations. Mastic asphalt is impervious to water.

SECTION 3 - PHYSICAL DATA

Physical Sate: Solid/Semi Solid
Odour and Appearance: Black solid to semi-solid, Slight asphaltic/ tarr odor when semi-solid
Odour Threshold (ppm): 1
Percent Volatile by Volume (%): 0
Vapour Pressure (mm Hg): Not applicable
Vapour Density: Not applicable
Evaporation Rate: (BuAC = 1): Nil
Boiling Point (ºC):Semi-solid + 215ºC, Liquid at + 232ºC
Freezing Point (ºC): Minus 35-60ºC
PH: Not applicable
Specific Gravity (Water = 1): 2.4kg/m^3. Thick
Coef. Of Water/Oil Dist: Not applicable

SECTION 4 - FIRE AND EXPLOSION HAZARD

Flammability: Yes, if heated beyond 350ºC
Flash Point (ºC): 350ºC
Upper Flammable Limit: n/a Lower Flammability Limite:n/a
Auto-Ignition temp (ºC): n/a
Means of Extinction: Dry Chemical foam. Do not spray water directly on hot burning materials. Use water spray to cool equipment, exposed containers and cases
Hazardous Combustion Products: Carbon Monoxide, Toxic odor of sulphur
Explosion Data: Not sensitive to impact. Not sensitive to static electricity.

SECTION 5 - PREPERATION OF M.S.D.A

Prepared by: Vulcan Ashphalt and Supply Limited

SECTION 6 - REACTIVITY DATA

Chemical Stability: Yes
Incompatability with other substances - Yes, Upon cooling it is solid
Hazardous Decomposition Products: None

SECTION 7 - TOXICOLOGICAL PROPERTIES

Route of Entry: Skin Contact-yes: Skin absorption- no; Eye contact-yes; Inhalation-yes; Ingestion-no
Effects of acute exposure to product: Hot material can severly burn skin and eyes on contact. Acute exposure to hot material not expected to produce adverse effects.
Effects of cronic exposure to product: Fumes from hot material may cause nausea, headache, dizziness and Irritation eyes and upper respiratory tract.
Exposure Limits; TLV's Asphalt Fumes-5mg/m^3 Hydrogen Sulf 14mg/m^3
Sensitation to product: Not available
Carcionogenicity: Not listed by IARC or ACGIH as carcinogen
Reproductive toxicity: Not available
Mutagenicity: Not available
Synergistic Products: Not available

SECTION 8 - FIRST AID MEASURES

Skin: For cold products, wash skin with soap and water. For hot product contact, quench burns with cold water and cover with sterile dressing. DO NOT TRY TO REMOVE PRODUCT. Move victim to HOSPITAL.
Eyes: Flush with running water for at least 15 minutes. Seek medical attention.
Inhalation: Move victim to fress air. If irriation persists, administer oxygen and get medical attention.
Ingestion: Ingestion is unlikely bit if it happens do not induce vomiting and get medical attention.

SECTION 9 - PREVENTATIVE MEASURES

Personal Protectve Equipment:
Gloves- Insulated oil-Impervious loose gauntlet-type
Respirator- Air purifying respirator approved for dusts, mists and fumes
Eyes: Face shield or chemical safety goggle
Footwear - Approved Safety Shoes
Clothing - Long Sleeve Shirt, cuftless pants or overalls
Engineering Controls: Provide sufficient ventilation to maintain airborne concentrations of asphalt and sulphide fumes below 5mg/m^3 and 14mp/m^3 respectively
Leak and Spill Procedure: Prevent from entering sewers or water courses. Allow to cool to solidity - break up and recover in drums
Waste Disposal: Dispose of to approved landfill site or to licenced reclaimer facility
Handling Procedure and Equipment: Emergency shower and eyewash fountains should be available within vicinity of any potential exposure to hot material
Storage Requirements: Do not store hot with strong oxidizers or light hydro-carbons in Immediate vicinity
Special Shipping Information: Transported either in solid form or in heated container transport machines.

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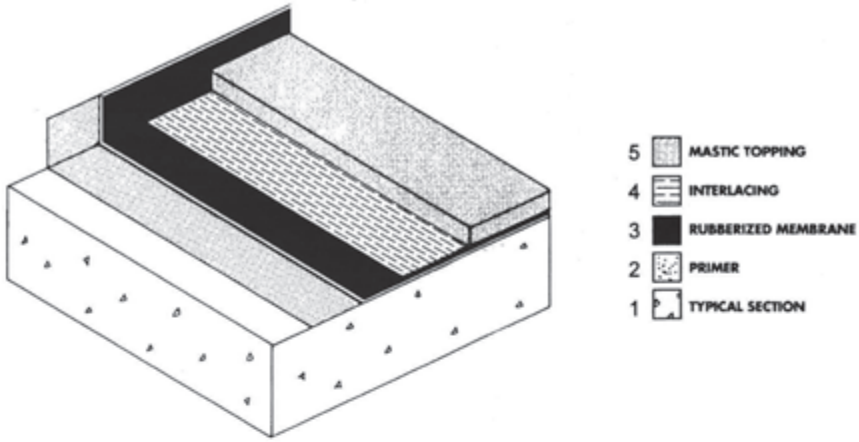
Mastic Asphalt Traffic Topping

Vulcan Florastic Mastic Asphalt for Interior Parking Levels



Specification

Vulcan's traffic topping provides an exceptionally durable waterproofing system for parking garage slabs subject to water borne chloride deterioration. This dual composition system is comprised of a waterproof mastic asphalt wearing course placed on a hot applied rubberized membrane conforming to CGSB-37.65-M88.

Mastic asphalt has been in use for over a century as a waterproof protective surface.

Mastic asphalt can be defined as a material composed of suitably graded mineral matter blended with asphalt cement to form a cohesive, voidless and impermeable mass. It attains a degree of fluidity when heated and is then applied to any appropriate horizontal or sloped surface. Unlike other types of asphalt, mastic is voidless and laid without compaction, usually by means of a float. Being voidless, mastic has no cavities in which undesirable contaminants or chloride laden water can accumulate.

Upon completion the owner is left with a fully bonded, non-skid, waterproof and salt resistant traffic topping durable enough to withstand the constant rigors of a parking garage environment while minimizing ongoing maintenance costs.

The system has the capability of bridging and sealing cracks, construction and expansion joints. Mastic asphalt is also suitable for grading and sloping so as to reduce water ponding and enhance surface drainage. An additional benefit is derived from the quick curing time as the mastic topping is ready to accept traffic immediately upon cooling to ambient temperatures.

Installation

❶ **Concrete** - On new concrete, water based and cured, only a fine broom sweep to remove loose and foreign materials is required. On old concrete, surface must be cleaned by blast track, water blast or mechanical abrasion.

❷ **Primer CGSB 37-GP-9** - Prime deck using penetrating asphalt primer. Prior to application of waterproofing membrane treat all cracks in excess of 1.5 mm with an extra layer of waterproofing membrane, reinforced with glass fibre yarn approximately 150 mm wide centred over crack or joint.

❸ **Membrane CGSB 37-GP-50M** - Apply Florastic waterproofing membrane to concrete deck by means of squeegees to a minimum of 1.5 mm and a maximum thickness of 3mm and allow to cure. (see membrane specification)

Where indicated, carry waterproofing membrane under curbs, steps and any other components.

At terminations and penetrations carry waterproofing membrane up vertical surfaces to top of asphalt course to a maximum height of 100 mm.

❹ **Interlacing CGSB 37-GP-64M** - Over Florastic membrane install a dry saturated glass separation sheet.

❺ **Wear coat CGSB 37-65-M88** - Install a hot mastic asphalt wear coat to a thickness of 15mm and rub surface with sharp sand to achieve a non slip finish.

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Mastic Asphalt Traffic Topping

Other:

Expansion Joint:

Expansion joints shall receive a double application of membrane reinforced with 300mm wide butyl rubber sheeting, centered over and looped down into the expansion joint to allow for movement. Care shall be taken to ensure no air bubbles are trapped underneath the rubber sheets.

Build Up:

Should build-up be required, extra layers of Florastic Asphalt can be applied at this time. Any thickness above the normal 15 mm would be considered extra to the normal application and would be an extra to the price quoted.

Connecting Ramps:

Same application as above, one or two coats of mastic asphalt traffic topping can be applied using a rolled crimp finish to a maximum 25 mm thickness.

Materials

Florastic traffic wear surface shall be composed of fine Vulcan mineral mastic fillers, non-metallic mineral aggregate and a blend of residual and natural asphalts: The proportions of residual and natural asphalts may be varied to provide the required penetration and stability.

Physical Properties: Mastic Asphalt

Overall Thickness	15 mm
Colour	Black
Service Temperature	Min. -40°F to Max. 150°F
Application Temperature	Min. 0°F to Max. 100°F
Setting Time	Upon cooling to ambient temperature
Method of Application	Spread by float
Spreading Temperature	Min. 425°F to Max 500°F

Delivery & Storage

Material shall be delivered to the site in energy efficient portable mastic transport mixer, kept at a controlled heat and under constant agitation until time of placement.

Qualifications

The applicators shall be trained and skilled in the use of hot process mastic and shall have satisfactory proven experience in its application. The mobile mixing plant shall be operated by trained personnel having complete knowledge of all materials used in the manufacture of hot process mastic.

Inspection & Testing

The owner or his representative shall have free access to on-site preparation and application of materials. All work shall be subject to inspection and testing by the owner or his designate, with all costs for such inspection being paid by the owner.

Standards & Codes

Hot mastic asphalt shall meet standards & codes set out in CGSB 37-65-M88, published April 1988

Guarantee

Vulcan shall provide to the owner, upon completion of work, a guarantee covering defects due to workmanship or materials for a period of two years from of completion. All limitations are outlined in the guarantee.

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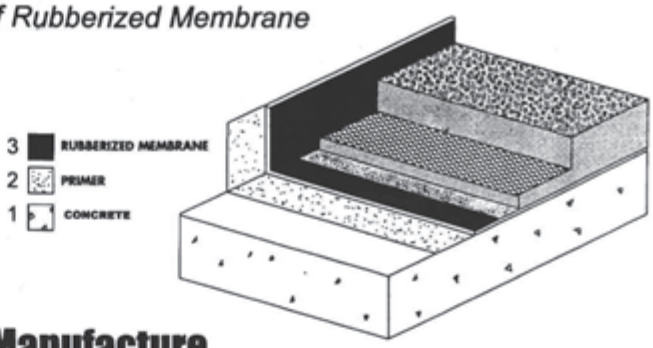
Membrane

Vulcan Florastic Waterproof Rubberized Membrane

Specification CGSB 37-GP-50M

This specification covers the use of Vulcan Florastic Hot Applied Rubberized Membrane, hot applied to form a continuous elastomeric membrane. This is ideal when used under a protective coating of Vulcan's Florastic Salt Resistant Hot Process Mastic Asphalt forming a bonded waterproof, flexible, monolithic membrane topped by a tough traffic surface, rugged enough to withstand the every-day abuses in commercial and apartment multiple garage parking and traffic decks.



Installation

1. The concrete surface should be float finish and any un sound concrete repaired prior to membrane application.

   The concrete surface shall be clean, dry and free of dust, dirt, frost, laitance, grease, oil, curing compound and any other substance that may adversely affect membrane adhesion.

   Expansion joints shall not have broken edges and shall be free of any materials such as styro foam, wood forms or any other debris for a minimum depth equal to the joint width
2. The cleaned concrete surface shall then be primed at a rate not exceeding one gallon per 200 square feet. Asphalt primer shall be used and allowed to dry prior to membrane placement.
3. Apply a hot applied rubberized membrane by means of a rubber squeegee to the deck. Construction joints and cracks greater than 2 mm wide shall receive a double application of membrane reinforced with 12" wide sheets of spunbonded polyester fabric.

   Expansion joints shall receive a double application of membrane reinforced with a 12" wide sheet of butyl rubber. The butyl rubber sheet shall be centered over and looped down into the joint for anticipated movements. Care shall be taken to ensure that air is not trapped beneath rubber sheets.

Materials

The Vulcan hot applied membrane is a selected blend of suitably fluxed residual and natural asphalts, a modifying agent, rubber, extender oil, mineral fillers and synthetic rubber polymers

Manufacture

Materials are heated on site using a mechanically agitated oil heated Asphalt Mixer machine. The reheating and control of materials shall be carried out by an operator who has been factory trained and shall be thoroughly skilled in the operation of the machinery and have complete knowledge of the use and application of salt resistant rubberized thermoplastic coatings and a comprehensive knowledge of all materials used in the manufacturing.

Delivery & Storage

Membrane must be heated under constant supervision of experienced personnel, in an indirectly heated oil jacket kettle equipped with a positive agitating system and kept at a controlled temperature. Stockpiled membrane shall be kept dry and protected from damage, weather and deterioration.

Physical Properties: Membrane

Overall Thickness	Minimum 1.5 mm - Maximum 3mm
Colour	Black
Service Temperature	Min. -28°C to Max. +38°C
Application Temperature	Min. -28.°C to Max. +38°C
Setting Time	as soon as membrane has cooled to temperature of the surrounding atmosphere
Method of Application	Hot applied by a squeegee or mop
Spreading Temperature	Min. 150°C to Max 210°C

TABLE 1: Performance Testing of Rubberized Asphalt Membrane CGSB 37-GP-50M

TEST	CGSB 37-GP-50M SPECIFICATION	TEST RESULTS	COMMENTS
Flash Point, °C	Min. 26	268°C	Passed
Penetration, 0.1mm	Max. 110 @ 25°C	28	Passed
	Max. 200 @ 50°C	89	Passed
Flow, mm	Max. 3	60	Passed
Adhesion	Min. 1.0	60	Passed
Water Vapour Permeance (ng/Pa.m².s)	Max. 1.7	0.90	Passed
Water Absorption, g	Min. 0. 18	+0.22	Passed
Water Resistance	N/A		
Low Temperature Flexibility	No cracking or loss of adhesion	No cracking or loss of adhesion	Passed
Crack Bridging	No cracking or loss of adhesion	No cracking or loss of adhesion	Passed
Heat Stability Penetration, 0.1 mm	Max. 110 @ 25°C	25	Passed
	Max. 200 @ 50°C	55	Passed
Flow, mm	Max. 3	0	Passed
Viscosity, sec.	Min. 2, Max. 15	14	Passed
Low Temperature Flexibility	No cracking at - 25'C	No Cracking	Passed
Viscosity, sec.	Min. 2, Max. 15	13	Passed

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Standard Interior Mastic Detail