SIDHVINAYAK BITUMEN ENTERPRISE PVT. LTD.

(An ISI 8887 : 2017 & ISO 9001:2015 Certified Company)

APPROVED BY:
IS : 8887

CM/L:5100179595

CERTIFIED ISO 9001:2015 COMPANY

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N S I C

www.sidhvinayak.com

Sidhvinayak Bitumen Enterprise is a Private Limited company an ISO 9001:2015 Company incorporated on 16th day of November 2011. After incorporation we started as a trading company, trading in Bitumen and Bitumen Emulsion. After getting massive success in trading we decided to diversify from trading to manufacturing and set up of manufacturing plant of Emulsion Bitumen . Thereafter, we procured a plot of land located at Mouza – Islampur, JL No.-76, LR Dag -3338 under Islampur Gram Panchayat, P.S.- Jagatballavpur, District - Howrah-711401, West Bengal and setting up of a manufacturing unit. On March 2020, we started commercial production.
Now, we are the leading manufacturer of Bitumen Emulsion, Tailor-made Bitumen Emulsion (Cold Mix), Polymer Modified Micro-surfacing Emulsion, Instant Patch fill mixes and allied bituminous products in our State-of-Art plant located at Jay Sriram Hanuman Complex, Islampur, Howrah, West Bengal. We are also associated as trader and supplier of imported bitumen of all grades, PMB, CRMB, Bituminous water proofing membrane and building materials since last 12 years.

Due to huge demand in market, we have set up a Godown cum Branch office by arranging rented premises in two different state located at Mouza – Saintaldih, Thana – Pindrajora, Bokaro, Jharkhand and Room No. - 401 & 402, 4th Floor, Satyanayan Arcade Building Harabala Path,Ulubari, Dist- Kamrup,Guwahati - 781007 for extension and spread of our business.

New technologies and development of new methods of road constructions constitute an important contribution to the solution of construction and maintenance of roads in uncomplicated way. SVBPL with its variety of products made its way to road construction hassle-free by eliminating heating in an environment friendly manner. Our products provide solution for all applications in road construction like Prime coat, Tack coat, OGPC-Seal Coat, BM-SDBC, Micro-surfacing, Instant Pothole repairing etc.

INFRASTRUCTURE OF THE PLANT

We have State-of-Art Semi automatic bitumen emulsion plant with production capacity of 10MT/hour. The plant is equipped with high quality Colloid mill and flow meters and is precisely designed to ensure product performance in reliability and practicability. The plant is equipped with Thermic fluid boiler of capacity 4.0 Lakh Kcal to maintain temperature of raw material during production

Emulsion Storage Tanks

Emulsion Filling Machine

Colloid Mill

LABORATORY

SVBPL Lab is fully equipped with all Instruments & Equipments to ensure quality of raw materials and finished products. Apart from routine tests, our experienced laboratory Staff's always engaged themselves in research & development of new products

STORAGE CAPACITY

We have approximately 400 Mt storage capacity of Emulsion, 400 Mt Bitumen & 100 Mt PMB

THE TECHNOLOGY KNOW HOW AND PRODUCT DETAILS OF SVBPL

SVBPL Cold Binder®(Mix) Technology: SVB Cold Mix® Binders are tailor-made cationic bitumen emulsions in which a bituminous phase disperses in an aqueous phase enrich with high quality emulsifiers and anti-stripping agents by mechanically shearing it in a colloid mill. These binders are designed to suit different applications in road construction with different qualities of aggregates available in India and its climate conditions and follows the specifications of IRC:SP-100:2014. These binders are suitable for road applications like Premix OGPC & Seal Coat, MSS, Pot-hole repairing, Maintenance work, Micro-surfacing and Slurry Seal.

WHY THIS TECHNOLOGY ?

HOT MIX	COLD BINDER (MIX)
Emission of air pollutants	No heating required. Pollution free green technology
High energy requirement for mixing aggregates and binders	Heating cost is completely saved and is also environment friendly
Low output for mix production and laying work in rainy and cold season.	Can be used in all-weather including wet conditions, hence faster progress.
Unsafe to workers and their health	No adverse effect on the health of workers
Anti-stripping agents are required to enhance performance.	Cold mix binders have in-built anti stripping properties
Poor control of temperature in field	No need to control temperature

SVBPL Cold Mix® Binder Product Ranges:

UNIPAVE COLD®

SVB Unipave Cold® is a water based tailor-made Cationic Bitumen Emulsion with moderate viscosity and with slow and medium setting characteristics that makes it an ideal product for Premix carpeting and Seal coat, Mix Seal Surfacing, repairing works with clean and medium dusty aggregates available in different locations in India. Unipave Cold® is a product designed and developed after a series of Laboratory experiments to analyze mix design properties with different qualities of aggregates at different temperatures. It is chocolate brown in colour and is a free flowing liquid at ambient temperature. We produce Unipave Cold® strictly as per **IRC:SP:100-2014** specifications.



DURAPAVE COLD®

SVB Durapave Cold® is a water based tailor-made Cationic Bitumen Emulsion with moderate viscosity & slow and medium setting characteristics that makes it an ideal product for Premix carpeting and Seal Coat application with clean aggregates. It has enhance setting property of the mix in cold shady areas. It is chocolate brown in colour and is a free flowing liquid at ambient temperature. We produce Durapave Cold® strictly as per **IRC: SP :100-2014** specifications.

HIPAVE COLD®

SVB Hipave Cold® is a water based tailor-made Cationic Bitumen Emulsion with moderate viscosity and slow setting characteristics that makes it an ideal product for applications like Premix Carpeting & seal coat, MSS, BM and SDBC in HMP. It provides enhance lead time to carry the mix from plant to site. It is chocolate brown in colour and is a free flowing liquid at ambient temperature. We produce Hipave Cold® strictly as per **IRC:SP:100-2014** specifications.

PME COLD®

SVB PME Cold is a water based Polymer Modified cationic Bitumen Emulsion with moderate viscosity and quick setting characteristics that makes it an ideal product for Microsurfacing application. Microsurfacing is a renewal and protective course in which a well-proportioned mixture of PME Cold, mineral aggregates, mineral fillers, water and additives are mixed in a truck mounted machine and spread over a properly prepared surface. We produce PME Cold strictly as per **IRC: SP: 81-2014** specifications.

Application of SVB Cold® mix binders:

Application	Aggregates/10m²	Binder/10m²
Premix Carpeting (OGPC)	a. 13.2mm (Passing 22.4mm and retained 11.2mm IS Sieve) = 0.18 m^3 b. 11.2mm (Passing 13.2mm and retained 5.6mm IS Sieve) = 0.09 m3	20 to 23 Kg
Seal Coat	Liquid Seal Coat: Passing 6.3mm IS Sieve = 0.09 m^3	12 to 14 Kg
	Premix Seal Coat: Passing 2.36mm and retained 180 micron IS Sieve = 0.06 m^3	10 to 12 Kg
MSS	Passing 0.090mm to 13.2mm IS Sieve = 0.27 m^3	30 to 33 Kg
CMBM (50mm)	Passing 0.075mm to 26.5mm IS Sieve = 0.6 m^3	5% by wt. of Mix
CMSDBC (25mm)	Passing 0.075mm to 13.2mm IS Sieve = 0.3 m^3	8-10% by wt. of Mix

SVB Cationic Bitumen Emulsion:

SVB Bitumen emulsions Viz. **RS-1, RS-2, CSS-1, SS-2, MS** are the emulsions produced strictly to meet the specification of IS 8887:2017 in which a bituminous phase disperses in an aqueous phase by mechanically shearing it in a colloid mill. **SVB Bitumen Emulsions** are suitable for applications of Prime Coat, Tack Coat, Fog Seal, Crack Seal and small repairing works.

Application of SVB Cationic Bitumen Emulsion:

SVB Bitumen Emulsion MS

SVB MS is a Cationic Bitumen Emulsion with high viscosity and medium setting characteristics designed for Small Patch works, Pot-hole repairing and Tack coat application. **SVB** MS is produce strictly as per the specifications of **IS: 8887-2017**.

SVB Bitumen Emulsion RS-1

SVB RS-1 is a Cationic Bitumen Emulsion with low viscosity and rapid setting characteristics designed for Tack Coat application to an existing surface to facilitate a bond between the surface being paved and the overlaying course. **SVB RS-1** produces strictly as per the specifications of **IS: 8887-2017.** The recommended rate of application of tack coat is as follows:

Type of surface	Rate of spray (Kg/m²)
Bituminous surface	2.0 to 3.0
Granular surface treated with primer	2.5 to 3.0
Cement concrete pavement	3.0 to 3.5

SVB Bitumen Emulsion CSS-1

SVB CSS-1 is a Cationic Bitumen Emulsion with low viscosity and slow setting characteristics designed for Prime Coat application to spray on a compacted granular base course which penetrates into the base more than 8 mm. it is also used to fill small cracks on existing pavements as well as fog seal to rejuvenate an old oxidized road surface. **SVB CSS-1** is produce strictly as per the specifications of **ASTMD-2397**.

Prime coat:

Type of Surface	Rate of spray (Kg/10m²)
Low porosity (WBM/WMM)	7 to 10
Medium porosity (Soil base, lime / cement stabilized base/lime cement base)	9 to 12
High porosity (Gravel base/ Crusher run macadam/ Crushed Rock base)	12 to 15

Fog seal/Crack seal:

The recommended rate of application is 3-10 Kg/10m² depending on surface condition and severity of damage.

PG Grade-Polymer modified bitumen (SVB-PMB)

The performance grade of bitumen or PG 64-10, PG 70-10, PG 76-10, PG 82-10 and PG 76-22 is the latest standard of the world. This method is a relatively new method that classifies bitumen based on the temperature conditions of different regions. In this method, the mechanical properties of bitumen are examined from completely scientific methods. In this method, a temperature range is assigned to the bitumen, and the consumer can choose the appropriate bitumen according to his desired location. Today, for polymer modified bitumen and pure bitumen according to the standard, a performance grade or PG is defined according to temperature and environmental conditions. The wider range or range of PG 76-10 of a compound means more desirable properties and higher resistance.

Polymer modified bitumen (SVB-PMB) is one of the specially designed and engineered bitumen grades that are used in making pavement, roads for heavy duty traffic and home roofing solutions to withstand extreme weather conditions. PMB is a normal bitumen with the added polymer, which gives it extra strength, high cohesiveness and resistance to fatigue, stripping and deformations, making it a favourable material for infrastructure. Pavements designed and constructed for heavy-duty traffic and extreme weather conditions require specially designed engineered Bitumen Grades. By changing the characteristics of normal bitumen with the addition of a polymer, either they are of elastomeric nature or elastomeric, we succeed to obtain bitumen that allows the mixture to be more cohesive, with much more strength and significant higher resistance to parameters like fatigue and permanent deformations for road pavements.

When a polymer is added to regular bitumen, it becomes more elastomeric, which provides it with additional elasticity. The polymer that is added is styrene butadiene styrene (SBS), which acts as a binder modification agent. The primary objective of SBS polymer modified bitumen is to provide extra life to pavement, roads and construction designs.

Advantage of using polymer modified bitumen (SVB-PMB)

- Stronger road with increased marshal stability value and greater Rigidity.
- Better resistant towards rainwater and water stagnation.
- No stripping and no potholes.
- Better resistance to permanent deformation
- Reduction in pores in aggregate and hence less rutting and ravelling.
- Much higher durability

Table 1 Requirements of Polymer Modified Bitumen(PMB)
(Clause 6.5 and 9.5.3)

Sl. No.	Characteristics	Grades and Requirements					Method of Test	
		PMB 64 -10	PMB 70 -10	PMB 76 -10	PMB 82 -10	PMB 76 -22	Ref to	
							Annex	IS/ASTM
1)	2)	3)	4)	5)	6)	7)	8)	9)
(A) Tests to be Carried out on Original Binder								
(i)	Softening point (R and B), °C, Min	60	65	70	80	75	—	IS 1205
(ii)	Elastic recovery of half thread in ductilometer at 15°C, percent, Min	70	70	70	85	80	Annex A	—
(iii)	Flash point COC, °C, Min	230	230	230	230	230	—	IS 1209
(iv)	Viscosity at 150°C, Pa.s, Max	1.2	1.2	1.2	1.6	1.5	—	ASTM D 4402
(v)	Complex modulus (G*) divided by Sin delta (G*/sin δ) as Min 1.0 kPa, 25 mm Plate, 1 mm Gap at 10 rad/s, at a temperature, °C	64	70	76	82	76	Annex B	—
(vi)	Phase Angle (δ), degree, Max	75	75	75	75	75	Annex B	—
(vii)	Separation, difference in softening point (R & B), °C , Max	3	3	3	3	3	Annex C	—
(viii)	FRAASS breaking point,°C , Max	-10	-10	-10	-10	-22	—	IS 9381
(B) Tests to be Carried out on Rolling Thin Film Oven (RTFO) Residue								
(i)	Loss in mass, percent, Max	1.0	1.0	1.0	1.0	1.0	—	IS 9382
(ii)	Complex modulus (G*) divided by Sin delta (G*/sin δ) as Min 2.2 kPa, 25 mm Plate, 1 mm Gap at 10 rad/s, at a temperature, °C	64	70	76	82	76	Annex B	—
(iii)	**MSCR TEST**							
	(a) Standard Traffic (S) Jnr3.2, Max 4.5 kPa–1 Jnrdiff, Max 75 percent Test Temperature, °C	64	70	76	82	76	Annex D	—
	(b) Heavy Traffic (H) Jnr3.2, Max 2 kPa–1 Jnrdiff, Max 75 percent Test Temperature, °C	64	70	76	82	76	Annex D	—
	(c) Very Heavy Traffic (V) Jnr3.2, Max 1 kPa–1 Jnrdiff, Max 75 percent Test Temperature, °C	64	70	76	82	76	Annex D	—
	(d) Extremely Heavy Traffic (E) Jnr3.2, Max 0.5 kPa–1 Jnrdiff, Max 75 percent Test Temperature, °C	64	70	76	82	76	Annex D	—
(C) Tests to be carried out on Pressure Aging Vessel (PAV) Residue								
(i)	Complex modulus (G*) multiplied by Sin delta (G*/sin δ) as Max 6.000 kPa, 8 mm Plate, 2 mm Gap at 10 rad/s, at a temperature, °C	31	34	37	40	31	Annex C	—

(1) FRAASS Breaking Point only to be evaluated in case the project site has subzero temp conditions
(2) Method for Preparation of Rolling Thin Film Oven (RTFO) Residue in given in Annex E
(3) Method for Preparation of Pressure Aging Vessel (PAV) Residue in given in Annex F

Crumb Rubber Modified Bitumen (SVB-CRMB)

Crumb Rubber Modified Bitumen (SVB-CRMB) is a unique and innovative material that has gained significant attention in the road construction industry. This sustainable solution is made by blending bitumen with crumb rubber obtained from scrap tires, which results in a durable and flexible material with excellent resistance to wear, tear, and weather conditions.

CRUMB RUBBER MODIFIED BITUMEN (SVB-CRMB) PRODUCTION PROCESS

The production process of Crumb Rubber Modified Bitumen (SVB-CRMB) or rubberized asphalt involves a series of well-defined stages, resulting in a product that optimally combines the advantageous properties of bitumen and crumb rubber. Here is a generalized process:

1. Crumb Rubber Production: This is the initial phase where waste tires are mechanically ground into fine particles, creating the crumb rubber. The size of these particles typically ranges between 0.6 to 0.8 mm.

2. Preliminary Blending: The crumb rubber is added to hot bitumen, usually at temperatures around 180°C. The high temperature is necessary for the rubber particles to swell and absorb the bitumen.

3. Digestion Phase: The mixture is kept at the high temperature for a specific period, known as the digestion or reaction time. This period can vary between 1 to 2 hours and allows for the complete assimilation of the crumb rubber into the bitumen. During this process, the rubber particles swell, soften, and partially dissolve, creating a thicker, more viscous material.

4. Final Blend: Following the digestion phase, the blend is stirred thoroughly to ensure the crumb rubber is evenly dispersed within the bitumen. This can be achieved by using high-speed shear mills.

5. Filtration and Storage: The SVB-CRMB is filtered to remove any large, undissolved rubber particles. It is then stored at high temperatures to prevent separation before use.

6. Use in Asphalt Mixture: The final SVB-CRMB product is mixed with aggregate material (stones, sand, etc.) to create the asphalt mixture that is used for paving.

Please note that the specifics of the production process may vary depending on the required properties of the CRMB, local regulations, and the technology available. Regardless of these factors, the goal is always to produce a superior pavement binder that can resist deformation, cracking, and weathering more effectively than conventional bitumen.

CRUMB RUBBER MODIFIED BITUMEN (SVB-CRMB) GRADES, TYPES, AND FORMS

Crumb Rubber Modified Bitumen (SVB-CRMB) is an innovative form of bitumen, fortified by the inclusion of crumb rubber, which are finely ground particles extracted from waste tires. This unique combination boosts the performance and durability of bitumen, significantly enhancing road longevity. The varied grades of CRMB, differentiated by the rubber content and the production method, are specifically designed for distinct climates, road networks, and traffic volumes.

The three primary grades of CRMB are:

1. **SVB-CRMB 60:** Tailored for warm climates, this grade blends bitumen with crumb rubber to enhance the elasticity of bitumen and increase its softening point, making it more resistant to high temperatures. It consequently reduces the risk of rutting and heat-related damage to the road surface.

2. **SVB-CRMB 55:** This grade is suitable for general climates where temperatures fluctuate considerably throughout the year. It ensures optimal performance under a range of temperatures and is ideal for a variety of road construction projects, including highways, urban roads, and residential streets.

3. **SVB-CRMB 50:** For colder climates with frequent sub-zero temperatures, SVB-CRMB 50 is the preferred choice. This formulation maintains flexibility at lower temperatures, thereby reducing the likelihood of thermal contraction-induced cracking. The added crumb rubber enhances the bitumen's resistance to cold-temperature cracking and thermal fatigue.

Technical Specification

S.N	PROPERTIES	CRMB 50	CRMB 55	CRMB 60	ASTM STANDARDS
1	Penetration at 25○ C, 1/10mm, 100g, 5 sec	< 70	< 60	< 50	D5
2	Softening Point, (R&B),○C, Min	50	55	60	D36
3	Elastic Recovery at 15○C ,%, Min	50	50	50	D6084
4	Flash point , COC,○C , Min	220	220	220	D92
5	Separation, Difference in Softening Point,(R&B),○C, Max	4	4	4	–
6	Viscosity at 150○C, Poises	1-3	2-6	3-9	D2170/D4402
	Thin Film Oven Test & Test on Residue				
7a	Loss in Mass, %, Max	1.0	1.0	1.0	D6	
7b	Reduction in Penetration of residue at 25 ̊C , 100g, 5s, %,Max	40	40	40	D5	
7c	Increase in Softening Point, ̊C, Max	7	6	5	D36	
7d	Elastic Recovery at 25 ̊C, %, Min	35	35	35	D6085	

MODIFIED VG40 BITUMEN

SVB - Bitumen VG-40 is special formulated bitumen, which is obtained by a technique of physical/chemical modification that alters the chemistry and balance of the bituminous components to a desired optimum. They are formulated to resist both pavement rutting at higher temperatures and thermal shrinkage cracking at lower temperatures. In addition, SVB - Bitumen VG-40 better withstand fatigue at normal operating temperatures. SVB - Bitumen VG-40 combines the characteristic advantages of softer grades at low temperatures and of harder grades at high temperatures.

SVB - Bitumen VG-40 can be used in various asphalt mix designs and techniques whichs result in the manufacture of cohesive asphalt mixes suitable for any type of traffic. SVB - Bitumen VG-40 increases the stability of the asphalt mix at any temperature and enhances long lasting surface characteristics, SVB - Bitumen VG-40 is suitable for heavy traffic road, airport runway and taxiway, container terminals.

SVB - Bitumen VG-40 is a modified VG Grade bitumen, confirming to IS: 73 2013, specially designed & developed to provide high performance over a wide range of different highway applications. The product can be used in DBM / BC layers.

SVB - Bitumen VG40, a Viscosity Grade 40 Bitumen, is a specialized asphalt used in road construction and various industries. Known for its high viscosity, thermal stability, and water resistance, it creates enduring road surfaces, excelling under heavy traffic and challenging climates. Its strong adhesive properties ensure a durable bond with aggregates. Beyond roads, it's versatile for waterproofing and insulation. Consistently high quality, durability, and cost-effectiveness make it a construction essential, vital for infrastructure like highways, runways, bridges, and industrial surfaces.

SVB – Bitumen VG-40 is used in highly stressed areas such as intersections, near toll booths and truck parking lots. Due to its higher viscosity, stiffer Bitumen mixes can be produced to improve resistance to shoving and other problems associated with higher temperature and heavy traffic loads.

Techinical Specification

Sl. No.	Characteristics	Paving Grades	Methods of Test
		VG 40	Ref to IS No.
1)	2)	3)	4)
(i)	Absolute viscosity at 60°C, Poises, Min	3200	IS 1206 (Part 2)
(ii)	Kinematic viscosity at 135°C, cSt, Min	400	IS 1206 (Part 3)
(iii)	Flash point,(Cleveland open cup),°C , Min	220	IS 1209
(iv)	Solubility in trichloroethylene,percent,Min	99.0	IS 1216
(v)	Penetration at 25°C, 100 g, 5 s, 0.1 mm	40 -60	IS 1203
(vi)	Softening point, (R&B), °C , Min	50	IS 1205
(vii)	**Tests on residue from thin - film oven tests/RTFOT**		
	1) Viscocity ratio at 60°C, Max	4.0	IS 1206 (Part 2)
	2) Ductility at 25°C, cm,Min,after thin-film oven test	25	IS 1208

WE ARE BEING REGISTERED WITH THE FOLLOWIG CERTIFICATE:-


UQSR.
Certificate

Sidhivinayak Bitumen Enterprises Private Limited

ISO 9001:2015

Provision of Manufacturing, Marketing and Sales of Bitumen Emulsion & Cold Mix Binder

UQSR Global Private Limited

Universal Quality Standards Registrar
www.uqsr.org


Government of India
Ministry of Micro, Small and Medium Enterprises

UDYAM
REGISTRATION CERTIFICATE

Our small hands to make you LARGE

TYPE OF ENTERPRISE	SMALL
UDYAM REGISTRATION NUMBER	
NAME OF ENTERPRISE	SIDHIVINAYAK BITUMEN ENTERPRISE PRIVATE LIMITED
SOCIAL CATEGORY OF ENTREPRENEUR	General
NAME OF UNITS	
OFFICAL ADDRESS OF ENTERPRISE	
DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE	
DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS	
NATIONAL INDUSTRY CLASSIFICATION CODE(S)	
DATE OF UDYAM REGISTRATION	

Disclaimer: This is computer generated statement, no signature required.

TEST REPORT CERTIFICATE:-


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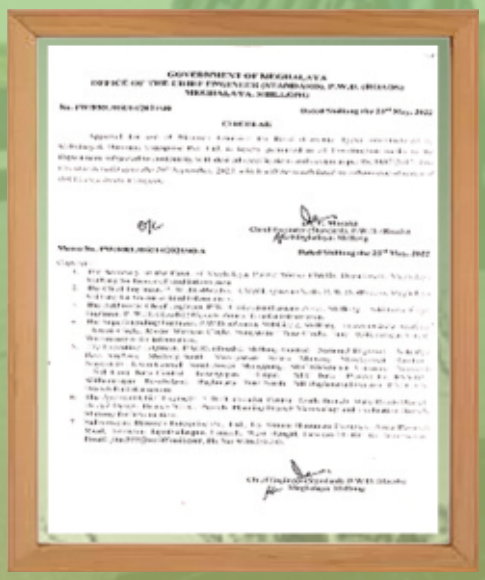

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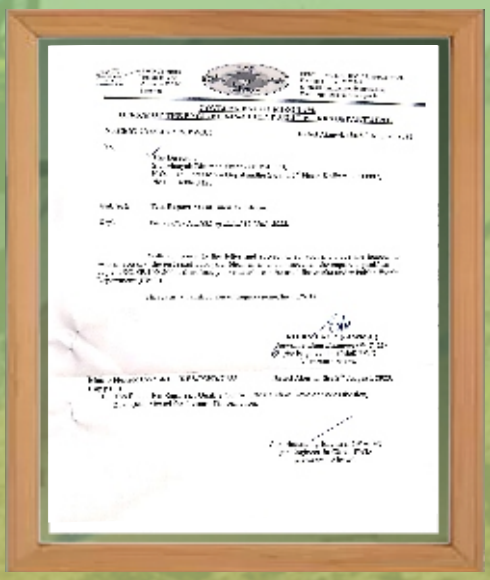

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SIDHVINAYAK BITUMEN ENTERPRISE PVT. LTD.

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REGISTERED OFFICE ADDRESS:
43 Utkalmoni Gopabandhu Sarani,1st Floor, Kolkata-700007 (W.B)

CORPORATE OFFICE:
5TH Floor Trimurti Tower,22 Hemanta Basu Sarani,Kolkata-700001 (W.B)

FACTORY ADDRESS:
Jai Sriram Hanuman Complex, Amta Ranihati Road, Islampur,
Jagatballavpur, Howrah. Pin- 711401, West Bengal

BRANCHES :
Guwahati (Assam), Bokaro (Jharkhand)

033-40063123 / 9903253123 / 9830170866

contact@sidhvinayac.com www.sidhvinayak.com

USE UNIPAVE COLD® (COLD MIX) BITUMEN TO PROMOTE AN ECO-FRIENDLY ENVIRONMENT