

ShaliEnamel

Coal Tar Enamel For Pipe Coating



STP Limited

Description

ShaliEnamel (formerly known as Coal-tar Enamel Type 1 Plasticised Pitch) is hot pour coal tar enamel coating prepared by digesting bituminous coal in a solution of pitch and high boiling coal tar distillate modified by inert mineral filler.

It conforms to IS 9912 : 2008 Type 1 & 2, BS 4164: 2002 and AWWA C 203 : 2015, Type 1.

Characteristics

Please see Annexure 1 attached herewith.

Application

Corrosion protection of pipes for carrying crude, liquid or gases by coating pipes.

Advantages

- Excellent adhesion to metal, high electrical resistivity, good flexibility, temperature susceptibility and chemical stability.
- Resistant to bacteria / marine organisms, root growth, back fill damage, petroleum products and water.
- Cathodic disbonding resistivity.

Application Methodology

- Depending upon the size of the melting kettle, cut **ShaliEnamel** into small pieces of approximately 1 to 5 kg each.
- Fill the kettle up to 40% of its capacity.
- Begin heating till the application temperature is attained. During heating, slowly add balance material upon reaching fluidity.
- Stir occasionally to avoid carbonisation at the bottom of the kettle. This will prevent coking of the material and save considerably on fuel.
- Consume the heated **ShaliEnamel** within 3 hrs once the application temperature is reached. Reject enamel held at the application temperature for more than 3 hrs, if it is found off specification.
- Ensure enamel remaining in the kettle on reheating does not exceed 10% of fresh charge.
- Resist the maximum temperature of the kettle to 260 °C. Reject enamel above this temperature.
- In the event of Plant breakdown, or any other reason, put off burner and bring down the enamel temperature to 180°C or lower keeping agitator on for a period not exceeding 8 hrs.
- Apply **ShaliEnamel** on cleaned and primed external pipe surface when metal temperature is above 7 °C to ensure that the pipe is free from dust, dirt, oil and moisture.

Health & Safety

- Avoid contact with skin / eyes and avoid swallowing.
- Ensure adequate ventilation and avoid inhalation of vapour.
- Wear suitable protective clothing, gloves and eye protection.
- In case of skin contact, rinse with plenty of clean water, then cleanse with soap and water. Do not use solvent to clean the contacted area.
- In case of eye contact, wash with plenty of clean water and seek medical advice.
- If swallowed, seek medical attention immediately. Do not induce vomiting.

Packing

Available in 250 kg drum.

Storage

Keep in cool and dry place, under shed, away from heat.

Annexure - A

	Gr IS Type 1	Gr IS Type 2 Gr BS 120/5	Gr AWWA Ty-1
Filler content by ignition, % by mass	25 – 35	25 – 35	25 – 35
Density at 25 °C, g/cm ³	1.40 – 1.60	1.40 – 1.60	1.40 – 1.60
Softening Point (ring and ball, °C)	104 – 116	120 - 130	104 – 116
Penetration (total moving mass), 10 ⁻¹ mm • 25 °C, 100 g • 48 °C, 50 g	5 – 10 12 – 30	1 – 9 3 – 16	5 – 10 12 – 30
Flow time, seconds • 230 °C • 240 °C	9 – 16 -	- 9 – 24	- -
High Temp Sag Test, 24 hrs, Max, mm • 71 °C • 80 °C	1.60 -	- 1.50	1.6 @ 70 °C -
Low temperature cracking and disbanding • -25 °C • -20 °C	None -	- None	- None @ -23.3 °C
Bend at 0 °C • First crack, min, mm ▪ Initial ▪ After heating • Disbonded area, max, mm ² ▪ Initial ▪ After heating	15 10 3000 5000	- - - -	- - - -
Impact, 25 °C, max, mm ² disbonded area • Direct • Indirect	10300 3900	- -	10323 3871
Deflection Test (initial heating) • First Crack, mm, Min • Disbond area, mm ² , Max	12 3200	- -	
Deflection Test (after heating) • First Crack, mm, Min • Disbond area, mm ² ,Max	7.5 5200	- -	
Peel, Initial & Delayed, max, mm • 30 °C • 40 °C • 50 °C • 60 °C	No Peeling 3.0	- - 3.0 3.0	No peeling @ 27 °C, 38 °C 49 °C, 60 °C & 71 °C
Cathodic disbanding in 28 days, max, mm	5	5	-
Cathodic disbanding in 30 days, max, mm	--	--	9
Electrical resistance, 10000 volts / mm	No breakdown	No breakdown	No breakdown
Dielectric strength kv/mm, Min	10	-	--
Recommended application temperature, °C	235 – 250	235 – 255	235 – 250
Recommended pipe surface profile, microns	65 – 100	65 – 100	65 – 100
Volume resistivity, ohm-cm, Min	10 ¹³	10 ¹³	10 ¹³
Service temperature, °C, Max • Interior Lining • Exterior Lining	32 71	38 80	-15 +32 -15 +71.1



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