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 ^{O}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 ^{O}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 ^{O}C, g/cm^{3}	1.40 – 1.60	1.40 – 1.60	1.40 – 1.60
Softening Point (ring and ball, ^{O}C	104 – 116	120 - 130	104 – 116
Penetration (total moving mass), 10^{-1} mm • 25 ^{O}C, 100 g • 48 ^{O}C, 50 g	 5 – 10 12 – 30	 1 – 9 3 – 16	 5 – 10 12 – 30
Flow time, seconds • 230 ^{O}C • 240 ^{O}C	 9 – 16 -	 - 9 – 24	 - -
High Temp Sag Test, 24 hrs, Max, mm • 71 ^{O}C • 80 ^{O}C	 1.60 -	 - 1.50	 1.6 @ 70 ^{O}C -
Low temperature cracking and disbanding • -25 ^{O}C • -20 ^{O}C	 None -	 - None	 - None @ -23.3 ^{O}C
Bend at 0 ^{O}C • First crack, min, mm ▪ Initial ▪ After heating • Disbonded area, max, mm^{2} ▪ Initial ▪ After heating	 15 10 3000 5000	 - - - -	 - - - -
Impact, 25 ^{O}C, max, mm^{2,} disbanded 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 ^{O}C • 40 ^{O}C • 50 ^{O}C • 60 ^{O}C	 No Peeling 3.0	 - - 3.0 3.0	 No peeling @ 27 ^{O}C, 38 ^{O}C 49 ^{O}C, 60 ^{O}C & 71 ^{O}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, ^{O}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, ^{O}C, Max • Interior Lining • Exterior Lining	 32 71	 38 80	 -15 +32 -15 +71.1

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