

ShaliEnamel P / R

Coal Tar Enamel For Pipe Coating



STP Limited

Description

ShaliEnamel P / R (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.

Coating for **ShaliEnamel P** is produced purely out of coal tar, whereas coating for **ShaliEnamel R** is produced by blending coal tar pitch. **ShaliEnamel P / R** is produced in three grades – BS 105/8, BS 120/5 (with penetration 1-9 or penetration 7-9) and AWWA C-203, 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 P / R** 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 P / R** 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 P / R** 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

- Use goggles, mask, nose cover and hand gloves during application
- Clean hands with warm soap water after application

Packing

Available in 250 kg drum.

Storage

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

Annexure - A

	Gr BS 105/8	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	105 – 116	120 - 130	104 – 116
Penetration (total moving mass), 10 ⁻¹ mm			
• 25 °C, 100 g	5 – 12	1 – 9	5 – 10
• 45 °C, 50 g	8 – 30	3 – 16	12 – 30
Flow time, seconds			
• 230 °C	9 – 16	-	-
• 240 °C	-	9 – 24	-
Sag, Max, 24 hrs, Max, mm			
• 70 °C	1.50	-	1.6 @ 70 °C
• 80 °C	-	1.50	-
Low temperature cracking and disbanding			
• -25 °C	None	-	-
• -20 °C	-	None	None @ -23.3 °C
Bend at 0 °C			
First crack, min, mm			
• Initial	15	-	-
• After heating	10	-	-
Disbonded area, max, mm ²			
• Initial	3000	-	-
• After heating	5000	-	-
Impact, 25 °C, max, mm ² disbonded area			
• Direct	10000	-	10323
• Indirect	-	-	3871
Peel, Initial & Delayed, max, mm			
• 40 °C	3.0	-	No peeling @ 27 °C, 38 °C 49 °C, 60 °C & 71 °C
• 50 °C	3.0	-	
• 60 °C	3.0	3.0	
• 70 °C	-	3.0	
Cathodic disbanding in 28 days, max, mm	5	5	-
Electrical resistance, 10000 volts / mm	No breakdown	No breakdown	No breakdown
Recommended application temperature, °C	235 – 250	235 – 255	235 – 250
Recommended pipe surface profile, microns	65 – 100	65 – 100	65 – 100
Recommended DFT of synthetic primer, microns	15 – 30	15 – 30	15 – 30
Recommended pipe pre-heating temperature, °C	40 – 50	40 – 50	40 – 50
Recommended in service temperature, °C	-25 - +65	-5 - +80	-25 - +65

Note : BS 120/5 is produced in two sub-grades with penetration 1-9 or 7-9.



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