3Layer-Primercontaining Wraparound Sleeves

Multi-layer field joint coating system

Features

- Compatible with multiple coatings
- Resistant to hot water corrosion
- Sturdy and durable
- User-friendly

Our wrap-around sleeve is specifically designed for on-site corrosion protection of buried and above-ground steel pipeline joints, making it particularly suitable for oil and gas transmission pipelines. The product is composed of a high shear strength copolymer (HMA) adhesive combined with an irradiated cross-linked HDPE (High-Density Polyethylene) backing. It exhibits excellent sealing performance, outstanding cathode disbondment resistance, and chemical corrosion resistance.

Description

The sleeve is adaptable to both conventional and high-stress environmental conditions, as well as a wide range of pipeline operating temperatures. The coating system is formulated from a high-solid-content two-component liquid epoxy resin. This system can perfectly replicate the structure and performance of factory-precoated three-layer polyethylene coatings, providing long-lasting corrosion protection for on-site circumferential pipeline welds.

Order Notification

* Single piece (pre-cut with closure and sealing patch)

* As a roll (the closure sheet and sealing strip need to be ordered separately)

* Select sleeve width that will overlap onto the mill-applied coating by 50mm (2 inches) minimum on each side of the weld joint. Take a 10% shrinkage during installation of sleeve into account when calculating minimum sleeve width.

Properties	3LWS 65 HMA	3LWS 85 HMA	Test Method
Max Operating Temperature	65°C (149°F)	85°C (185°F)	-
Min. Preheat Temperature	70°C (158°F)	70°C (158°F)	-
Backing/Black			
Elongation at Break	600%	580%	ASTM D638
Tensile Strength at Break	3480psi (24MPa)	3300psi (22.8MPa)	ASTM D638
Hardness, Shore	57 Shore D	57 Shore D	ASTM D2240
Specific Gravity	0.95g/cm^3	0.95g/cm^3	ASTM D792
Dielectric Strength	35kV/mm (900volts/mil)	35kV/mm (900volts/mil)	ASTM D149
Shrink Force	@150°C (302°F) 40psi	@150°C (302°F) 40psi	ASTM D-638
Water Absorption	0.05% 23°C (73°F) 24hr	0.05%	ASTM D570
Adhesive/Black			
Softening Point	110°C (230°F)	120°C (248°F)	ASTM E28
Lap Shear	@23°C (73°F) 2.8N/mm^2 (406psi)	@23°C (73°F) 5.6N/mm^2 (810psi)	ASTM D1002
	@60°C (140°F) 0.18N/mm^2 (26psi)	@80°C (176°F) 0.61N/mm^2 (88psi)	
Installed Sleeve			
Adhesion to Epoxy Primer	@23°C (73°F) 70N/cm (40 lb/in) @60°C (140°F) 16N/cm (9.1 lb/in)	@23°C(73°F) 78N/cm (44.5lb/in) @80°C (176°F) 10N/cm (5.7lb/in)	ISO 21809-3
Cathodic Disbondment	@23°C (73°F), 28days ≤5mm (0.20 in) radius @60°C (140°F), 28days ≤10mm (0.40in) radius Epoxy-containing primer	@23°C (73°F), 28days ≤5mm (0.20 in) radius @80°C (176°F), 28days ≤10mm (0.40in) radius Epoxy-containing primer	ISO21809-3
Impact Resistance	11J (97in.lbf)	10J (88.5in.lbf)	ASTM G14
	>6J/mm	>5J/mm	ISO21809-3
Hot Water Immersion	@60°C (140°F), 120days No delamination, no blisters or water ingress	@80°C (176°F), 120days No delamination, no blisters or water ingress	ASTM D-870
Low Temp. Flexibility	-15°C (5°F)	-25°C (-13°F)	ASTM D2671, C
Product Thickness			
Backing	1.0/1.4mm (39.37/55.12mils)	1.2/1.4mm (47.24/55.12mils)	Customizable
Adhesive	1.4/1.6mm (55.12/62.99mils)	1.5/1.8mm (59.06/70.87mils)	
Installation Completed	≥2.4/3.0mm (94.49/118.11mils)	≥2.7/3.2mm (106.30/125.98mils)	
Standard Sleeve Width	450mm (17.75inch) 500mm (19.75inch)	500mm (19.75inch) 600mm (23.62inch)	

Storage and Shelf Life

This product should be stored in a clean, dry, and well-ventilated indoor area, away from direct sunlight. During transportation, the same conditions must be maintained, and the product must be covered. The temperature range should not be lower than 0°C (32°F) or higher than +50°C (+122°F), with humidity not exceeding 75%. Store upright, with stacking height not exceeding five layers. The shelf life is three years (re-inspection required if exceeded).

General Requirements for Applications

General: The area to be coated has to be cleandry, and free from oil, grease and dust. All contamination including mill-scale has to be removed.

Degreasing: Degrease surfaces with Toluene or Heptane and e.g. a lint-free cloth.

Working face temperature: The operating surface temperature preheating treatment shall be executed in accordance with the corresponding description in the technical parameter table. Preparation of epoxy primer Thoroughly mix the epoxy resin primer according to the specified ratio in advance.

For uneven working surfaces and both sides of the weld seam, Butyl rubber filler should be used for corrective transition treatment.

Application Instruction

Step 1

Clean the working surface to ST3 or SA2½.

Step 2

Align and calibrate according to the product wiring diagram, then preheat and bond the adhesive surface with a flame gun to form a sleeve.

Step 3

After preheating the closure piece, adhere it to the seam formed by the overlap, ensuring equal pressure on the seam by the closure piece. During the operation, use a silicone rubber roller to flatten and compact it, avoiding any air bubbles. Proceed in the same manner for Step 2.

Step 4

Perform preheating treatment on the working surface temperature according to the corresponding description in the technical parameter table. Apply epoxy resin to the prepared pipe surface. Subsequently, remove the release film from the sleeve. After aligning the position, promptly use a flame to heat-shrink the sleeve starting from the middle of its width (axial direction) in a circumferential wrapping pattern. Then, heat-shrink both circumferential sides in the same manner to achieve surface shrinkage, wrapping the heat-shrinkable sleeve over the joint coated with wet epoxy resin. It is preferable to observe minimal adhesive overflow at the overlap with the original anti-corrosion layer.

Step 5

During the installation process, adjust the flame according to the operating temperature requirements, heat evenly to avoid bulging and wrinkling. Promptly treat any wrinkles or bubbles that appear using a silicone roller to achieve smoothness and compaction.

Step 6

Perform holiday detection per NACE SP0274 Handling and commissioning.

Friendly Reminder

The backfill should be kept clean and should not contain any foreign matter that could damage the coating system.

For more technical inquiries, please visit our website.

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