Tubular Heat Shrinkable Sleeves

Ring Weld Seam Integrated Heat Shrink Sleeve

Features

- Coating structure is optional
- Compatible with multiple coatings
- Factory molding
- Save installation time

Our tubular heat-shrinkable sleeves are an integrated solution specifically designed for the corrosion protection of circumferential welds in underground and above-ground steel pipelines. The product features a composite structure that combines a cross-linked polyethylene backing layer with a corrosion-resistant, temperature-sensitive adhesive.

Description

When heated and shrunk, the sleeve can securely adhere to steel substrates or those coated with an epoxy primer, forming a two-layer or three-layer sleeve coating system. Boasting unique sealing properties, resistance to cathodic disbondment, and excellent wear resistance, these sleeves deliver long-lasting corrosion protection for pipeline welds.

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).

Properties	TS 55	TS 65	Test Method
Max Operating Temperature	55°C (131°F)	65°C (150°F)	-
Min Preheat Temperature	60°C (140°F)	80°C (176°F)	-
Workface	Steel, PE, PP, FBE	Steel, PE, PP, FBE	-
Backing/Black			
Elongation at Break	600%	600%	ASTM D638
Tensile Strength at Break	3000psi (20.7MPa)	3480psi (24MPa)	ASTM D638
Hardness, Shore	46 Shore D	57 Shore D	ASTM D2240
Specific Gravity	0.94g/cm^3	0.95g/cm^3	ASTM D792
Dielectric Strength	35kV/mm (900volts/mil)	35kV/mm (900volts/mil)	ASTM D149
Water Absorption	0.04% @23°C (73°F) 24hr	0.05% @23°C (73°F) 24h	ASTM D570
Adhesive/Black			
Softening Point	81°C (177°F)	110°C (230°F)	ASTM E28
Lap Shear	@23°C (73°F) 2.5N/mm^2 (363psi)	@23°C (73°F) 2.8N/mm^2 (406psi)	ASTM D1002
	@50°C (122°F) 0.14N/mm^2 (23psi)	@60°C (140°F) 0.18N/mm^2 (26psi)	
Installed Sleeve			
Adhesion to Steel	@23°C (73°F) 30N/cm (7.1lb/in) @50°C (140°F) 9N/cm (5.1lb/in)	@23°C (73°F) 51N/cm (29.1lb/in) @60°C (140°F) 11N/cm (6.3lb/in)	ISO 21809-3
Bonding with Epoxy Primer	@23°C (73°F) 40N/cm (22.8lb/in) @50°C (140°F) 10N/cm (5.7lb/in)	@23°C (73°F) 70N/cm (40lb/in) @60°C (140°F) 16N/cm (9.1lb/in)	ISO 21809-3
Cathodic Disbondment	@23°C (73°F), 28days ≤5mm (0.20in) radius @50°C (140°F), 28days ≤10mm (0.40in) radius Epoxy-containing primer	@23°C (73°F), 28days ≤5mm (0.20in) radius @60°C (140°F), 28days ≤10mm (0.40in) radius Epoxy-containing primer	ISO21809-3
Impact Resistance	10J (88.5in.lbf)	11J (97in.lbf)	ASTM G14
Low Temp. Flexibility	-25°C (13°F)	-15°C (5°F)	ASTM D2671, C
Product Thickness			
Backing Thickness	0.7/1.1mm (27.6/43.3mils)	0.9/1.1mm (35.4/43.3mils)	Customizable
Adhesive Thickness	1.0/1.3mm (39.4/51.2mils)	1.4/1.6mm (55.1/63mils)	
Installation Completed	≥2.0/2.7mm (78.7/106.3mils)	≥2.5/3.0mm (98.4/118.1mils)	
Suitable Pipe Diameter	DN50 to 300mm (2 to 12inch)	DN50 to 300mm (2 to 12inch)	
Standard Sleeve Width	500mm (19.75inch) 600mm (23.62inch)	450mm (17.75inch) 500mm (19.75inch)	

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.

Epoxy primer preparation: When epoxy resin primer is needed, it should be mixed evenly according to the proportion of the quantity 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

Select the appropriate anticorrosion coating structure according to the pipeline requirements (two layers without primer or three layers with primer).

Step 3

The heat shrink tube is inserted into the near and far welding seam of the pipe before welding.

Step 4

After pipeline welding, the work surface must undergo preheating treatment according to the preset temperature before installing the sleeve. Remove the release film from the sleeve next. Align the position properly, then use a flame to start with circumferential heating contraction from the middle of the sleeve width (axially). Subsequently, apply circumferential heating contraction on both sides of the sleeve to ensure proper resin overflow at the interface with the original anti-corrosion layer. This process ensures a tight and secure joint.

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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