

HSS80 Heat Shrinkable Wrap-around Sleeve 3-layer Girth Weld Field Joint Coating

GUARDIAN HSS 80 Heat shrinkable wrap-around sleeve is designed for corrosion protection of buried girth weld joint steel pipelines, especially for 3PE/ FBE factory coated pipe.

BENEFITS

- **Adhesion Properties:** Excellent Epoxy Primer and Hot Melt Adhesive enabling lower installation pre-heat temperature and superior bonding to steel, PE, PP and FBE coated pipe. Offers Resistance to Cathodic Disbondment, Moisture and Shear Forces induced by soil and thermal movements.
- **Fast and Easy Application:** User friendly with cost benefits.
- **Heat Temperature Indicator:** Sleeve Backing Pattern is an Indicator for the Heat Requirement during Application.
- **Service Life:** 30+ years

APPLICATION GUIDE

	HSS 80
Standard reference	EN 12068 Class C HT UV NACE RP0303 ISO/DIS 21809-3
Compatible line coatings	FBE, 3LPE
Soil stress restriction	None
Max operating temperature	85°C
Preheat temperature	55-90°C (Wet film application)
Recommended pipe preparation	SA 2 ^{1/2}

ORDERING INFORMATION

HSS Type products are available	Product Thickness (mm)		
	Adhesive	Total Thickness (as supplied)	Total Thickness (recovered on pipe)
• As cut piece (pre-cut sleeve with separate closure patch)			
• As a roll (closure patches to be ordered separately)	1.0	1.8	2.0
	1.2	2.2	2.4
	1.5	2.5	2.8
Select sleeve width that will overlap onto the mill-applied coating by 2 inches (50mm) minimum on each side of the weld joint.	1.5	2.7	3.0
	1.7	3.2	3.5

Sleeve width (mm): 18", 20", 24", 36"
Other width (10"-36") are available, please note when make order

Other sleeve thickness (1.4-3.5mm) are available, please note when place order

STANDARD ORDERING OPTIONS

Cut Piece		*Roll form (Closure patches to be ordered separately)	
Example	HSS 80-24X18/2.5	Example	HMS 80-20X100f/2.7-RL
80	Operating temperature 80°C	80	Operating temperature 80°C
24	Outside pipe diameter in inch	100f	Roll length in feet
18	Sleeve width in inch	20	Roll width in inch
/2.5	Sleeve thickness in mm	2.7	Roll thickness in mm
		-RL	Supplied in rolls

All statements and data presented herein are given in good faith and believed to be appropriate and reliable. It is given without express or implied warrant or guarantee. Potential users of Guardian's materials are urged to conduct confirmatory trials to satisfy themselves as to the suitability of the selected product for their particular end use prior to purchase.

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PACKAGING

Part No.	Weight	Length
FG001226	450mm	30m
FG001232	600mm	30m

Other sizes are available on an indent basis.

SHELF LIFE

2 years, under correct storage conditions in a dry, well ventilated area, in original sealed cartons between -20°C and 40°C

CONFIGURATION

First Layer: Liquid epoxy primer CP-1, solvent-free, two-component.
Second Layer: High shear strength hot-melt copolymer adhesive.
Third Layer: Radiation cross-linked, high density polyethylene backing, backing with TIP (Temperature Indicator Pattern) is optional.

PROPERTIES

Property	Test Method	Typical Value
Epoxy Primer		
Adhesion of Cured Epoxy to Bare Steel	ASTM D 4541	22MPa
Thin Film Water Absorption	ASTM D 570	0.05%
Cathodic Disbondment at 95°C after 30 days	ASTM G 42	16 mm
Shrink Sleeve Backing		
Tensile Strength at 23°C	ASTM D 638	2600 psi
Elongation to Break	ASTM D 638	500%
Hardness, Shore D	ASTM D 2240	55
Volume Resistivity at 23°C	ASTM D 257	1.5x10 ¹⁵ Ohm-cm
Heat ageing at 150°C for 14 days Followed by elongation to break at 23°C	ASTM D 638	400%
Shrink Force	ASTM D 638, 150°C	43 psi
Moisture Absorption	ASTM D 570	0.05%
Shrink Sleeve Adhesive		
Ring and Ball Softening Point of Adhesive	ASTM E 28	122°C
Lap Shear Strength of Adhesive @23°C (Cross head pulling speed 2"/min @80°C)	ASTM D1002	3.5N/mm ² 0.4N/mm ²
Installed Shrink Sleeve System		
Peel Strength to Steel @23°C		10N/mm
Peel Strength to Factory Coating @23°C	EN 12068	7.0N/mm
Indentation Resistance @80°C	EN 12068, Class C	No holidays @10KV
Residual Thickness >0.6mm and no holiday at 15KV	EN 12068, Class C	15J no holidays
Impact Resistance	EN 12068, Class C	1.05 0.95
Thermal Ageing (100d/100°C)	EN 12068, Class C80	15mm r
Peel Strength layer to layer P100/PT		30KV/mm
Peel Strength to pipe surface P100/PT	EN 12068	0.05 gm/24hr/100sq.in
Cathodic Disbondment at 80°C after 28 Days	ASTM D 149	0.05%
Dielectric Breakedown @23°C for 24 Hours	ASTM E 398	0.05 inch
Moisture Vapor Transmission of Sleeve at 38°C, 90%RH	ASTM D 570	No delamination, No blisters or water under sleeve
Water Absorption @23°C for 24 Hours	TO 206	Pass
Soil Stress Creep Resistance at 80°C	ASTM D 870	-45°C
Hot Water immersion Resistance at 80°C for 120 Days		
Holiday Detection at 20KV	ASTM D 2671 C	
Low Temperature Flexibility		

HSS type products are installed with CP-1 Epoxy primer, epoxy primers are ordered separately.