

مدیریت خوردگی و حفاظت فلزات	 <p>شرکت نفت مناطق مرکزی ایران شرکت بهره برداری نفت و گاز زاگرس جنوبی</p>	اداره بازرسی فنی و حفاظت از خوردگی فلزات
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دستورالعمل مشخصات فنی کالای پوشش خودترمیمی

بر لوله های زیر زمینی SELF HEALING /VISCOELASTIC COATING

ISO_21809_3_2016 بر اساس استاندارد

۱- شرح کالا

Non-crystalline low-viscosity polyolefin based coatings in roll form used for the protection of under- and aboveground substrates against corrosion. Non-crystalline low-viscosity polyolefin based coatings consist of the following:

- a non-crystalline (fully amorphous) low-viscosity (non-crosslinked) non-reactive polyolefin (e.g. polyisobutylene, other polybutenes, or atactic polypropylene) based compound layer with a direct bond to the substrate, which can be reinforced by fabrics and/or be covered by a backing film;
- a polymeric outer wrap tape or sheet, or a heat shrinkable outer wrap material, or any other agreed material.

The purposes of the compound are to prevent corrosion of the steel surface and to prevent voids and repair small coating defects of the complete FJC (field joint coating).

۲- الزامات

- Application of the coatings shall be carried out in accordance with the APS.(application procedure specification)
- The non-crystalline low-viscosity polyolefin based compound shall be applied without tension and/or moulded in place assuring coverage and adhesion on any compatible substrate.
- The outer wrap shall be applied with tension to provide circumferential compression in accordance with the manufacturer's recommendations.
- Non-crystalline low-viscosity polyolefin based coatings shall be identified in the APS in accordance with Table 1 and shall meet the requirements of Table 2.
- Data sheets for the non-crystalline low-viscosity polyolefin based compound used as the base of the coatings shall be in accordance with Table 3 .

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Table 1 — Coating identification

Property	
Coating trade name	
Type of FJC	
Maximum and minimum service temperature	
Form of non-crystalline low-viscosity polyolefin compound	
Types, number and thicknesses of layers	
Trade names of all layers	
Nominal thickness of complete coating	
Compatible plant coatings ^a	
^a State all types of plant coating that have been tested successfully with the coating	

Table 3 — Data sheets of non-crystalline low-viscosity polyolefin compound

Property	Units	Test method
Trade name		
Prefabricated compound ^a		
* generic type of non-crystalline low-viscosity polyolefin		
* generic type of reinforcement material		
Color		
Nominal thickness of prefabricated compound		
Density		
Maximum and minimum service temperature		
Storage conditions		
* temperature range (minimum/maximum)		
Shelf life at storage temperature		
Data according to this data sheet shall be supplied for each coating component.		
^a If applicable.		


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Table 2 — Requirements for non-crystalline low-viscosity polyolefin based coatings

Property	Test temp.	Units	Requirements	Test method ISO_21809_3_2016
Non-crystalline low-viscosity polyolefin compound				
Minimum thickness	23 °C	°C	≥ specified minimum value	Annex B
Holiday detection at 5 kV/mm + 5 kV, max. 25 kV			No holiday	Annex C
Adhesion test of reinforced compound with respect to steel and to plant coating before and after thermal ageing and before and after hot-water immersion, both for 100 days at Tmax + 20 °C	23 °C	N/mm	≥ 0,04	Annex H
	T max		≥ 0,02 Cohesive separation mode Coverage ≥ 95 %	
Adhesion test of compound without reinforcement with respect to steel and to plant coating before and after thermal ageing and before and after hot-water immersion, both for 100 days at Tmax + 20 °C	23 °C		The coating shall leave a film of compound on the substrate.	Part 13.5.9 (M.3 and Annex I)
	T max			
Lap shear resistance	23 °C	N/mm ²	≥ 0,004	Annex J
	T max		≥ 0,002 Cohesive separation mode Coverage ≥ 95 %	
Specific electrical insulation resistance	23 °C	Ω.m ²	≥ 10 ⁸	Annex F
Complete coating				
Impact resistance	23 °C	J	≥ 15	Annex D
Cathodic disbondment resistance at 28 days	23 °C and Tmax	mm	0 mm, no holiday	Annex G
Indentation resistance Test pressure Residual thickness	23 °C and Tmax	N/mm ²	1,0	Annex E
		mm	≥ 0,6	
Outer wrap — Polymeric tape				
Peel strength of outer wrap layer to outer wrap layer	23 °C	N/mm	≥ 0,2	Annex L
	T max		≥ 0,02 Cohesive separation mode Coverage ≥ 95 %	
Peel strength to plant coating (if applicable)	23 °C	N/mm	≥ 1	Annex H
	T max		≥ 0,1	

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۳- مدارک و گواهینامه کالا

مدارک می بایستی شامل موارد زیر باشد:

۱- Data Sheet سازنده کالا.

۲- Test Certificate قابل ردیابی با کد محصول (Lot No., Batch No., ...).

۳- مدارک تکمیلی نظیر مدارک خرید، حمل و نقل و ... در صورت نیاز.

۴- حسب صلاحدید اداره حفاظت فنی بازرسی کالا صورت خواهد پذیرفت.