SLOVENSKI STANDARD
SIST EN ISO 21809-3:2016/oprA1:2019

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Naftna industrija in industrija zemeljskega plina - Zunanje prevleke za cevovode, zakopane v zemljo ali potopljene v vodo, v sistemih cevovodnega transporta - 3. del: Prevleke spojev - Dopolnilo A1 (ISO 21809-3:2016/DAmd 1:2019)

Petroleum and natural gas industries - External coatings for buried or submerged pipelines used in pipeline transportation systems - Part 3: Field joint coatings - Amendment 1 (ISO 21809-3:2016/DAmd 1:2019)

Erdöl- und Erdgasindustrie - Umhüllungen für erd- und wasserverlegte Rohrleitungen in Transportsystemen - Teil 3: Nachumhüllung der Schweißverbindungen - Berichtigung 1 (ISO 21809-3:2016/DAmd 1:2019)

Industries du pétrole et du gaz naturel - Revêtements externes des conduites enterrées ou immergées utilisées dans les systèmes de transport par conduites - Partie 3: Revêtements des joints soudés sur site - Amendement 1 (ISO 21809-3:2016/DAmd 1:2019)

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ICS:

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75.200	Oprema za skladiščenje nafte, naftnih proizvodov in zemeljskega plina	Petroleum products and natural gas handling equipment

SIST EN ISO 21809-3:2016/oprA1:2019 **en,fr,de**

DRAFT AMENDMENT
ISO 21809-3:2016/DAM 1

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Secretariat: **UNI**

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Petroleum and natural gas industries — External coatings for buried or submerged pipelines used in pipeline transportation systems —

Part 3:
Field joint coatings

AMENDMENT 1: Introduction of mesh-backed coating systems

Industries du pétrole et du gaz naturel — Revêtements externes des conduites enterrées ou immergées utilisées dans les systèmes de transport par conduites —

Partie 3: Revêtements des joints soudés sur site

AMENDEMENT 1: Introduction de systèmes de revêtement à renforcement maillé

ICS: 75.200

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This document was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 2, *Pipeline transportation systems*.

A list of all parts in the ISO 21809 series can be found on the ISO website.

Petroleum and natural gas industries — External coatings for buried or submerged pipelines used in pipeline transportation systems —

Part 3:
Field joint coatings

AMENDMENT 1: Introduction of mesh-backed coating systems

Page 12, Clause 8

Modify Table 1 by replacing the following row:

Clause	Code	Type of field joint coating
12	12	Cold-applied polymeric tape coatings

by

Clause	Code	Type of field joint coating
12	12A	Cold-applied tape coatings with a polymeric continuous backing
	12B	Cold-applied tape coatings with a polymeric mesh backing

Page 26, Clause 12

Replace by the new Clause 12 as follows:

12 Cold-applied polymeric tape coatings

12.1 Coating identification

Cold-applied polymeric tape coatings (FJC Types 12A or 12B) shall be identified in the APS in accordance with Table 2 and shall meet the requirements of Table 10. Data sheets for the coating materials shall be in accordance with Table 4 (primer) and Table 5 (tape).

Application instructions shall be provided by the manufacturer in accordance with Table 6.

12.2 Description of the coatings

12.2.1 Cold-applied tape coatings with a polymeric continuous backing (Type 12A)

Cold-applied tape coatings with a polymeric continuous backing consist of several layers of one or more continuous polymeric tapes, with or without a primer.

This coating type can be further subdivided into the following:

— **12A-1:** with a T_{max} not greater than 50 °C;

— **12A-2**: with a T_{max} not greater than 80 °C;

— **12A-3**: with a T_{max} not greater than 120 °C.

The T_{max} shall be stated in brackets, e.g. FJC Type 12A-1(30) or FJC Type 12A-1(50).

A T_{max} higher than 120 °C can be agreed as long as the requirements of Table 10 are met.

12.2.2 Cold-applied tape coatings with a polymeric mesh backing (Type 12B)

Cold-applied tape coatings with a polymeric mesh backing consist of a single layer or multiple layers of one or more mesh-backed tapes, with or without a primer.

The mesh-backed tape shall be composed of rubber or polymeric based adhesive and a supporting woven fabric backing.

This coating type can be further subdivided into the following:

— **12B-1:** with a T_{max} not greater than 50 °C;

— **12B-2**: with a T_{max} not greater than 80 °C;

The T_{max} shall be stated in brackets, e.g. FJC Type 12B-1(30) or FJC Type 12B-1(50).

A T_{max} higher than 80 °C can be agreed as long as the requirements of Table 10 are met.

The use of any outerwrap is possible if agreed by the manufacturer and the end user. The minimum requirements in Table 10 do not take into account any outerwrap.

12.3 Surface preparation

Surface preparation shall be carried out in accordance with the APS. The edges of the plant coating shall be bevelled and the plant coating shall be roughened for the minimum length according to the overlap on the plant coating (12.4.4).

The area to be coated shall be cleaned by abrasive blast-cleaning as described in ISO 8504-2 to a minimum grade Sa 2 according to ISO 8501-1. The profile/roughness shall be in accordance with the manufacturer's application instructions.

For FJC Type 12A-1 and Type 12-B, surface preparation can be achieved by power tool cleaning as described in ISO 8504-3 to a minimum grade St 3 according to ISO 8501-1, by agreement of the end user.

Dust contamination shall be grade 3 or better, measured in accordance with ISO 8502-3.

12.4 Coating application

12.4.1 General

Application of the coating, including the primer if applicable, shall be carried out in accordance with the APS.

12.4.2 Application of the primer

If applicable, application of the primer shall be carried out in accordance with the APS.

12.4.3 Application of polymeric tapes with continuous or mesh baking

Application shall be carried out in accordance with the APS.

As a general guide, the following application procedure shall be followed.

— Prepare the surface according to the approved method.

— Apply a thin coat of compatible primer (if any); allow the primer to dry.

— Spirally wrap the area being coated with tapes of an adequate width, employing the right overlap and using sufficient tension to ensure a complete conformability of the coating. Any tenting effect shall be prevented. A manual application tool should be used to achieve these goals.

A single piece of wrapping wide enough to cover the required area may be used in certain circumstances (in particular, for offshore installation on a conventional barge).

12.4.4 Overlaps

The minimum tape overlap shall be in accordance with Table 7, or the manufacturer's required overlap (Table 6) if greater.

The overlap of tape on plant-applied coating shall be in accordance with the manufacturer's application instructions (Table 6) and shall be at least 50 mm.

12.5 Testing of the applied coatings

12.5.1 General

The tests in 12.5.2 to 12.5.11 shall be carried out for production quality control, and for PQT and PPT if required.

12.5.2 Thickness

The nominal thickness is the calculated sum of the thickness of all the layers of the coating before application. The minimum thickness of the coating on the body of the joint shall be not less than 90 % of the nominal value or as otherwise agreed to by the purchaser.

Unless otherwise agreed with the purchaser, the minimum thickness on the weld cap shall be not less than 0,6 mm.

NOTE The coating thickness on the weld cap is normally less than on the body because some of the polymeric adhesive flows from the weld cap to the body, both during and after the application. This is necessary to prevent voids in the coating and is not detrimental to the corrosion protection.

The coating thickness shall be measured using the method given in Annex B.

12.5.3 Holiday detection

The entire surface of the coated joint shall be checked for holidays or other discontinuities according to the method defined in Annex C.

The voltage of the holiday detector shall be set at the following values:

— 5 kV/mm + 5 kV at a maximum of 25 kV for cold-applied polymeric continuous tape coatings (Type 12A)

— 5 kV/mm at a maximum of 15 kV for cold-applied polymeric mesh-backed tape coatings (Type 12B).

Holidays shall be repaired in accordance with the APS.

12.5.4 Impact resistance

The impact resistance shall be measured using the method given in Annex D and shall meet the requirements of Table 10.

12.5.5 Indentation resistance

The indentation resistance shall be measured using the method given in Annex E and shall meet the requirements of Table 10.

12.5.6 Cathodic disbondment

The cathodic disbondment shall be measured using the method given in Annex G.

The cathodic disbondment after 28 days at 23 °C shall meet the requirements of Table 10. A test duration of 48 h instead of 28 days can be used for PPT provided that the test temperature is increased to 65 °C and a comparison of results is performed during PQT.

The maximum cathodic disbondment after 28 days at maximum service temperature shall meet the requirements of Table 10. It shall be agreed between the end user and the applicator for Type 12A.