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European Technical Assessment

**ETA 25/1246
of 16/12/2025**

General Part

Technical Assessment Body issuing the European Technical Assessment:

Technical and Test Institute for Construction Prague

Trade name of the construction products:

Three-layer polyethylene-based (LDPE and HDPE) coating for corrosion protection of steel pipes

Product family to which the construction product belongs:

Product area code: 3 Membranes, including liquid applied and kits (for water and/or water vapour control)

Manufacturer:

NOVÁ HUŤ s.r.o., Tube plant
Vratimovská 689/117, Kunčice
719 00 Ostrava, Czech Republic

Manufacturing plant(s):

NOVÁ HUŤ s.r.o., Tube plant
Vratimovská 689/117, Kunčice
719 00 Ostrava, Czech Republic

This European Technical Assessment contains:

15 pages including 1 Annex which form an integral part of this assessment

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:

EAD 030588-00-1202 Three-layer polyethylene-based (PE) coating for corrosion protection of steel pipes

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Specific part

1. Technical description of the product

1.1 General

The plant-applied external three-layer coating on polyethylene (LDPE and HDPE) basis according to EN ISO 21809-1, determined for steel pipes for natural gas and petroleum industry and other use.

The polyethylene-based coating is intended to be used for corrosion protection of welded steel pipes of external diameter from 323.9 mm up to 1020.0 mm, thickness from 5.0 mm up to 16.0 mm and/or seamless steel pipes of external diameter from 21.3 mm up to 273.1 mm, thickness from 2.3 mm up to 25.0 mm for pipeline transportation systems in petroleum and/or natural gas industries. Complete coating is applied in manufacturing plant under specified conditions.

The coating covered by this ETA is based on polyethylene and contents 3 layers:

1. layer: continuously applied epoxy covering. Material type can be either Eurokote 712 PP-S or Eurokote 712 PP-F;
2. layer: adhesive applied by extrusion. Material type is Coesive L8.92.8 (u);
3. layer: polyethylene top layer applied by extrusion. Material type can be low-density polyethylene (Luxene LDPE AM97) or high-density polyethylene (Luxene HDPE 2050e).

The coating covered by this ETA is intended to be capable of withstanding the temperature range:

1. Coating group A with top layer made of LDPE with nominal density min. 930 kg/m³;
2. Coating group B with top layer made of HDPE with nominal density min. 941 kg/m³.

The coating thickness is a function of coating group and linear pipe weight P_m :

P_m [kg/m]	Total coating thickness of PE based layer [mm]					
	Group A1	Group A2	Group A3	Group B1	Group B2	Group B3
$P_m \leq 15$	1,8	2,1	2,6	1,3	1,8	2,3
$15 < P_m \leq 50$	2,0	2,4	3,0	1,5	2,1	2,7
$50 < P_m \leq 130$	2,4	2,8	3,5	1,8	2,5	3,1
$130 < P_m \leq 300$	2,6	3,2	3,9	2,2	2,8	3,5
$P_m > 300$	3,2	3,8	4,7	2,5	3,3	4,2

The conversion table with the pipe dimensions and their linear weight is given in the Annex A of this ETA.

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professionals.

2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

Three-layer polyethylene-based (LDPE and HDPE) coating for corrosion protection of welded and/or seamless steel pipes for pipeline transportation systems in petroleum and/or natural gas industries.

The coating covered by this ETA is intended to be capable of withstanding the temperature range:

1. Coating group A - LDPE: -20 °C up to +60 °C
2. Coating group B - HDPE: -40 °C up to +80 °C

Complete coating is applied in manufacturing plant under specified conditions.

In the sense of Clause 7.3 of EN ISO 21809-1, different thicknesses of coating, as specified in 1, can be used as follows:

1. Thicknesses of group 1: for lighter installation / laying conditions (for example sandy soils, prepared backfill with selected materials);
2. Thicknesses of group 2: for standard conditions (for example clay soils, backfill made by native soil, not coarse materials);
3. Thicknesses of group 3 or thicknesses higher: as a minimum for more severe environments and installation / laying conditions (for example offshore, rocky soils).

The assessment methods included or referred to in EAD have been written based on the manufacturer's request to take into account a working life of the three-layer polyethylene-based (PE) coating for corrosion protection of steel pipes for the intended use of 25 years when installed in the works (provided that the discontinuous plastic roofing is subject to appropriate installation (see 1)). These provisions are based upon the current state of the art and the available knowledge and experience.

When assessing the product, the intended use as foreseen by the manufacturer shall be taken into account. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works¹.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee but are regarded only as a means for expressing the expected economically reasonable working life of the product.

¹ The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real working life of the product may also be shorter than referred to above.

3. Performance of the product and references to the methods used for its assessment

The essential characteristics of three-layer polyethylene-based coating for corrosion protection of steel pipes and methods of verification were carried out in compliance with the *EAD 030588-00-1202: Three-layer polyethylene-based (PE) coating for corrosion protection of steel pipes*. Expression of product performance is stated in Table No. 1 - Table No. 4.

Table No. 1: epoxidy Eurokote 712 PP-S, adhesive Coesive L8.92.8 (u), polyethylene Luxene LDPE AM97

No.	Essential characteristic and method of verification and assessment	Expression of product performance					
Safety in case of fire (BWR 2)							
1	Reaction to fire (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	No performance assessed					
Safety and accessibility in use (BWR 4)							
2	Total coating thickness (EAD 030588-00-1202, Cl. 2.2.2)	Measured values [mm] *					Average value [mm]
		4,8	5,6	6,0	5,7	5,6	5,3
		4,9	4,8	5,5	5,3	5,2	
		* linear pipe weight was 158,82 kg/m					
3	Apparent density of PE coating (EAD 030588-00-1202, Cl. 2.2.3)	944 kg/m ³					
4	Continuity of applied coating (EAD 030588-00-1202, Cl. 2.2.4)	No defects identified during 15 minutes of manufacturing					
5	Impact strength at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.5)	Impact strength > 5 J/mm					
		All ten defective points without penetration					
6	Indentation (EAD 030588-00-1202, Cl. 2.2.6)	Temperature [°C]		Measured values [mm]			
		23 °C		0,07	0,05	0,08	
		60 °C		0,12	0,12	0,13	
7	Stress at yield and strain at break at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.7)	Direction		Stress at yield [MPa]		Strain at break [%]	
		Longitudinal		12,6		517	
		Transversal		12,1		> 529	

No.	Essential characteristic and method of verification and assessment	Expression of product performance				
8	Peel strength (EAD 030588-00-1202, Cl. 2.2.8)	Temperature [°C]	Measured values [N/mm]		Type of break	
		23 °C	28,6		Disbonding between epoxy and adhesive	
		60 °C	37,6		Disbonding between epoxy and adhesive	
9	Difference in the glass transition temperature ΔT_g of epoxy material (EAD 030588-00-1202, Cl. 2.2.9)	-0,7 °C				
10	Product stability during application of the PE top layer process (EAD 030588-00-1202, Cl. 2.2.10)	Measured values [%]				
		-2,381	+4,348		+8,511	
11	Cathodic disbondment (EAD 030588-00-1202, Cl. 2.2.11)	Test condition	Measured values [mm]			Average value [mm]
		23°C/28 days; -1,38 V	2,5	2,9	3,0	2,8
		65°C/24 hours; -3,38 V	1,7	1,9	2,1	1,9
		60°C/28 days; -1,38 V	13,8	14,6	13,9	14,1
12	Flexibility (EAD 030588-00-1202, Cl. 2.2.12)	No visible cracks				
13	Resistance to hot water immersion (EAD 030588-00-1202, Cl. 2.2.13)	Measured values [mm]				
		0,0	0,0		0,0	
14	Vicat softening temperature (EAD 030588-00-1202, Cl. 2.2.14)	94,7 °C				
15	UV resistance (EAD 030588-00-1202, Cl. 2.2.15)	$\Delta MFR = 4,59 \%$				
16	Thermal ageing (EAD 030588-00-1202, Cl. 2.2.16)	No performance assessed				

Table No. 2: epoxidy Eurokote 712 PP-F, adhesive Coesive L8.92.8 (u), polyethylene Luxene LDPE AM97

No.	Essential characteristic and method of verification and assessment	Expression of product performance					
Safety in case of fire (BWR 2)							
1	Reaction to fire (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	No performance assessed					
Safety and accessibility in use (BWR 4)							
2	Total coating thickness (EAD 030588-00-1202, Cl. 2.2.2)	Measured values [mm] *					Average value [mm]
		3,0	3,1	3,0	3,0	3,1	3,1
		3,2	3,3	3,3	3,1	3,1	
		* linear pipe weight was 22,69 kg/m					
3	Apparent density of PE coating (EAD 030588-00-1202, Cl. 2.2.3)	944 kg/m³					
4	Continuity of applied coating (EAD 030588-00-1202, Cl. 2.2.4)	No defects identified during 15 minutes of manufacturing					
5	Impact strength at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.5)	Impact strength > 5 J/mm					
		All ten defective points without penetration					
6	Indentation (EAD 030588-00-1202, Cl. 2.2.6)	Temperature [°C]		Measured values [mm]			
		23 °C		0,05	0,08	0,09	
		60 °C		0,12	0,14	0,15	
7	Stress at yield and strain at break at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.7)	Direction		Stress at yield [MPa]		Strain at break [%]	
		Longitudinal		12,6		517	
		Transversal		12,1		> 529	
8	Peel strength (EAD 030588-00-1202, Cl. 2.2.8)	Temperature [°C]		Measured values [N/mm]		Type of break	
		23 °C		21,6		Disbonding between epoxy and adhesive	
		60 °C		16,5		Disbonding between epoxy and adhesive	

No.	Essential characteristic and method of verification and assessment	Expression of product performance				
9	Difference in the glass transition temperature ΔT_g of epoxy material (EAD 030588-00-1202, Cl. 2.2.9)	0,7 °C				
10	Product stability during application of the PE top layer process (EAD 030588-00-1202, Cl. 2.2.10)	Measured values [%]				
		+8,333	+2,970		+6,250	
11	Cathodic disbondment (EAD 030588-00-1202, Cl. 2.2.11)	Test condition	Measured values [mm]			Average value [mm]
		23°C/28 days; -1,38 V	2,9	3,4	3,9	3,4
		65°C/24 hours; -3,38 V	2,0	1,8	1,9	1,9
		60°C/28 days; -1,38 V	8,8	9,2	8,7	8,9
12	Flexibility (EAD 030588-00-1202, Cl. 2.2.12)	No visible cracks				
13	Resistance to hot water immersion (EAD 030588-00-1202, Cl. 2.2.13)	Measured values [mm]				
		0,0	0,0		0,0	
14	Vicat softening temperature (EAD 030588-00-1202, Cl. 2.2.14)	94,7 °C				
15	UV resistance (EAD 030588-00-1202, Cl. 2.2.15)	$\Delta MFR = 4,59 \%$				
16	Thermal ageing (EAD 030588-00-1202, Cl. 2.2.16)	No performance assessed				

Table No. 3: epoxidy Eurokote 712 PP-F, adhesive Coesive L8.92.8 (u), polyethylene Luxene HDPE 2050e

No.	Essential characteristic and method of verification and assessment	Expression of product performance					
Safety in case of fire (BWR 2)							
1	Reaction to fire (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	No performance assessed					
Safety and accessibility in use (BWR 4)							
2	Total coating thickness (EAD 030588-00-1202, Cl. 2.2.2)	Measured values [mm] *					Average value [mm]
		3,2	3,3	3,3	3,2	3,2	3,3
		3,4	3,2	3,2	3,3	3,2	
		* linear pipe weight was 65,29 kg/m					
3	Apparent density of PE coating (EAD 030588-00-1202, Cl. 2.2.3)	949 kg/m³					
4	Continuity of applied coating (EAD 030588-00-1202, Cl. 2.2.4)	No defects identified during 15 minutes of manufacturing					
5	Impact strength at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.5)	Impact strength > 7 J/mm					
		All ten defective points without penetration					
6	Indentation (EAD 030588-00-1202, Cl. 2.2.6)	Temperature [°C]		Measured values [mm]			
		23 °C		0,06	0,06	0,07	
		80 °C		0,14	0,12	0,14	
7	Stress at yield and strain at break at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.7)	Direction		Stress at yield [MPa]		Strain at break [%]	
		Longitudinal		19,2		930	
		Transversal		19,7		> 530	
8	Peel strength (EAD 030588-00-1202, Cl. 2.2.8)	Temperature [°C]		Measured values [N/mm]		Type of break	
		23 °C		16,3		Disbonding between epoxy and adhesive	
		80 °C		10,1		Disbonding between epoxy and adhesive	

No.	Essential characteristic and method of verification and assessment	Expression of product performance				
9	Difference in the glass transition temperature ΔT_g of epoxy material (EAD 030588-00-1202, Cl. 2.2.9)	-1,2 °C				
10	Product stability during application of the PE top layer process (EAD 030588-00-1202, Cl. 2.2.10)	Measured values [%]				
		+4,396	+6,667		+3,371	
11	Cathodic disbondment (EAD 030588-00-1202, Cl. 2.2.11)	Test condition	Measured values [mm]			Average value [mm]
		23°C/28 days; -1,38 V	3,8	3,4	3,0	3,4
		65°C/24 hours; -3,38 V	2,2	2,0	1,8	2,0
		80°C/28 days; -1,38 V	14,0	14,6	14,3	14,3
12	Flexibility (EAD 030588-00-1202, Cl. 2.2.12)	No visible cracks				
13	Resistance to hot water immersion (EAD 030588-00-1202, Cl. 2.2.13)	Measured values [mm]				
		0,0	0,0		0,0	
14	Vicat softening temperature (EAD 030588-00-1202, Cl. 2.2.14)	112,6 °C				
15	UV resistance (EAD 030588-00-1202, Cl. 2.2.15)	$\Delta MFR = 3,07 \%$				
16	Thermal ageing (EAD 030588-00-1202, Cl. 2.2.16)	No performance assessed				

Table No. 4: epoxidy Eurokote 712 PP-S, adhesive Coesive L8.92.8 (u), polyethylene Luxene HDPE 2050e

No.	Essential characteristic and method of verification and assessment	Expression of product performance					
Safety in case of fire (BWR 2)							
1	Reaction to fire (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	No performance assessed					
Safety and accessibility in use (BWR 4)							
2	Total coating thickness (EAD 030588-00-1202, Cl. 2.2.2)	Measured values [mm] *					Average value [mm]
		4,6	4,8	4,6	4,5	4,7	4,6
		4,7	4,7	4,5	4,6	4,6	
		* linear pipe weight was 158,82 kg/m					
3	Apparent density of PE coating (EAD 030588-00-1202, Cl. 2.2.3)	949 kg/m³					
4	Continuity of applied coating (EAD 030588-00-1202, Cl. 2.2.4)	No defects identified during 15 minutes of manufacturing					
5	Impact strength at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.5)	Impact strength > 7 J/mm					
		All ten defective points without penetration					
6	Indentation (EAD 030588-00-1202, Cl. 2.2.6)	Temperature [°C]		Measured values [mm]			
		23 °C		0,05	0,06	0,06	
		80 °C		0,16	0,17	0,19	
7	Stress at yield and strain at break at (23 ± 3) °C (EAD 030588-00-1202, Cl. 2.2.7)	Direction		Stress at yield [MPa]		Strain at break [%]	
		Longitudinal		19,2		930	
		Transversal		19,7		> 530	
8	Peel strength (EAD 030588-00-1202, Cl. 2.2.8)	Temperature [°C]		Measured values [N/mm]		Type of break	
		23 °C		26,9		Disbonding between epoxy and adhesive	
		80 °C		14,1		Disbonding between epoxy and adhesive	

No.	Essential characteristic and method of verification and assessment	Expression of product performance				
9	Difference in the glass transition temperature ΔT_g of epoxy material (EAD 030588-00-1202, Cl. 2.2.9)	-1,7 °C				
10	Product stability during application of the PE top layer process (EAD 030588-00-1202, Cl. 2.2.10)	Measured values [%]				
		+1,111	+2,381		+4,545	
11	Cathodic disbondment (EAD 030588-00-1202, Cl. 2.2.11)	Test condition	Measured values [mm]			Average value [mm]
		23°C/28 days; -1,38 V	2,6	2,8	3,0	2,8
		65°C/24 hours; -3,38 V	1,9	1,7	2,1	1,9
		80°C/28 days; -1,38 V	14,8	14,4	14,6	14,6
12	Flexibility (EAD 030588-00-1202, Cl. 2.2.12)	No visible cracks				
13	Resistance to hot water immersion (EAD 030588-00-1202, Cl. 2.2.13)	Measured values [mm]				
		0,0	0,0		0,0	
14	Vicat softening temperature (EAD 030588-00-1202, Cl. 2.2.14)	112,6 °C				
15	UV resistance (EAD 030588-00-1202, Cl. 2.2.15)	$\Delta MFR = 3,07 \%$				
16	Thermal ageing (EAD 030588-00-1202, Cl. 2.2.16)	No performance assessed				

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the European Commission decision 1999/472/EC, for the product, not subjected to regulations on reaction to fire and depending on the class of reaction to fire according to Regulation (EU) No. 2016/364 the **AVCP system 3** (further described in Annex V to Regulation (EU) No 305/2011 as amended) applies.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

The manufacturer shall perform a permanent internal factory production control based on the control plan. The Control Plan specifies the type, test method, criteria and frequency of tests conducted on the final product.

The control plan for the manufacturer/corner stones (factory production control) is specified in Clause 3.2 of EAD 030588-00-1202 *Three-layer polyethylene-based (PE) coating for corrosion protection of steel pipes*. Manufacturer and Technical and Test Institute for Construction Prague have agreed a control plan which is deposited with the Technical and Test Institute for Construction Prague in documentation which accompanies the ETA.

Issued in Prague on 16.12.2025

By
Ing. Jiří Studnička, Ph.D.
Head of the Technical Assessment Body

6. List of annexes of European Technical Assessment 25/1246

Annex A: Conversion table of pipe dimensions and their linear weight

Total Annexes: 2 pages

Pipe dimensions and its linear weight

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