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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 contains 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/m<sup>3</sup>;
2. Coating group B with top layer made of HDPE with nominal density min. 941 kg/m<sup>3</sup>.

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 works<sup>1</sup>.

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.

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<sup>1</sup> 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: epoxidic Eurokote 712 PP-S, adhesive Cohesive 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	<b>Reaction to fire</b> (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	<b>No performance assessed</b>				
Safety and accessibility in use (BWR 4)						
2	<b>Total coating thickness</b> (EAD 030588-00-1202, Cl. 2.2.2)	<b>Measured values [mm] *</b>				
		4,8	5,6	6,0	5,7	5,6
* linear pipe weight was 158,82 kg/m						
3	<b>Apparent density of PE coating</b> (EAD 030588-00-1202, Cl. 2.2.3)	<b>944 kg/m<sup>3</sup></b>				
4	<b>Continuity of applied coating</b> (EAD 030588-00-1202, Cl. 2.2.4)	<b>No defects identified during 15 minutes of manufacturing</b>				
5	<b>Impact strength at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.5)	<b>Impact strength &gt; 5 J/mm</b>				
		<b>All ten defective points without penetration</b>				
6	<b>Indentation</b> (EAD 030588-00-1202, Cl. 2.2.6)	<b>Temperature [°C]</b>		<b>Measured values [mm]</b>		
		23 °C		0,07	0,05	0,08
		60 °C		0,12	0,12	0,13
7	<b>Stress at yield and strain at break at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.7)	<b>Direction</b>		<b>Stress at yield [MPa]</b>		<b>Strain at break [%]</b>
		Longitudinal		12,6		517
		Transversal		12,1		> 529

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

Table No. 2: epoxid 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	<b>Reaction to fire</b> (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	<b>No performance assessed</b>				
Safety and accessibility in use (BWR 4)						
2	<b>Total coating thickness</b> (EAD 030588-00-1202, Cl. 2.2.2)	<b>Measured values [mm] *</b>				
		3,0	3,1	3,0	3,0	3,1
		3,2	3,3	3,3	3,1	3,1
* linear pipe weight was 22,69 kg/m						
3	<b>Apparent density of PE coating</b> (EAD 030588-00-1202, Cl. 2.2.3)	<b>944 kg/m<sup>3</sup></b>				
4	<b>Continuity of applied coating</b> (EAD 030588-00-1202, Cl. 2.2.4)	<b>No defects identified during 15 minutes of manufacturing</b>				
5	<b>Impact strength at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.5)	<b>Impact strength &gt; 5 J/mm</b>				
		<b>All ten defective points without penetration</b>				
6	<b>Indentation</b> (EAD 030588-00-1202, Cl. 2.2.6)	<b>Temperature [°C]</b>	<b>Measured values [mm]</b>			
		23 °C	0,05	0,08	0,09	
		60 °C	0,12	0,14	0,15	
7	<b>Stress at yield and strain at break at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.7)	<b>Direction</b>	<b>Stress at yield [MPa]</b>		<b>Strain at break [%]</b>	
		Longitudinal	12,6		517	
		Transversal	12,1		> 529	
8	<b>Peel strength</b> (EAD 030588-00-1202, Cl. 2.2.8)	<b>Temperature [°C]</b>	<b>Measured values [N/mm]</b>		<b>Type of break</b>	
		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	<b>Difference in the glass transition temperature <math>\Delta T_g</math> of epoxy material</b> (EAD 030588-00-1202, Cl. 2.2.9)	<b>0,7 °C</b>				
10	<b>Product stability during application of the PE top layer process</b> (EAD 030588-00-1202, Cl. 2.2.10)	<b>Measured values [%]</b>				
		<b>+8,333</b>	<b>+2,970</b>	<b>+6,250</b>		
11	<b>Cathodic disbondment</b> (EAD 030588-00-1202, Cl. 2.2.11)	Test condition	Measured values [mm]			Average value [mm]
		<b>23°C/28 days; -1,38 V</b>	<b>2,9</b>	<b>3,4</b>	<b>3,9</b>	<b>3,4</b>
		<b>65°C/24 hours; -3,38 V</b>	<b>2,0</b>	<b>1,8</b>	<b>1,9</b>	<b>1,9</b>
		<b>60°C/28 days; -1,38 V</b>	<b>8,8</b>	<b>9,2</b>	<b>8,7</b>	<b>8,9</b>
12	<b>Flexibility</b> (EAD 030588-00-1202, Cl. 2.2.12)	<b>No visible cracks</b>				
13	<b>Resistance to hot water immersion</b> (EAD 030588-00-1202, Cl. 2.2.13)	<b>Measured values [mm]</b>				
		<b>0,0</b>	<b>0,0</b>	<b>0,0</b>		
14	<b>Vicat softening temperature</b> (EAD 030588-00-1202, Cl. 2.2.14)	<b>94,7 °C</b>				
15	<b>UV resistance</b> (EAD 030588-00-1202, Cl. 2.2.15)	<b><math>\Delta MFR = 4,59 \%</math></b>				
16	<b>Thermal ageing</b> (EAD 030588-00-1202, Cl. 2.2.16)	<b>No performance assessed</b>				

Table No. 3: epoxyd Eurokote 712 PP-F, adhesive Cohesive 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	<b>Reaction to fire</b> (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	<b>No performance assessed</b>				
Safety and accessibility in use (BWR 4)						
2	<b>Total coating thickness</b> (EAD 030588-00-1202, Cl. 2.2.2)	<b>Measured values [mm] *</b>				
		3,2	3,3	3,3	3,2	3,2
		3,4	3,2	3,2	3,3	3,2
* linear pipe weight was 65,29 kg/m						
3	<b>Apparent density of PE coating</b> (EAD 030588-00-1202, Cl. 2.2.3)	<b>949 kg/m<sup>3</sup></b>				
4	<b>Continuity of applied coating</b> (EAD 030588-00-1202, Cl. 2.2.4)	<b>No defects identified during 15 minutes of manufacturing</b>				
5	<b>Impact strength at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.5)	<b>Impact strength &gt; 7 J/mm</b>				
		<b>All ten defective points without penetration</b>				
6	<b>Indentation</b> (EAD 030588-00-1202, Cl. 2.2.6)	<b>Temperature [°C]</b>	<b>Measured values [mm]</b>			
		23 °C	0,06	0,06	0,07	
		80 °C	0,14	0,12	0,14	
7	<b>Stress at yield and strain at break at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.7)	<b>Direction</b>	<b>Stress at yield [MPa]</b>		<b>Strain at break [%]</b>	
		Longitudinal	19,2		930	
		Transversal	19,7		> 530	
8	<b>Peel strength</b> (EAD 030588-00-1202, Cl. 2.2.8)	<b>Temperature [°C]</b>	<b>Measured values [N/mm]</b>		<b>Type of break</b>	
		23 °C	16,3		<b>Disbonding between epoxy and adhesive</b>	
		80 °C	10,1		<b>Disbonding between epoxy and adhesive</b>	

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

Table No. 4: epoxyd Eurokote 712 PP-S, adhesive Cohesive 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	<b>Reaction to fire</b> (EAD 030588-00-1202, Cl. 2.2.1, Commission Delegated Regulation (EU) 2016/364)	<b>No performance assessed</b>				
Safety and accessibility in use (BWR 4)						
2	<b>Total coating thickness</b> (EAD 030588-00-1202, Cl. 2.2.2)	<b>Measured values [mm] *</b>				
		4,6	4,8	4,6	4,5	4,7
		4,7	4,7	4,5	4,6	4,6
* linear pipe weight was 158,82 kg/m						
3	<b>Apparent density of PE coating</b> (EAD 030588-00-1202, Cl. 2.2.3)	<b>949 kg/m<sup>3</sup></b>				
4	<b>Continuity of applied coating</b> (EAD 030588-00-1202, Cl. 2.2.4)	<b>No defects identified during 15 minutes of manufacturing</b>				
5	<b>Impact strength at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.5)	<b>Impact strength &gt; 7 J/mm</b>				
		<b>All ten defective points without penetration</b>				
6	<b>Indentation</b> (EAD 030588-00-1202, Cl. 2.2.6)	<b>Temperature [°C]</b>	<b>Measured values [mm]</b>			
		23 °C	<b>0,05</b>	<b>0,06</b>	<b>0,06</b>	
		80 °C	<b>0,16</b>	<b>0,17</b>	<b>0,19</b>	
7	<b>Stress at yield and strain at break at (23 ± 3) °C</b> (EAD 030588-00-1202, Cl. 2.2.7)	<b>Direction</b>	<b>Stress at yield [MPa]</b>		<b>Strain at break [%]</b>	
		<b>Longitudinal</b>	<b>19,2</b>		<b>930</b>	
		<b>Transversal</b>	<b>19,7</b>		<b>&gt; 530</b>	
8	<b>Peel strength</b> (EAD 030588-00-1202, Cl. 2.2.8)	<b>Temperature [°C]</b>	<b>Measured values [N/mm]</b>		<b>Type of break</b>	
		23 °C	<b>26,9</b>		<b>Disbonding between epoxy and adhesive</b>	
		80 °C	<b>14,1</b>		<b>Disbonding between epoxy and adhesive</b>	

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

#### **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

## Annex A of the ETA 25/1246

### Pipe dimensions and its linear weight

Outer diameter D mm line			Wall thickness T, mm																				
			0,5	0,6	0,8	1	1,2	1,4	1,6	1,8	2	2,3	2,6	2,9	3,2	3,6	4	4,5	5	5,4	5,6	6,3	
1	2	3	Pipe weight, kg/m																				
10,2			0,120	0,142	0,185	0,227	0,266	0,304	0,339	0,373	0,404	0,448	0,487										
12			0,142	0,169	0,221	0,271	0,320	0,366	0,410	0,453	0,493	0,550	0,603	0,651	0,694								
12,7			0,150	0,179	0,235	0,289	0,340	0,390	0,438	0,484	0,528	0,590	0,648	0,701	0,750								
13,5			0,160	0,191	0,251	0,308	0,364	0,418	0,470	0,519	0,567	0,636	0,699	0,758	0,813	0,879							
	14		0,166	0,198	0,260	0,321	0,379	0,435	0,489	0,542	0,592	0,664	0,731	0,794	0,852	0,923							
16			0,191	0,226	0,300	0,370	0,438	0,504	0,568	0,630	0,691	0,777	0,859	0,937	1,01	1,10	1,18						
17,2			0,206	0,246	0,324	0,400	0,474	0,546	0,616	0,684	0,750	0,845	0,936	1,02	1,10	1,21	1,3	1,41					
	18		0,216	0,257	0,339	0,419	0,497	0,573	0,647	0,719	0,789	0,891	0,987	1,08	1,17	1,28	1,38	1,50					
19			0,228	0,272	0,359	0,444	0,527	0,608	0,687	0,764	0,838	0,947	1,05	1,15	1,25	1,37	1,48	1,61	1,73				
20			0,240	0,287	0,379	0,469	0,556	0,642	0,726	0,808	0,888	1,00	1,12	1,22	1,33	1,46	1,58	1,72	1,85				
21,3			0,256	0,306	0,404	0,501	0,595	0,687	0,777	0,866	0,952	1,08	1,20	1,32	1,43	1,57	1,71	1,86	2,01	2,12			
	22		0,265	0,317	0,418	0,518	0,616	0,711	0,805	0,897	0,996	1,12	1,24	1,37	1,48	1,63	1,78	1,94	2,10	2,21			
25			0,302	0,361	0,477	0,592	0,704	0,815	0,923	1,03	1,13	1,29	1,44	1,58	1,72	1,90	2,07	2,28	2,47	2,61	2,68	2,91	
	25,4		0,307	0,367	0,485	0,602	0,716	0,829	0,939	1,05	1,15	1,31	1,46	1,61	1,75	1,94	2,11	2,32	2,52	2,66	2,73	2,97	
26,9			0,326	0,389	0,515	0,639	0,761	0,880	0,998	1,11	1,23	1,40	1,56	1,72	1,87	2,07	2,26	2,49	2,70	2,86	2,94	3,20	
	30		0,364	0,435	0,576	0,715	0,852	0,987	1,12	1,25	1,38	1,57	1,76	1,94	2,11	2,34	2,56	2,83	3,08	3,28	3,27	3,68	
31,8			0,386	0,462	0,612	0,760	0,906	1,05	1,19	1,33	1,47	1,67	1,87	2,07	2,26	2,50	2,74	3,03	3,30	3,52	3,62	3,96	
32			0,388	0,465	0,616	0,765	0,911	1,06	1,20	1,34	1,48	1,68	1,89	2,08	2,27	2,52	2,76	3,05	3,33	3,54	3,65	3,99	
33,7			0,409	0,490	0,649	0,806	0,962	1,12	1,27	1,42	1,56	1,78	1,99	2,20	2,41	2,67	2,93	3,24	3,54	3,77	3,88	4,26	
	35		0,425	0,509	0,675	0,838	1,00	1,16	1,32	1,47	1,63	1,85	2,08	2,30	2,51	2,79	3,06	3,38	3,70	3,94	4,06	4,46	
36			0,462	0,553	0,734	0,912	1,09	1,26	1,44	1,61	1,78	2,02	2,27	2,51	2,75	3,05	3,35	3,72	4,07	4,34	4,47	4,93	
40			0,487	0,583	0,773	0,962	1,15	1,33	1,52	1,70	1,87	2,14	2,40	2,65	2,90	3,23	3,55	3,94	4,32	4,61	4,75	5,24	
42,4			0,517	0,619	0,821	1,02	1,22	1,42	1,61	1,80	1,99	2,27	2,55	2,82	3,09	3,44	3,79	4,21	4,61	4,93	5,08	5,61	
	44,5		0,543	0,650	0,862	1,07	1,28	1,49	1,69	1,90	2,10	2,39	2,69	2,98	3,26	3,63	4,00	4,44	4,87	5,21	5,37	5,94	
48,3			0,705	0,937	1,17	1,39	1,62	1,84	2,06	2,28	2,61	2,93	3,25	3,56	3,97	4,37	4,86	5,34	5,71	5,90	5,53		
51			0,746	0,990	1,23	1,47	1,71	1,95	2,18	2,42	2,76	3,10	3,44	3,77	4,21	4,64	5,16	5,67	6,07	6,27	6,94		
	54		0,790	1,05	1,31	1,56	1,82	2,07	2,32	2,56	2,93	3,30	3,65	4,01	4,47	4,93	5,49	6,04	5,47	6,68	7,41		
57			0,835	1,11	1,38	1,65	1,92	2,19	2,45	2,71	3,10	3,49	3,87	4,25	4,74	5,23	5,83	6,41	6,87	7,10	7,88		
60,3			0,883	1,17	1,46	1,75	2,03	2,32	2,60	2,88	3,29	3,70	4,11	4,51	5,03	5,55	6,19	6,82	7,31	7,55	8,39		
63,5			0,931	1,24	1,54	1,84	2,14	2,44	2,74	3,03	3,47	3,90	4,33	4,76	5,32	5,87	6,55	7,21	7,74	8,00	8,89		
70			1,37	1,70	2,04	2,37	2,70	3,03	3,35	3,84	4,32	4,80	5,27	5,90	6,51	7,27	8,01	8,60	8,88	9,90			
	73		1,42	1,78	2,12	2,47	2,82	3,16	3,50	4,01	4,51	5,01	5,51	6,16	6,81	7,60	8,38	9,00	9,31	10,4			
76,1			1,49	1,85	2,22	2,58	2,94	3,30	3,65	4,19	4,71	5,24	5,75	6,44	7,11	7,95	8,77	9,42	9,74	10,8			
	82,5		1,61	2,01	2,41	2,80	3,19	3,58	3,97	4,55	5,12	5,69	6,26	7,00	7,74	8,66	9,56	10,3	10,6	11,8			
88,9			1,74	2,17	2,60	3,02	3,44	3,87	4,29	4,91	5,53	6,15	6,76	7,57	8,38	9,37	10,3	11,1	11,5	12,8			
	101,5		2,97	3,45	3,95	4,43	4,91	5,63	6,35	7,06	7,77	8,70	9,63	10,8	11,9	12,8	13,3	14,8					
108			3,16	3,68	4,20	4,71	5,23	6,00	6,76	7,52	8,27	9,27	10,3	11,5	12,7	13,7	14,1	15,8					
114,3			3,35	3,90	4,45	4,99	5,54	6,35	7,16	7,97	8,77	9,83	10,9	12,2	13,5	14,5	15,0	16,8					
	127		4,95	5,56	6,17	6,77	7,28	7,98	8,88	9,77	11,0	12,1	13,6	15,0	16,2	16,8	18,8						
	133		5,18	5,82	6,46	7,41	8,36	9,30	10,6	11,5	12,7	14,3	15,8	17,0	17,6	19,7							
139,7			5,45	6,12	6,79	7,79	8,79	9,78	10,8	12,1	13,4	15,0	16,6	17,9	18,5	20,7							
	141,3		5,51	6,19	6,87	7,88	8,89	9,90	10,9	12,2	13,5	15,2	16,8	18,1	18,7	21,0							
152,4			5,95	6,69	7,42	8,51	9,61	10,7	11,8	13,2	14,6	16,4	18,2	19,6	20,3	22,7							
159			6,21	6,98	7,74	8,89	10,0	11,2	12,3	13,8	15,3	17,1	19,0	20,5	21,2	23,7							
168,3			6,58	7,39	8,20	9,42	10,6	11,8	13,0	14,6	16,2	18,2	20,1	21,7	22,5	25,2							
	177,8		7,81	8,67	9,95	11,2	12,5	13,8	15,5	17,1	19,2	21,3	23,0	23,8	25,6	27,4	28,5	29,5	31,1	32,0	33,6		
193,7			8,52	9,46	10,9	12,3	13,6	15,0	16,9	18,7	21,0	23,3	25,1	26,0	26,9	28,1	29,6	30,7	31,1	32,0	32,9		
219,1			9,65	10,7	12,3	13,9	15,5	17,0	19,1	21,2	23,8	26,4	28,5	29,5	31,8	33,0	35,6	36,9	41,4				
	244,5		12,0	13,7	15,5	17,3	19,0	21,4	23,7	26,6	29,5	31,8	33,0	35,6	36,9	39,1	40,4	42,4	44,0	49,3			
273			13,4	15,4	17,3	19,3	21,3	23,9	26,5	29,8	33,0	35,6	36,9	39,4	41,4	44,6	49,5	53,4	55,4	56,2	62,2		
	323,9		20,6	23,0	25,3	28,4	31,6	35,4	39,3	42,4	44,0	47,5	50,2	56,7	60,1	62,3	70,0						
355,6			22,6	25,2	27,8	31,3	34,7	39,0	43,2	46,6	49,5	53,4	55,4	56,2	60,1	64,0	67,4	70,9					
406,4			25,9	28,9	31,8	35,8	39,7	44,6	49,5	53,4	55,4	56,2	60,1	64,0	67,4	70,9	73,7	76,4	85,9				
457			35,8	40,3</																			

Outer diameter D mm line			Wall thickness T, mm																			
			7,1	8	8,8	10	11	12,5	14,2	16	17,5	20	22,2	25	28	30	32	36	40	45	50	
1	2	3	Pipe weight, kg/m																			
10,2																						
	12																					
	12,7																					
13,5																						
	14																					
	16																					
17,2																						
	18																					
	19																					
20																						
21,3																						
	22																					
	25																					
	25,4																					
26,9			3,47	3,73																		
	30	4,01	4,34																			
31,8		4,32	4,70																			
32		4,36	4,74																			
33,7		4,66	5,07	5,40																		
	35	4,89	5,33	5,69																		
38		5,41	5,92	6,34	6,91																	
40		5,76	6,31	6,77	7,40																	
42,4		6,18	6,79	7,29	7,99																	
	44,5	6,55	7,20	7,75	8,51	9,09	9,86															
48,3		7,21	7,95	8,57	9,45	10,1	11,0															
51		7,69	8,48	9,16	10,1	10,9	11,9															
	54	8,21	9,08	9,81	10,9	11,7	12,8	13,9														
57		8,74	9,67	10,5	11,6	12,5	13,7	15,0														
60,3		9,32	10,3	11,2	12,4	13,4	14,7	16,1	17,5													
63,5		9,88	10,9	11,9	13,2	14,2	15,7	17,3	18,7													
70		11,0	12,2	13,3	14,8	16,0	17,7	19,5	21,3	22,7												
	73	11,5	12,8	13,9	15,5	16,8	18,7	20,6	22,5	24,0												
76,1		12,1	13,4	14,6	16,3	17,7	19,6	21,7	23,7	25,3	27,7											
	82,5	13,2	14,7	16,0	17,9	19,4	21,5	23,9	26,2	28,1	30,8	33,0										
88,9		14,3	16,0	17,4	19,5	21,1	23,6	26,2	28,8	30,8	34,0	36,5	39,4									
101,6		16,5	18,5	20,1	22,6	24,6	27,5	30,6	33,8	36,3	40,2	43,5	47,2	50,8								
	108	17,7	19,7	21,5	24,2	26,3	29,4	32,8	36,3	39,1	43,4	47,0	51,2	55,2	57,7							
114,3		18,8	21,0	22,9	25,7	28,0	31,4	35,1	38,8	41,8	46,5	50,4	55,1	59,6	62,4	64,9						
	127	21,0	23,5	25,7	28,9	31,5	35,3	39,5	43,8	47,3	52,8	57,4	62,9	68,4	71,8	75,0	80,8					
133		22,0	24,7	27,0	30,3	33,1	37,1	41,6	46,2	49,8	55,7	60,7	66,6	72,5	76,2	79,7	86,1	91,7				
139,7		23,2	26,0	28,4	32,0	34,9	39,2	43,9	48,8	52,7	59,0	64,3	70,7	77,1	81,2	85,0	92,1	98,4				
	141,3	23,5	26,3	28,8	32,4	35,3	39,7	44,5	49,4	53,4	59,8	65,2	71,7	78,2	82,3	86,3	93,5	99,9				
152,4		25,4	28,5	31,2	35,1	38,4	43,1	48,4	53,8	58,2	65,3	71,3	78,5	85,9	90,6	95,0	103	111	119			
159		26,6	29,8	32,5	36,7	40,1	45,2	50,7	56,4	61,1	68,6	74,9	82,6	90,5	95,4	100	109	117	127			
168,3		28,2	31,6	34,6	39,0	42,7	48,0	54,0	60,1	65,1	73,1	80,0	88,3	96,9	102	108	117	127	137	146		
	177,8	29,9	33,5	36,7	41,4	45,2	51,0	57,3	63,8	69,2	77,8	85,2	94,2	103	109	115	126	136	147	158	167	
193,7		32,7	36,6	40,1	45,3	49,6	55,9	62,9	70,1	76,0	85,7	93,9	104	114	121	128	140	152	165	177	188	198
219,1		37,1	41,6	45,6	51,6	56,5	63,7	71,8	80,1	87,0	98,2	108	120	132	140	148	163	177	193	209	223	235
	244,5	41,6	46,7	51,2	57,8	63,3	71,5	80,6	90,2	98,0	111	122	135	149	159	168	185	202	221	240	257	288
273		46,6	52,3	57,3	64,9	71,1	80,3	90,6	101	110	125	137	153	169	180	190	210	230	253	275	296	315
323,9		55,5	62,3	68,4	77,4	84,9	96,0	108	121	132	150	165	184	204	217	230	256	280	310	338	365	390
355,6		61,0	68,6	75,3	85,2	93,5	106	120	134	146	166	183	204	226	241	255	284	311	345	377	408	437
406,4		69,9	78,6	86,3	97,8	107	121	137	154	168	191	210	235	261	278	295	329	361	401	439	477	513
457		78,8	88,6	97,3	110	121	137	155	174	190	216	238	266	296	316	335	374	411	457	502	545	587
508		87,7	98,6	108	123	135	153	173	194	212	241	266	298	331	354	376	419	462	514	565	614	663
	559	96,6	109	119	135	149	168	191	214	234	266	294	329	367	391	416	464	512	570	626	684	738
610		106	119	130	148	162	184	209	234	256	291	322	361	402	429	456	510	562	627	691	753	814
	660	114	129	141	160	176	200	226	254	277	316	349	392	436	466	496	554	612	683	752	821	888
711		123	139	152	173	190	215	244	274	299	341	371	423	472	504	536	599	662	739	815	890	963
	762	132	149	163	185	204	231	262	294	321	366	405	454	507	542	576	645	712	796	878	959	1039
813		141	159	175	198	218	247	280	314	343	391	433	486	542	579	616	690	763	852	941	1028	1114
	864	150	169	186	211	231	262	298	335	365	416	461	517	577	617	657	735	813	909	1004	1097	1190
914		159	179	196	223	245	278	315	354	387	441	488	548	612	654	696	780	862	964	1065	1165	1264
1016		177	199	219	248	273	309	351	395	431	491	544	611	682	729	777	870	963	1078	1191	1303	1415
1067		186	209	230	261	286	325	369	415	453	516	572	642	717	767	817	915	1013	1134	1254	1373	1490
1118		195	219	241	273	300	341	387	435	475	542	600	674	753	805	857	961	1063	1191	1317	1442	1556
1168		203	229	252	286	314	356	404	455	497	566	627	705	787	842	896	1005	1113	1246	1379	1510	1639
1219		212	239																			