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AENOR Mark N Specific Rules for plastics polyethylene (PE) fittings for water supply, and for drainage and sewerage under pressure

Note: This document is a translation of the Spanish document RP 001.70 rev. 4 approved by the Plastics Technical Certification Committee (CTC-001). Spanish version always prevails over this translation.

RP 001.70

Revision 4
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1 Purpose and scope

Pursuant to paragraph 3.2 of the General Rules on the Certification of Products and Services with N Mark, hereafter the General Rules, the present Specific Rules describe the specific certification scheme for plastics Polyethylene (PE) fittings to be used for water supply intended for human consumption, including the conveyance of raw material prior to treatment, drainage and sewerage under pressure, vacuum sewer systems, and water for other purposes. The present Specific Rules complete the AENOR N Mark Specific Rules for plastic materials – common requirements (RP 001.00). The General Rules always prevail over the present Specific Rules.

The N Mark for plastics Polyethylene (PE) fittings to be used for water supply intended for human consumption, including the conveyance of raw material prior to treatment, drainage and sewerage under pressure, vacuum sewer systems, and water for other purposes, hereafter the Mark, denotes product compliance with the UNE-EN 12201-1:2012 and UNE-EN 12201-3:2012 standard, ISO 4427-3:2007 or SANS 4427-3:2008 and complying with the requirements established in RD 140/2003 regarding the effect on water quality of these products.

2 Definitions and special requirements

Class: It is called a class of fittings to the set of the same ones that have the same nominal dimensions and shape.

Type: The following types are defined:

- Fusion fittings
- Butt fusion fittings
- Electro fusion fittings
- Socket fusion fittings

Mechanical fittings:

- Compression fittings
- Flanged fittings

Manipulated fittings

Intended application:

- W For fittings intended for conveyance of water for human consumption
- P For fittings intended for sewer and drainage under pressure
- W+P For both of above applications

At the same time, for polyethylene (PE) fittings for water supply intended for human consumption, pending the adoption of the European criterion of verification of the effect on water quality of these products, the client will provide to AENOR, during the inspection visit, that he has evidences that the product complies with RD 140/2003. Therefore, the product does not contain any of the substances listed in Annex 1 of the mentioned document.

3 Sampling and testing for granting and maintaining the product N Mark certificate

3.1 Test to be carried out in factory (See RP 001.00)

AENOR will carry out the test indicated in table 1, for each type where required, during the initial or surveillance inspection.

3.2 Sampling and tests to be carried by the laboratory (See RP 001.00)

AENOR will select and marked the necessary samples to carry out in the laboratory the tests stated in table 1, for each type, as proceed.

	TESTS	GRANTING/MAINTAINING	RESULTS EVALUATION (*)
TESTS TO BE CARRIED OUT BY THE INSPECTOR IN THE FACTORY	Appearance and design	1 fitting per diameter	1
	Nominal outside diameter	1 fitting per diameter	2
	Wall thickness	1 fitting per diameter	3
	Ovality	1 fitting per diameter	1
	Mean inside diameter	1 fitting per diameter	2
	Minimum bore	1 fitting per diameter	1
	Length (L1min, L1 max, L2min)	1 fitting per diameter	1
	Electrical characteristic for electrofusion fittings	1 fitting per diameter	1
	High (H)	According to the manufacturer specifications	1
TESTS TO BE CARRIED OUT BY THE LABORATORY	Melt flow rate	1 reference randomly per raw material	1
	Oxidation induction time	1 reference randomly per raw material	4
	Hydrostatic strength 20°C 100 h	20 % of diameters Minimum 2 Maximum 5	1
	Hydrostatic strength 80°C 165 h	20 % of diameters Minimum 2 Maximum 5	1
	Hydrostatic strength 80°C 1000 h	1 class	1
	Tensile strenght for butt fussion fittings	2 fittings randomly	1
	Impact resistance of tapping tees	1 fitting randomly	1
	Decohesive resistance (only electrofusion)	2 fittings randomly	1

TABLE 1

(*) The evaluation criteria of this table are described in section 7.6, evaluation test results, of RP 001.00.

Note (1): For the assembly of mechanical tests, it will have the correspondent instructions for each manufacturer. The manufacturer willl provide pipes for the mentioned tests. It will allow the manufacturer send to the laboratory the assembly. In case that requires it because it considers to be necessary, the client of the certificate, will send the competent professional technical staff to carry out the assembly requires for the realization of the test.

4 Manufacturer internal control

4.1 Characteristics under factory production control (See RP 001.00)

All the characteristics under factory production control stated in this paragraph are referred to each type of polyethylene fittings.

- **Raw materials:** The polyethylene compounds used for the production of fittings must have the corresponding product certificate.
- **Manufacturing controls:** Tests and their frequency are stated in table 2.
- **Final product controls:** Tests and their frequency are stated in table 2.

TEST	FREQUENCY
Appearance and design	Every 4 h per injection line and in case of dimensional changes
Nominal outside diameter	
Wall thickness	
Length (L1min, L1max, L2min)	
Ovality	
Mean inside diameter	
Minimun bore	
Electrical characteristic for electro fusion fittings	
High (H)	According to the manufacturer specifications
Melt flow rate	Per period of production, minimum every week
Oxidation induction time	Every 6 months, per supplier of raw material
Hydrostatic strenght a 20° 100 h	1 reference per year and in case of geometrical changes, or in case of raw material changes or raw material supplier changes
Hydrostatic strenght 80°C 165 h	Per period of production
Hydrostatic strenght 80°C 1000 h	In case of design changes or raw material changes
Tensile strength for butt fusion fittings	1 reference per year and in case of geometrical changes, or in case of raw material changes or raw material supplier changes
Impact resistance of tapping tees	1 reference per year and in case of geometrical changes, or in case of raw material changes or raw material supplier changes
Decohesive resistance (only electro fusion)	1 reference per year and in case of geometrical changes, or in case of raw material changes or raw material supplier changes

TABLE 2

5 Marking of certified products (See RP 001.00)

The minimum required marking of the fitting is the following:

— Trademark;

— Nominal outside diameter of fitting and design application series/SDR;

— Manufacturer´s information;

— Applicable SDR fusion range*;

— Material and designation*.

* This information may be printed on a label associated whit the fitting or in an individual bag

The minimum required marking of the fitting packaging is the following:

— Reference to the word AENOR;

— N Mark logotype with a size not less than 3 mm;

— Number contract signed with AENOR or certificate number: 001/XXX;

— Reference to the standard UNE EN 12201-33 ISO 4427-3 and/or SANS 4427-3;

— Material and designation;

— Pressure range in bar;

— Tolerance (only for butt fusion fittings dn≥280mm);

— Applicable SDR fusion range;

— Intended application.

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Annex C

Descriptive questionnaire for PE fittings

CLIENT:

MANUFACTURER COMPANY:

FACTORY SITE:

PRODUCT:

MATERIAL:

TYPE OF FITTINGS:

Fusion fittings		Mechanical fittings		Manipulated fittings	☐
Butt fusion	☐	Compression fittings	☐		
Electro fusion	☐	Flanged fittings	☐		
Socket fusion	☐				

STANDARD:

TRADEMARK(S):

DATE:

THE APPLICANT SHALL FILL IN A QUESTIONNARIE FOR EACH FITTING TYPE

FIGURE	REFERENCE (INTERNAL REF. OF MANUFACTURER)	DIAMETERS	NOMINAL PRESSURE OR SDR

For any change of these date, the client will send on duplicate to the Committee Secretary this descriptive questionnaire updated.

…….…… on …… of …… 20……

SIGNATURE AND STAMP OF THE MANUFACTURER