



AENOR N Mark Specific Rules for polyethylene compounds (PE) for the manufacturing of pipes for gaseous fuels

Note: This document is a translation of the Spanish document RP 01.37 rev. 10 approved by the Plastics Technical Certification Committee (CTC-001). Spanish version always prevails over this translation.

RP 001.37

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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 polyethylene compounds (PE) for the manufacturing of pipes for the supply of gaseous fuels. 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 polyethylene compounds (PE) for the manufacturing of pipes for the supply of gaseous fuels, hereafter the Mark, denotes product compliance with the UNE-EN 1555-1:2011.

2 Definitions and special requirements

The **client** of the **N Mark** Certificate for any polyethylene compound must send both, the application form and the reference curves for the product.

Type:

- PE 80
- PE 100

Compound: Homogenous mixture of base polymer (PE) and additives, i.e., anti-oxidants, pigments, UV-stabilisers and others, at a dosage level necessary for the processing and use of components complying with the requirements of the Standard UNE-EN 1555-1:2011.

Production batch: Quantity clearly identifiable and homogeneous of compound produced under uniform conditions. The production batch is defined and identified by the manufacturer.

The **client** is required to communicate to the Committee, any change that should concern the compound, according to Annex A of the CEN/TS 1555-7.

3 Sampling and testing for granting and maintaining the Product N Mark Certificate

3.1 Sampling and test to be carried out by the laboratory (See RP 001.00)

AENOR will select and mark the necessary samples to carry out in the laboratory the tests stated in table 1 for each compound.

3.2 Test results valuation

The test criterion valuation will be as follows. Test results must comply with the requirements of the standard. In consequence, no value will be allowed to be out of tolerances.

	TESTS	GRANTING/MAINTAINING
TESTS TO BE CARRIED OUT BY THE LABORATORY	Compound density (2)	One per compound
	Oxidation induction time	One per compound
	Melt mass-flow rate	One per compound
	Volatile Content	One per compound
	Water content (1)	One per compound
	Carbon black content	One per compound
	Carbon black dispersion	One per compound
	Pigment dispersion	One per compound
	Resistance to gas condensate	Type test
	Resistance to weathering	Type test
	Resistance to rapid crack propagation	One every two years
	Resistance to slow crack growth	Once per compound
	Tensile strength for butt-fusion	Once per compound at the granting and every five years

TABLE 1

Note (1): Only applicable, if the measured volatile content is not in conformity with its specified requirement. In case of dispute the requirement for water content shall apply. An alternative test method, ISO 760:1978(4) may be used.

Note (2): In case of litigation, to perform this test must take into account, as mentioned in Note 1 of ISO 1183-2, the conditions for prepare the samples set out in the corresponding material specification and indicated by the manufacturer. This preparation must be realized in any of the conditions described in Table 3 (compression molding) and table 4 (extruded obtained according to ISO 1133-1) of ISO 1872-2.

The rapid crack propagation, slow crack growth, resistance to weathering, resistance to gas condensate and tensile strength for butt-fusion tests must be carried out on pipe. Therefore during the inspection in the **client** plant the necessary amount of compound, starting from the same production batch, to produce the pipe required in the standard shall be selected. The extrusion will carry out wherever the **client** stated: in his installations, if he has them available or in the installations of a pipe manufacturer. In this last case it will be preferred that the pipe manufacturer has an AENOR Certificate for PE 80 or PE 100 pipes.

AENOR shall be present during the pipe extrusion. They will carry out the extruded pipe dimensional control and will mark the samples to be sent to the approved laboratory by the **client**.

3.3 Change of compound

It will take into account the established in Annex A of the technical Specification CEN/TS 155-7.

4 Manufacturer internal control

4.1 Characteristics under factory production control (See RP 001.00)

All the characteristics under factory production control indicated in this paragraph have to be controlled for each type of polyethylene compound.

- **Final Product Control:** The tests and their frequency are stated in the table 2.

TESTS	FREQUENCY
Compound density	Every production batch
Oxidation induction time	
Melt mass-flow rate	
Volatile content or water content (1)	
Carbon black dispersion	
Pigment dispersion	
Carbon black content	
Resistance to gas condensate	Type test
Resistance to weathering	
Resistance to rapid crack propagation (2)	Every two years
Resistance to slow crack growth	Once per year
Tensile strength for butt-fusion	Once per compound
Internal pressure test 20°C 2500h	Every two years

TABLA 2

- (1) Only applicable, if the measured volatile content is not in conformity to its specified requirement. In case of dispute the requirement for water content shall be used. An alternative method, ISO 760:1978(4) may apply.
- (2) As an internal control of the manufacturer, will be allowed to perform the test with pipes of $e \geq 15$ mm thickness.

5 Marking of certified products (See RP 01.00)

Marking that may appear on the bags and in delivery notes is as follows. This marking is obligatory in the manufacturer's analysis bulletin.

- Reference to the word: AENOR;
- N Mark logotype (advisable but not compulsory);
- Contract number signed with AENOR or certificate number: 001/XXX;
- Trademark;
- Number of the standard: UNE-EN 1555.

Example:

AENOR - N - 001/XXX - Trademark - UNE EN 1555

If it is included in delivery notes, it should be clearly indicated which of the products included in the delivery note is certified.

Annex C

Descriptive questionnaire of the product

CLIENT:

MANUFACTURER COMPANY:

FACTORY SITE:

PRODUCT:

STANDARD:

TRADEMARK(S):

DATE:

TECHNICAL CHARACTERISTICS:

- MFR:
- DENSITY:

ADDITIONAL DOCUMENTATION TO DELIVER WITH THE APPLICATION FORM

- Conditions of the samples preparation previous to the density determination
- Reference curves of the product

For any extension of the range, the **client** will send this descriptive questionnaire updated in duplicate to the Committee Secretariat, indicating the modifications. The Committee Secretariat will inform the **client** about the procedures to follow in each case.

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SIGNATURE AND STAMP OF THE MANUFACTURER