

# **Aenor Mark Specific Rules for polypropylene pipes for soil and waste discharge (low and high temperature) inside the building structure**

Note: This document is a translation of the Spanish document "RP 01.55 rev 1" approved by the Plastics Technical Certification Committee (CTC-001). Spanish version always prevails over this translation.

## **RP 001.55**

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## 1 Scope

Pursuant to paragraph 3.2. of the General Rules on the Certification of Products and Services, hereafter the General Rules, the present Specific Rules describe the specific certification scheme for polypropylene (PP) pipes for soil and waste discharge (low and high temperature) inside the building structure. The present Specific Rules complete the AENOR Mark Specific Rules for plastic materials – common requirements (RP 01.00).

The General Rules always prevail over the present Specific Rules.

The AENOR mark for polypropylene (PP) pipes for soil and waste discharge (low and high temperature) inside the building structure hereafter the Mark, denotes product compliance with the UNE-EN 1451-1 Standard.

## 2 Definitions and special requirements

Application area code: a code used to indicate the permitted application area for which the pipes are intended as follows:

-“B” : code for the application area inside buildings and outside buildings fixed onto the wall.

-“BD” : Code for the application area for both, code “B” and code “D” application areas. (“D” : code for the application area under and within one meter from the building where the pipes are buried in ground).

Type: there are two types depending of the system of joint as follows.

-Type 1: pipes with integral elastomeric ring seal socket

-Type 2: pipes with butt fusion socket.

Reference: it is consider a reference the set of pipes that have the same diameter and nominal wall thickness.

## 3 Sampling and testing for granting and maintaining the AENOR Product Certificate

### 3.1 Test to be carried out in factory (See RP 01.00)

AENOR services will carry out the tests indicated in table 1 during the initial or surveillance inspection.

### 3.2 Sampling and tests to be carried by the laboratory

AENOR Services will select and marked the necessary samples to carry out in the laboratory the tests indicated in table 1.

	TEST	GRANTING	MAINTAINING	RESULTS EVALUATION
<b>TESTS TO BE CARRIED OUT BY THE INSPECTOR IN THE FACTORY</b>	Appearance	10 pipes at random	10 pipes at random	1
	Mean outside diameter	1 pipe / reference	1 pipe / reference	2
	Mean inside diameter of the socket	1 pipe/ diameter	1 pipe / diameter	2
	Wallthickness of the spigot ent	1 pipe /reference	1 pipe /reference	3
	Wallthickness of the socket	1 pipe /reference	1 pipe /reference	3
	Minimum length of the socket	1 pipe/ diameter	1 pipe/ diameter	2
	Effective length	10 pipes at random / type	10 pipes at random / type	2
<b>TESTS TO BE CARRIED OUT BY THE LABORATORY</b>	Impact resistance (note 1)	20% references / minimum 2	20% references / minimum 2	1
	Melt mass- flow rate	1 reference	1 reference	1
	Longitudinal reversion	20% references / minimum 2	20% references / minimum 2	1
	Ring stiffness (BD)	20% references / minimum 2	20% references / minimum 2	1
	Watertightness (Type 1)	1 reference	1 reference	1
	Airtightness (Type 1)	1 reference	1 reference	1
	Tightness of elastomeric ring seal joints (BD). Type 1	1 reference	1 reference	1
	Long-term performance of TPE seals	1 reference	-	1
	Resistance to internal pressure. (BD)	1 reference	-	1
	Elevated temperatura cycling (Tyoe 1)	According to UNE EN 1055	According to UNE EN 1055	1

**TABLE 1**

**(Note 1)** The interpretation of the result that will perform by the AENOR laboratory with respect to the impact test which includes the UNE EN 744, if the result is in zone B the following criteria shall apply:

If the TIR  $\leq$  10%; Test according  
If the IRR > 10%; Test nonconforming.

## 4 Manufacturer internal control

### 4.1 Characteristics under factory production control (See RP 01.00)

- **Raw materials:** When the raw material has not been granted the AENOR product certificate, the manufacturer that uses it must guarantee that the mixtures and the compounds that intervene in the manufacture of the pipes possess the suitable characteristics.
- **Control during manufacturing:** the tests and their frequency are indicated in table 2.
- **Final Product Control:** the tests and their frequency are stated in the table 2.

TESTS	FREQUENCY
Appearance	Every 4 hours per extrusion line
Mean outside diameter	
Mean inside diameter of the socket	
Wallthickness of the spigot ent	
Effective length	
Minimum length of the socket	At the beginning of the manufacturing period
Wall thickness of the socket	Per manufacturing period. Minimum once per week
Impact resistance (note 1 )	
Melt mass flow rate	1 pipe per extrusión line and raw material batch
Longitudinal reversión	Per extrusión line. Minimum twice per week
Ring stiffness (BD)	Per manufacturing period. Minimum once per week
Watertightness (Type 1)	Minimum once per year
Airtightness (Type 1)	
Tightness of elastomeric ring seal joints (BD). Type 1	
Long term performance of TPE seals	Minimum once per year
Resistance to internal pressure ( BD)	
Elevated temperatura cycling (Type 1)	Minimum once per year

**TABLE 2**

(Note 1) The interpretation of the test result of impact resistance that the licensee can perform shall be as described below:

The required value of TIR should be  $\leq 10\%$  without considering the area above the curve. The test must be performed with 50 impacts and also all the started test pieces should be terminated.

If the TIR  $\leq 10\%$ ; Test according

If the IRR  $> 10\%$ ; Test nonconforming.

The TIR is calculated using the following formula with a confidence level of 90%

$$TIR = (\text{number of breaks} / \text{total number of impacts}) \times 0.9$$


## 5 Marking of certified products (See RP 01.00)

The minimum required marking of the pipe is the following

- Reference to the word: AENOR
- AENOR Mark logotype, with a size not less than 5mm
- Number of the contract signed with AENOR: 001/XXX
- Number of the applicable standard: UNE EN 1451-1
- Trademark
- Indication of the external diameter and minimum wall thickness
- Material "PP" or "PP-H"
- Application area code
- Pipe serie (for application area "BD")
- Melt flow rate – class (only for type 2)
- Cold climate performance (conform to 7.2 of the standard)
- Application class(e) combined with design pressure (s)
- Manufacturer´s information (manufacturing period, year and month, etc)

The marking of the pipes will be carried out every two meters as minimum.

Example:

AENOR -  - 001/XXX – UNE EN 1451-1 – Trade mark –PP –110- 3,2- BD – S16 – Manufacturer´s information