



## **AENOR N Mark Specific Rules for unplasticized poly(vinyl chloride) (PVC-U) profiles for the fabrication of windows and doors**

Note: This document is a translation of the Spanish document "RP 001.17 rev 13" approved by the Plastics Technical Certification Committee (CTC-001). Spanish version always prevails over this translation.

### **RP 001.17**

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## Index

- 1 Purpose and scope
  - 2 Definitions and special requirements
  - 3 Sampling and testing for granting and maintaining the product N Mark certificate.
    - 3.1 Test to be carried out in factory.
    - 3.2 Sampling and tests to be done by the laboratory.
  - 4 Manufacturer's internal control
    - 4.1 Characteristics under factory production control
  - 5 Marking of certified products
- Annex C Description Questionnaire PVC Profiles

## 1 Purpose and scope

These specific rules describe, in compliance with section 3.2 of the General rules for the AENOR Certification of Products and Services with N Mark, hereafter the General Rules, the specific rules for the certification for non-coated unplasticized poly(vinyl chloride) (PVC-U) profiles with light coloured surfaces intended to be used for the fabrication of windows and doors. 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 non-coated unplasticized poly(vinyl chloride) (PVC-U) profiles with light coloured surfaces intended to be used for the fabrication of windows and doors, hereafter the Mark, denotes product compliance with the standard UNE-EN 12608-1:2016 **+A1:2021**

## 2 Definiciones y particularidades

**Groups:** Two groups are established:

- **Group 1:** Basic or main profiles, those that have a function of supporting efforts in the window. E.g.: frame, sash, mullion, transom, ...
- **Group 2:** Auxiliary profiles, glazing bead or profile that has a reduced function of supporting efforts in the window. E.g.: cover strip, glazing beads, weather rail ...

**Type:** A profile type is a profile type with a specific design in shape and dimensions.

**Class:** A class is a type or set of types with a specific formulation and color.

It is applicable to PVC-U profiles whose colorimetric coordinates measured on the visible surfaces are as follows:

- $L^* \geq 82$  ((chromaticity co-ordinate  $Y \geq 60$ )
- $2,5 \leq a^* \leq 5$
- $5 \leq b^* \leq 15$

Profiles made of PVC-U materials with reinforcements (e.g. glass fiber) are not part of this purpose and scope of application.

It is permitted to declare Class 0 only in cases where the profile design do not allow to carry out the test impact resistance, due to mass fall

## 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)

During initial or surveillance inspection, AENOR will carry out the test indicated in table 1 for each of the classes.

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

AENOR will select and marked the necessary samples to carry out in the laboratory the test indicated in table 1 for each of the classes.

### 3.3 Evaluation of test results

Table 1 indicates the criteria for the evaluation of each test and the significance of each code is described below.

- **Criterion nº 1:** The test shall comply with the established in the Standard. Any value out of tolerance will not be allowed.

	TEST	GRANTING / MAINTENCE	RESULTS EVALUATION
TESTS TO BE CARRIED OUT BY THE INSPECTOR IN THE FACTORY	Deviation Straightness (Only Group 1)	1 test pieces of 20% of the types Minimum 2 types	1
	Wall thickness outside (Only Group 1)	1 test pieces of 20% of the types Minimum 2 types	1
	Strength of welded corners and welded T-joints (Only Group 1)	3 test pieces of 20% of the types Minimum 2 types	1
	Dimensions (Groups 1 and 2)	Group 1: 1 test pieces of 20% of the types Group 2: 1 test piece of 10% of the types Minimum 2 types of each group	1
	Determination of the mass of the linear profile (Only Group 1)	Group 1: 1 test pieces of 20% of the types Minimum 2 types	1
	Determination of the colorimetric coordinates	1 profile at random	1
TESTS TO BE CARRIED OUT BY THE LABORATORY	Determination of the impact resistance, due to mass fall (Only Group 1)	10 test pieces of 20% of the types Minimum 2 types	1
	Heat reversion (Groups 1 y 2)	Group 1: 3 test pieces of 20% of the types Group 2: 3 test pieces of 10% of the types Minimum 2 types	1
	Appearance after exposure at 150 °C (Groups 1 and 2)	Group 1: 3 test pieces of 20% of the types Group 2: 3 test pieces of 10% of the types Minimum 2 types	1
	Weathering resistance (Only Group 1) (ONLY CONCESSION AND ALWAYS WHEN FORMULATION IS CHANGED) Charpy impact resistance before and after ageing. Color solidity. (see Note 1)	20 test pieces of 20% of the types Minimum 2 types	1

**TABLE 1**

(\*) The percentage shall be rounded up to the nearest whole number.

**Note 1:** When a change of formulation is made, the ageing resistance test may be performed by the manufacturer in the internal control, provided that it is performed by an accredited external laboratory. The manufacturer shall provide the test and its corresponding records for approval by the Technical Committee for Plastics Certification.

The use of reprocessed materials, recycled materials and non-UV resistant virgin materials shall comply with table 4 of UNE-EN 12608-1:2016.

## 4 Manufacturer internal control

All the characteristics to be checked listed in this chapter refer to each type of profile.

**Raw material:** The manufacturer must ensure that the mixtures of raw materials and compounds involved in the manufactured of the profiles manufacture have the adequate characteristics in order to comply with the requirements of the point 5.1 of standard UNE-EN 12608-1:2016.

If the material used is not a virgin UV-resistant material, the use of the materials must comply with table 4 of the UNE-EN 12608 standard.

**Manufacturing controls:** Tests and their frequency are stated in table 2.

**Final product controls:** Tests and their frequency are stated in table 2.

TESTS	FREQUENCY
Appearance (Groups 1 and 2)	Every 4 hours / per extrusion line
Dimensions(Groups 1 and 2)	
Wall thickness outside, main (Group 1)	
Determination of the mass of the linear profile (Group 1) (See Note 2)	
Determination of the colorimetric coordinates	
Deviation Straightness (Group 1)	1 day / per extrusion line
Heat reversion (Groups 1 and 2)	Every 48 hours / per extrusion line
Appearance after exposure at 150 °C (Groups 1 and 2)	
Determination of the impact resistance, due to mass fall (Only Group 1)	One a week / type
Strength of welded corners and welded T-joints (Only Group 1)	Once a month / type
Weathering resistance (Only Group 1) (See note 1)	Laboratory testing shall be considered as self-control. In case of a change of formulation, the Committee shall be notified.

TABLE 2

**Note 1:** When a change of formulation is made, the weather resistance test may be carried out by the manufacturer in the internal control, provided that it is performed by an accredited external laboratory. The manufacturer shall provide the test and its corresponding records for approval by the Technical Committee for Plastics Certification.

**Note 2:** Determination of the profile mass, every 8 hours/extrusion line, is permitted if in addition an alternative method to that described in the standard is used at least every 4 hours/extrusion line.

## 5 Marking of certified products (See RP 001.00)

The minimum required marking of the profiles is the following:

### On Main Profiles

- Reference to the word AENOR;
- N Mark logotype,
- Number of the contract signed with AENOR or certificate number: 001/XXX;
- Manufacturer identification, trademark;
- Classification of the climatic zone (for profiles certified by AENOR the climatic zone must be S);
- Classification of the resistance to impact due to mass fall by mass;
- Classification of wall thickness;
- If recycled material RMa;
- Manufacturer's information (for example date, machine and/or shift number).
- Standard UNE-EN 12608.

Example:

AENOR N - 001/XXX - Trademark - S - II - C - 93.04.17,32,2 - UNE-EN 12608

### On Auxiliary Profiles

They should be marked on the profile or the packaging.

- Reference to the word AENOR;
- N Mark logotype,
- Number of the contract signed with AENOR or certificate number: 001/XXX;
- Manufacturer identification, trademark;

- Classification of the climatic zone (for profiles certified by AENOR the climatic zone must be S);
- Manufacturer's information (production code that permit traceability)
- Standard UNE-EN 12608.

Ejemplo:

AENOR - N - 001/XXX - Trademark - S- 93,368 - UNE-EN 12608



## Annex C

### Description Questionnaire for PVC Profiles

CLIENT:

MANUFACTURER COMPANY:

FACTORY SITE:

TRADEMARK (1):

COLOR (1):

(1) The client shall fill in a questionnaire per each trademark and color (also if there are different formulations for the same color).

STANDARD:

DATE:

RANGE FOR WHICH THE MARK IS REQUESTED				
REFERENCE INTERNAL OF THE MANUFACTURER	FIGURE (transom, glazing beads,etc)	GROUP (1 o 2 s/ main o auxiliary)	CLASS (0, I or II as per impact resistance)	CLASSE (A, B or C as per thickness) (only for group 1)

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

..... on ..... of ..... 20.....

**DATE, SIGNATURE AND STAMP OF THE MANUFACTURER**