


# Plastics piping systems for hot and cold water installations: PE-X, PP-R, PB, PVC-C, PERT, multilayer PEX and multilayer PERT



## Quality Commitment, Compatibility and Suitability of use

For over more than 20 years, AENOR certifies the quality of plastic products for the transportation of hot and cold water.

AENOR  Mark on these products gives to customers and users trust through compliance with the requirements specified on the standards applied.

### Standards for Plastics piping systems for hot and cold water installations:

<b>UNE-EN ISO 15874</b>	Polypropylene (PP)
<b>UNE-EN ISO 15875</b>	Crosslinked polyethylene (PE-X)
<b>UNE-EN ISO 15876</b>	Polybutylene (PB)
<b>UNE-EN ISO 15877</b>	Chlorinated poly(vinyl chloride) (PVC-C)
<b>UNE-EN ISO 22391</b>	Polyethylene of raised temperature resistance(PE-RT)
<b>UNE-EN ISO 21003</b>	Multilayer piping systems for hot and cold water installations inside buildings

They consist of the following parts

**Part 1:** General



**Part 2:** Pipes

**Part 3:** Fittings

**Part 5:** Fitness for purpose of the system

All these standards are contained in, both, the DB-HS4 Water Supply Technical Building Code and RITE Rules of thermal installations in buildings, which form the basis for AENOR certification of pipeline systems.

### Do you know the minimum marking requirements about pipe-fitting certification?

Marking on the pipe	Marking on the fitting (fitting + packaging)
Reference to AENOR	Reference to AENOR
Number of the contract signed with AENOR: 001/XXX	Number of the contract signed with AENOR: 001/XXX
AENOR  Mark logotype, with a size not less than 3 mm	AENOR  Mark logotype, with a size not less than 3 mm
Type of material ( <i>PERT and multilayer</i> ) and serie for PVC-C	Material identification (only for fusion fitting)
Reference to the standard	Reference to the standard
Manufacture's information ( <i>code or date of manufacture</i> )	Manufacture's information ( <i>year &amp; month of production on the fittings and/or packaging</i> )
Manufacturer identification, trademark	Manufacturer identification, trademark
Opacity ( <i>if declared</i> )	Opacity ( <i>if declared</i> )
Application class combined with design pressure	Application class combined with design pressure
Nominal outside diameter and nominal wall thickness	Nominal diameter
Pipe dimension class ( <i>PEX, PP, PB</i> )	Nominal wall thickness of the corresponding pipes ( <i>for PVC-C fittings and compression union</i> )



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On each applied standard are included operational requirements for piping systems and its applications:

Application class	Typical field of application
<b>1</b>	Hot water supply 60°C
<b>2</b>	Hot water supply 70°C
<b>4</b>	Underfloor heating and low temperature radiators
<b>5</b>	High temperature radiators

Depending on the application class and design pressure, these standards define product series which determine the minimum wall thickness for each diameter of the pipe, being clearly defined the pipe to be use (e.g. 20x1,9).

All Plastic piping systems (PE-X, PP-R, PB, PVC-C, multilayer PEX and multilayer PERT) which satisfy the specified conditions shall be suitable also for the conveyance of cold water for a period of 50 years at a temperature of 20°C and a design pressure of 10 bar.

**AENOR**  Mark for systems for hot and cold water provides confidence about the compatibility and the quality of its components along the time.

### Do you know what AENOR Mark involves for the certification of Plastic piping systems ?

#### MANUFACTURER

- Implements a System of Quality Management according to the UNE-EN ISO 9001.
- Performed, according to the frequency stated in the Specific Rules, tests of raw materials, running production and final product as internal control of production.

#### AENOR TECHNICAL SERVICES, YEARLY

- Management System Quality Audit is performed in the facilities of the manufacturer in accordance with the standard UNE-EN ISO 9001.
- Product inspection is performed in the facilities of the manufacturer.
- Verify compliance of internal control manufacturer in accordance with requirement of application standard and selected samples to be tested in an independent laboratory.

#### INDEPENDENT LABORATORY

- Tested selected samples during the product inspection visit in accordance with the requirements and tests stated in the applied standards.

**AENOR Certification of the pipe-fittings systems verify through the tests compliance their compatibility and suitability for the intended use.**

An efficient and sustainable management of long-term network requires the optimization of all costs. Optimize involves to consider that the lack of quality can easily translate into a substantial additional costs.



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