

WATER DISTRIBUTION OR DRAINAGE PIPES**Technical document****08-06 Traditional**

Heating and/or domestic distribution
and/or distribution of chilled water –
Sheaths for pipes based on synthetic
pipes

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MODIFICATION HISTORY

Revision No.	Application date	Modifications
00	03/07/2019	Creation of the Technical document

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The requirements and provisions specified in this Technical Document will be updated in the case of new components or products.

1. STANDARDS

1.1. Product and test standards

NF EN 61386-1: Conduit systems for cable management - Part 1: General requirements

NF EN 61386-22: Conduit systems for cable management - Part 22: Particular requirements - Pliable conduit systems

CSTB e-books 2808_V2 (November 2011): Low-pressure pipe systems based on synthetic pipes: pipes in coils or rods. Common technical specifications for implementation

CSTB e-books 3597_V2 (April 2014): Pipe systems based on synthetic pipes for pressurised hot and cold water

2. FIELDS OF APPLICATION

Definitions:

Pre-sheathed pipe: A pre-sheathed pipe is a pipe-plus-sheath assembly. The pipe is inserted into a sheath before the assembly is fitted. This can be carried out in the factory, workshop or on-site.

Sheaths: The sheaths in this Technical Document are intended solely for the pre-sheathed pipes for the applications indicated in the table below. These applications are drawn from the ISO 10508 Standard. Installing the pipe afterwards is excluded from this Technical Document.

The main objective of specifying a continuous sheath is to avoid direct contact between the pipes and the coating materials.

Application classes 2, 4 and 5 comply with the ISO 10508 Standard. According to this standard, the reader is reminded that regardless of the application class selected, the system must also comply with conveyance of cold water at 20°C for 50 years and a service pressure of 10 bar.

It also covers the “Chilled water” application class corresponding to air conditioning and cooling systems with a minimum temperature of 5°C.

Classes	Service conditions	Maximum conditions	Accidental conditions	Typical application
Class 2	70°C 49 years	80°C 1 year	95°C 100 hours	Domestic hot and cold water supply
Class 4	20°C - 2.5 years and 40°C - 20 years and 60°C - 25 years	70°C 2.5 years	100°C 100 hours	Low temperature radiators, underfloor heating
Class 5	20°C - 14 years and 60°C - 25 years and 80°C - 10 years	90°C 1 year	100°C 100 hours	High temperature radiators

The sheaths are intended to protect the synthetic pipes defined in this reference system and the following Technical Documents:

1- Non-traditional products, subject to assessment, certified according to a non-product standards-based certification process linked to Technical Appraisals

-TD **“08-02 Non-traditional”**: pipes for heating and/or domestic distribution and/or distribution of chilled water, **certification process linked to ATECs,**

2 - Traditional products subject to European standards, certified according to a product standards-based certification process

- **TD “08-01 Traditional”**: pipes for heating and/or domestic distribution and/or distribution of chilled water: PEX piping, **product standards-based certification process,**

-TD **“08-02 Traditional”**: pipes for heating and/or domestic distribution and/or distribution of chilled water: PB piping, **product standards-based certification process,**

-TD **“08-04 Traditional”**: pipes for heating and/or domestic distribution and/or distribution of chilled water: multilayer piping systems and associated fittings, **product standards-based certification process,**

3. CERTIFIED CHARACTERISTICS AND TEST METHODS

3.1. Certified characteristics

The characteristics listed in the table below will comply with the specifications given in paragraph 3.3.

Certified characteristics	Nature of the component or system
	Sheaths
Dimensional characteristics	X
Leaktightness (bending test)	X
Crush resistance test	X

3.2. Test methods

The conditions for verification of the characteristics certified at CSTB are listed in the tables below.

Certified characteristics	Sheaths
Dimensional characteristics	CPT / CSTB specification 2808_V2 – November 2011 Chapter 4.2
Bending test	NF EN 61386-22 & NF EN 61386-1
Crush resistance test	NF EN 61386-22 §10.2 & NF EN 61386-1

3.3. Specifications

Measurements or tests	Test standards	Specifications
Dimensional characteristics	CPT / CSTB specification 2808_V2 – November 2011 Chapter 4.2	Compliant with chapter 4.2 of the CPT and tables 1-2-3-4 and §2.3.3 and §11 of Technical Guide No. 3597_V2
Bending test	NF EN 61386-22	In bent position, the sheath must show no signs of cracks or tears and §2.3.1 and §11 of Technical Guide No. 3597_V2
Crush resistance test	NF EN 61386-22	Minimum resistance to crushing of the sheaths is 450 N and §2.3.2 and §11 of Technical Guide No. 3597_V2

4. VERIFICATION REGIME

	12 months following admission	After the 12 months following admission
Sheaths	Half-yearly	Annual

5. MARKING

5.1. Sheaths


The sheaths must be indelibly marked at least every 2 metres.

This marking must include at least the following elements:

- the name of the holder or the distributor ⁽¹⁾ (name or logo) and the commercial name of the product,
- identification of the material (optional),
- internal diameter,
- resistance to crushing 450 N
- The number of pipes and the DN related to this sheath (optional),
- the QB logo followed by the two last parts of the certificate number*,
- the manufacturing references allowing traceability, including at least (on the product or label):
 - the production period, at least the month and year, in numbers or in code,
 - identification of the factory if there are several production sites, by name or code,
- metric marking.

*: The last two parts of the certificate number must be marked on either the product or the label.

Example (PP sheath intended for the production of hot and cold domestic water distribution and high and low temperature heating installations with 2 DN12 pipes and 1 DN16 pipe:

XXX - PP 43 mm – 450 N  aa-xyz [2 x DN12 + 1 X DN16] Manufacturing references - 100m

⁽¹⁾ A distributor is the beneficiary of a commercial extension.

6. CHECKS PERFORMED BY THE MANUFACTURER

The checks performed by the manufacturer and the measurements of the various characteristics are carried out in accordance with the inspection plan and the operating procedures defined in the reference standards cited in paragraph 1.1 of this technical document no. 08-01 Traditional, and at least complying with the frequencies defined in the tables below:

6.1. For raw materials

Measurements or tests	Minimum sampling frequency
Supplier analysis certificate	At each delivery

6.2. Sheaths

Measurements or tests	Minimum sampling frequency
Dimensional characteristics	once every 8 hours per line
Leaktightness test or bending test	once per 24 h and per line
Crush resistance test	once per week and per line

7. MONITORING ARRANGEMENTS BY CSTB

7.1. Tests performed for admission and extension at CSTB

Measurement or test	Sheaths
Dimensional characteristics	1 DN at CSTB, all the other DN during the admission or extension audit
Leaktightness test or bending test	1 test/material
Crush resistance test	1 test/material

Processing of extensions: change of resin, change of additive, change of range treated as an admission

7.2. Tests performed during follow-up at CSTB

Tests performed

Measurement or test	Sheaths
Dimensional characteristics	1 DN
Leaktightness test or bending test	1 test
Crush resistance test	1 test

8. SAMPLING FOR TESTS AT CSTB

8.1. Sampling for admission or extension applications to the CSTB

Collection of samples in cases of admission or extension is left to CSTB's discretion.

8.2. Sampling for follow-up at CSTB

Sheaths
Coils 15 to 20 m sections