TECHNICAL DOCUMENT

WATER

SANITARY APPLIANCES

Technical document 017-20

Baths and shower trays made from impact-modified co-extruded ABS/acrylic sheets

Technical document 017-20 rev. 00

21/12/2018

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CSTB
le futur en construction

CSTB (Centre Scientifique et Technique du Bâtiment), a public establishment supporting innovation in construction, has four key activities—research, expertise, assessment and dissemination of knowledge—organised to meet the challenges of the ecological and energy transition in the construction sector. Its field of expertise includes construction materials, buildings and their integration into districts and towns.
With over 900 employees, its subsidiaries and networks of national, European and international partners, the CSTB group works for all the stakeholders in the construction sector to advance building quality and safety.

MODIFICATION HISTORY

Revision no.	Application date	Modifications
00	**21/12/2018**	**Creation of the technical document**

Contents

1 SPECIFICATIONS APPLICABLE TO BATHS

Baths shall comply with Standards NF EN 14516, NF EN 232, NF EN 15719, NF D11-121 and with technical document 017-08.
They shall also satisfy the additional specifications defined in this document.

1.1 EXTERNAL APPEARANCE

The bath reinforcement shall not cause injury during handling.

1.2 ALLOWABLE DEVIATION

Requirements in Standard NF EN 15719 related to allowable deviations are modified as follows:

"The dimensions of baths shall not differ from the dimensions given by the manufacturer by more than $^{+0}_{-5}$ mm".

1.3 DIMENSIONAL DEVIATIONS

Straightness of sides

Requirements in Standard NF EN 15719 dealing with edge straightness deviations are modified as follows: "Deviations in the straightness of straight edges of baths measured in accordance with A.2.3 shall not exceed the following values, in the concave or convex direction at any point whatsoever".

Dimension	Allowable deviation
≤ 1 m	**≤ 3 mm**
> 1 m	**≤ 4 mm**

1.4 DIMENSIONAL CHECK OF BATHS WITH A PROTECTIVE FILM

It is acceptable for the dimensional check to be made without removing the plastic protective film, since the protective film is thin (1/10 mm).

1.5 MASS

The variation of mass shall be less than ± 10% of the reference value indicated in the admission application file sent to CSTB (bare bath, without accessory or stand).

1.6 CAPACITY

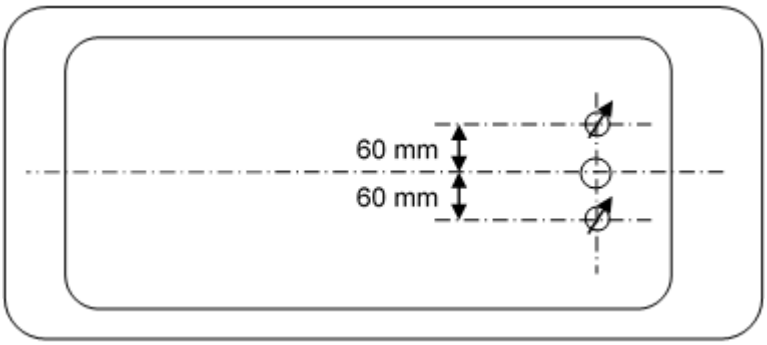
The variation in capacity shall be less than ± 10% of the value given in the catalogue and sent to CSTB in the admission application file.

1.7 SLOPE OF RIMS

Bath rims shall have a sufficient slope so that water will return inside the bath.
The slope of the rims shall be verified by placing a steel ball into position at several points of each rim in sequence and checking that the ball rolls freely inwards into the bath.

1.8 TESTS OF RESISTANCE TO TEMPERATURE VARIATIONS

The test is carried out in accordance with Standard NF EN 15719 A3, with the following modifications:
“Test B:
Place 2 dial gauges under the bottom of the bath, on either side of the plug hole, at two points located at 60 mm ±1 mm from the centre line passing through the plug hole, along a line perpendicular to the centre line of the inside of the bath (see diagram below). Continue with the test described in A3. After the first ten 75°C/12°C cycles, perform a ball impact resistance test according to standard NF EN 15719 A4 and then continue the test within 14 days at the latest”.
The specifications in NF EN 15719 are modified as follows:
“There shall be no visible defect in the bath after the test (all modifications shall be verified visually and by the presence of eosin traces) and there shall be no functional defect. Any change to operation shall be verified by checking that the bath satisfies §4.11 in Standard NF EN 15719, that there is no individual deformation value more than 4 mm and that there is no deformation or any other defect in the bath at the shock impact points that would be prejudicial to its correct operation”.



1.9 HANDLES

1.9.1 Salt spray resistance

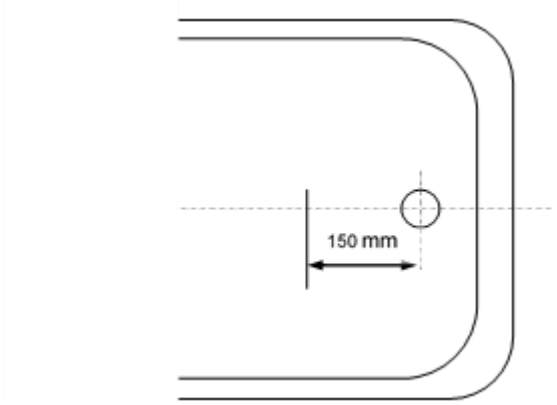
A salt spray resistance test is carried out in accordance with Standard NF EN ISO 9227, on a handle coated with each type of finish (except for gold plating).
The manufacturer is free to choose either the 200h neutral salt spray (NSS) test, or the 24h acetic acid salt spray (AASS) test.
There shall be no defect on visible surfaces after the test.

1.9.2 Resistance to chemicals and stains

A test on the resistance to chemicals and stains is carried out in accordance with Standard NF EN 14516 on a handle coated with each type of finish (except for gold plating).
There shall be no visible permanent stain and no sign of deterioration on the handle after the test.

1.10 MINIMUM BOTTOM THICKNESS

The minimum thickness of the top layer of the bottom of the bath is measured as shown in the sketch below. It shall be greater than or equal to 0.8 mm at 150 mm from the plug hole.



1.11 SERVICE

The manufacturer shall include the contact information for their after sales service in accompanying documents (installation instructions, catalogue, website, etc.).

2 SPECIFICATIONS APPLICABLE TO SHOWER TRAYS

Shower trays made of synthetic materials shall comply with Standards NF EN 14527, NF EN 251 and NF EN 15720. They shall also satisfy the complementary specifications defined in this document.

2.1 DIMENSIONAL DEVIATIONS

The requirements in §4.7 in Standard NF EN 15720 dealing with dimensional deviations are modified as follows:

"The dimensions of shower trays shall not differ from the dimensions given by the manufacturer by more than $^{+0}_{-5}$ mm"

2.2 GEOMETRIC VARIATIONS

2.2.1 Straightness of sides

The requirements from §4.8.3 of Standard NF EN 15720, measured in the concave or convex direction at any point whatsoever, are modified as indicated in Table 1. If the shower tray contains an integrated panel, the measurements shall be taken at the bottom of the sides.

Table 1

Dimension	Allowable deviation
≤ 1 m	≤ 3 mm
> 1 m	≤ 4 mm

2.2.2 Straightness of the rim edge drop

The requirements from §4.8.4 of Standard NF EN 15720, measured in the concave or convex direction at any point whatsoever, are modified as indicated in Table 2.

Table 2

Dimension	Allowable deviation
≤ 1 m	≤ 3 mm
> 1 m	≤ 4 mm

2.2.3 Planeness

The warp, measured in accordance with Standard NF D14-510, shall be ≤ 5 mm.

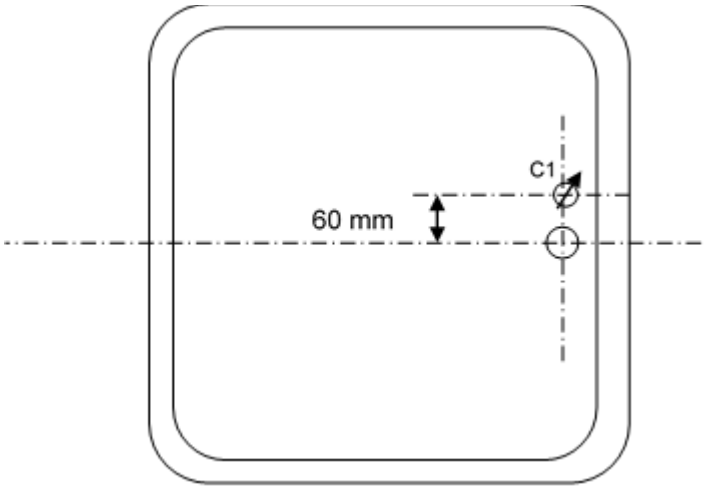
2.3 SLOPE OF RIMS

Shower trays shall have a sufficient slope so that water will return inside the bath.
The slope of the rims shall be verified by placing a steel ball into position at several points of each rim in sequence and checking that the ball rolls freely inwards into the shower tray.

2.4 RESISTANCE TO TEMPERATURE VARIATIONS

The test is carried out in accordance with Standard NF EN 15720 A3, with the following modifications:
“Test B:

Place the dial gauge on the lower face of the shower tray as indicated in the diagram below:



After the first ten 75°C/12°C cycles, perform a ball impact resistance test according to Standard NF EN 15720 A4 and then continue the test within 14 days at the latest”.
The specifications of NF EN 15720 are modified as follows:
“There shall be no visible defect in the shower tray after the test (all modifications will be verified visually and by the presence of eosin traces) and there shall be no functional defect. Any change to operation shall be verified by checking that the shower tray satisfies §4.9 in Standard NF EN 15720, that there is no individual deformation value more than 4 mm and that there is no deformation or any other defect in the shower tray at the shock impact points that would be prejudicial to its correct operation”.

2.5 SERVICE

The manufacturer shall include the contact information for their after sales service in accompanying documents (installation instructions, catalogue, website, etc.).