

**SANITARY TAPWARE**  
**Technical document**  
**077-02**

ECAU and/or EChAU ratings for single taps  
and mixers

Technical Document 077-02 Rev.03  
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## MODIFICATION HISTORY

Revision no.	Application date	Modifications
00	01/06/2017	<p>Update to the document layout and reference.</p> <p><b>Content modifications:</b></p> <ul style="list-style-type: none"> <li>– Some technical changes</li> </ul>
01	02/04/2019	<p>Cancels and replaces technical document 077-02_Rev 18</p> <p><b>Update of technical document according to the new frame:</b></p> <p><i>“Trame_doc_technique_VF_PC_DT_R3. ”</i></p> <p><b>Content modifications:</b></p> <ul style="list-style-type: none"> <li>– The EAU rating is replaced by ECAU and/or EChAU.</li> <li>– Hot water temperature for endurance tests</li> </ul>
02	01/10/2020	<p>Reference to the regulation for use of marks (DT077-00)</p> <p>- Addition of the method for determining the scores in chapter 2.7 "E.C.A.U. and / or E.Ch.A.U. rating"</p>
03	24/11/2022	<p>Modification of the family title “jet regulators” by “Aerators (with or without integrated flow regulators)” and deletion of the family “flow regulator”.</p> <p>Modification at the ECAU classification in terms of flowrate, comfort and endurance classes. Implementation of “A B C D” performances for each class of the ECAU rating.</p> <p>Updating of the “Hydraulique et Equipements Sanitaires” Department name by “Direction de l’EAU” and the name of Division “Robinetterie et Appareils Sanitaires (RAS)” by Division “Equipements Sanitaires et du Bâtiment (ESB)”.</p> <p>Deletion of standards publication year.</p>

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# 1 Normative support for ECAU and/or EChAU ratings

## 1.1 Purpose

The purpose of this chapter is to list the articles of the NF EN 200 Standard that will be taken into account for the ECAU and/or EChAU ratings in accordance with the regulation for use DT077-00.

## 1.2 List of the tests involved

The table below lists the articles of the Standard NF EN 200.

Articles	Title of articles
4	Marking and identification
4.1	Marking
4.2	Identification
5	Materials
5.1	Chemical and hygienic requirements
5.2 A	State of visible surfaces ( <i>neutral salt spray test</i> )
5.2 B	State of visible surfaces ( <i>"air" thermal shock resistance test</i> )
6	Dimensional characteristics
6.2	Inlet dimensions
6.3	Outlet dimensions
6.4	Assembly dimensions
7	Order of the tests ( <i>Test sequences</i> )
8	Leaktightness characteristics
8.3	Leaktightness of the closing mechanism and the tap upstream of the closing mechanism(s) when the closing mechanism is in the closed position
8.4	Tap leaktightness downstream of the closing mechanism(s) when the closing mechanism is open
8.5	Leaktightness of the manually operated diverter
8.6	Leaktightness and operation of the automatic diverter: taps for Type 1 supply system
9	Pressure resistance characteristics - Mechanical behaviour under pressure
9.4	Monitoring of mechanical behaviour upstream of the closing mechanism - Closing mechanism in the closed position
9.5	Monitoring of mechanical behaviour downstream of the closing mechanism — Closing mechanism in the open position
10	Hydraulic characteristics
11	Mechanical strength characteristics - Operating device torque test
12	Mechanical endurance characteristics
12.1	Mechanical endurance of the operating device
12	Mechanical endurance of diverters
12.2.3 A	Mechanical endurance of manual diverters
12.2.3 B	Mechanical endurance of automatic diverters
12.3	Mechanical endurance of swivel spouts (single outlet or two outlet types)
13	Protection against backflow
14	Acoustic characteristics

## 2 ECAU and/or EChAU ratings

### 2.1 Foreword

ECAU and/or EChAU ratings were created to meet the expectations of market players who require performances that are superior or complementary to those indicated in the NF EN 200 standard.

For single taps and mixer taps, the requirements are:

- Ergonomics with special dimensions for using the tap;
- A suitable design to facilitate the cleaning of the tap;
- Resistance to alternating pressure stress against water hammer problems;
- Verification of installation system for fixed-spout single-hole taps;
- Hydraulic performance levels according to user needs;
- Creation of the 3 acoustic classes to clarify this performance;
- Increased endurance performance by multiplying by 2.5 the requirements of the European standard to optimise maintenance frequencies;

It should be noted, however, that the use of these ECAU and/or EChAU ratings is voluntary and supplementary to the evaluation of a product that is already certified under the NF EN 200 standard.

### 2.2 Purpose

The purpose of this chapter is to establish the dimensional, leaktightness, hydraulic, mechanical, mechanical endurance and acoustic performance levels to be met by single taps and mixer taps to qualify for ECAU and/or EChAU ratings.

### 2.3 Field of application

This chapter applies to single taps and mixer taps subject to standard NF EN 200.

ECAU and/or EChAU ratings are not provided for a single mixer to prevent differing ranges, with the exception of washbasin single taps or sink mixers.

The minimum standard range to be presented for ECAU and/or EChAU ratings includes a washbasin mixer + a mixer with a shower function.

The bidet mixer is considered optional in the presented range.

## 2.4 References to standards and additional specifications

NF EN 200:	Sanitary tapware - Single taps and mixer taps for water supply systems types 1 and 2 - General technical specifications
NF EN 246:	Sanitary tapware – General specifications for aerators (with or without integrated flow regulators)
NF EN ISO 3822-1:	Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 1: Method of measurement
NF EN ISO 3822-2:	Acoustics - Laboratory tests on noise emission from tapware and hydraulic equipment used in water supply installations - Part 2: Guidelines for the installation and operation of draw-off taps and tapware.
T 54 094:	Plastics - Piping components made of unplasticised polyvinyl chloride and unplasticised chlorinated polyvinyl chloride - Fittings for pressure pipelines - Determination of resistance to alternate pressure stress.
DT077-00	Regulations for use marks

## 2.5 ECAU and/or EChAU rating principle

The rating can only be assigned to taps:

- pursuant to Standard NF EN 200. The test procedures are defined in Article 1 of this document.
- having passed the performance tests for the ECAU and/or EChAU ratings. The test procedures are provided in Article 2.6 below.

### 2.5.1 Meaning of E

The flow characteristic taken into account is the use flow 'q' of the tap as it is equipped (standard accessories: regulators, fittings, etc.).

There are 6 classes for this characteristic. See Article 2.7.1.1.

### 2.5.2 Meaning of C and Ch

The comfort characteristics taken into account are the dimensions, hydraulic performance and resistance to alternating pressure stress.

There are 3 classes for this characteristic. See Article 2.7.2.1.

	<b>C</b>	<b>Ch</b>
Field of application	<ul style="list-style-type: none"> <li>Household (house, apartment, student residence)</li> </ul>	<ul style="list-style-type: none"> <li>Household <b>with waiver</b> (house, apartment, student residence)</li> <li>Public (Hospitality, ERP (institution receiving the public), office, EHPA (nursing home), non-medical retirement home, spa treatment centre)</li> </ul>
Class 0	<ul style="list-style-type: none"> <li>Dimensional;</li> <li>Verification of installation system for fixed-spout single-hole taps</li> </ul>	
Class 1	<ul style="list-style-type: none"> <li>Must be C0;</li> <li>Resistance to alternating pressure stress (test carried out only for taps with ceramic heads);</li> </ul>	
Class 2	No C2 rating for single taps and mixer taps	<ul style="list-style-type: none"> <li>Must be C1 (note 1)</li> <li>Must be <b>E00</b> for washbasin, bidet</li> <li>Must be <b>E0</b> for shower outlet;</li> <li>Controlled flow rate for water saving with a flow regulator</li> </ul>
Note 1:	In cases in which the requirements of C and Ch are identical, only the letter C is used (e.g. for class 1, only C1 is used and there is no Ch1 rating)	

### 2.5.3 Meaning of A

The acoustic characteristic taken into account is the sound pressure level,  $L_{ap}$ .

There are 3 classes for this characteristic. See Article 2.7.3.1.

### 2.5.4 Meaning of U

The wear characteristic taken into account is the mechanical endurance and, more precisely, the number of operating cycles to which the following are subjected:

- obturators;
- swivel spouts;
- bath-shower diverters.

There is 1 class for this characteristic. See Article 2.7.4.1.

An application for an ECAU and/or EChAU rating involves a class 3 application for endurance tests (U3).

## 2.6 Performance level for ECAU and/or EChAU ratings

### 2.6.1 Marking and identification

No requirements in addition to those under the NF EN 200 Standard.

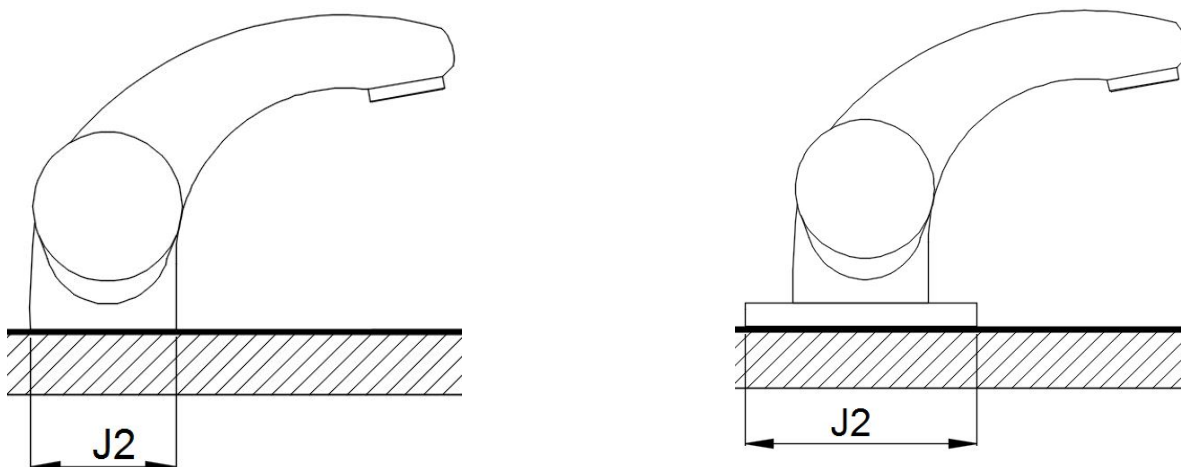
### 2.6.2 Materials

No requirements in addition to those under the NF EN 200 Standard.

### 2.6.3 Dimensional characteristics

In addition to the NF EN 200 Standard, the following additional dimensions must be verified: J2, D4 and P2.

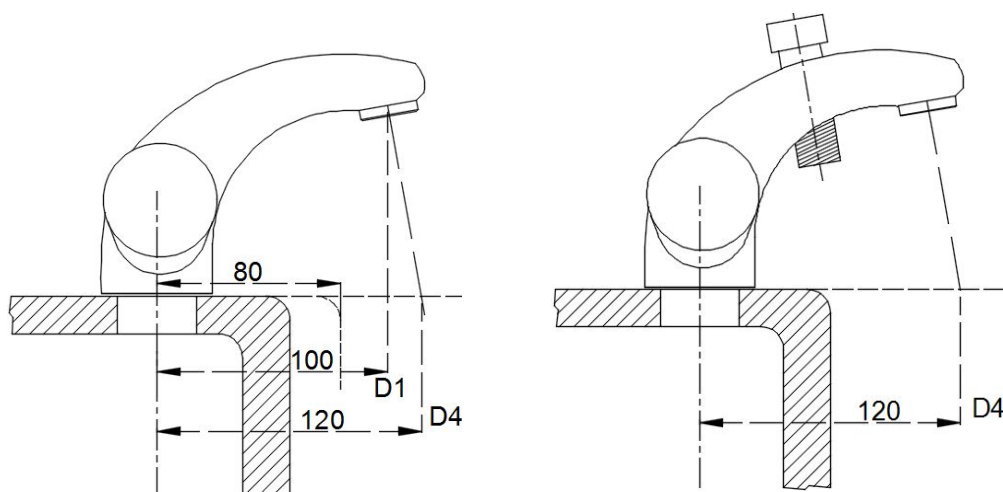
- The diameter of the tapware body base (J2, established at a minimum of 45 mm) must not be obtained by introducing an insert between the base of the body and the support.



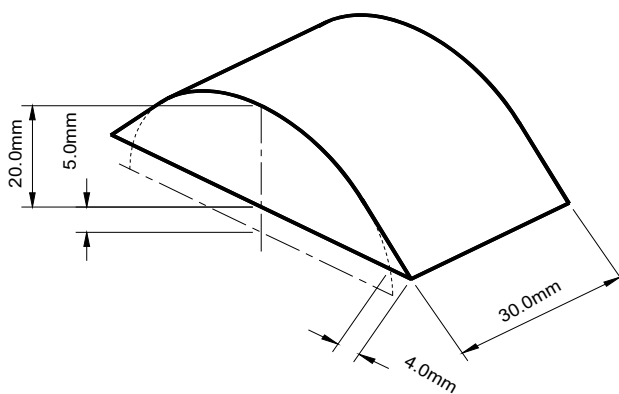
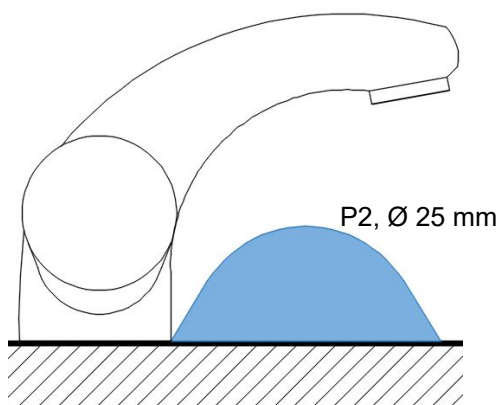
- for washbasin taps, the jet axis must intersect the washbasin surface (at the tap base) at least 120 mm from the tap base axis (D4).

NOTE As the current trend is to make taps increasingly smaller, if the minimum dimensions of projections and height are combined, the suitability for use requirement is not met.

The figure below shows in dotted lines the maximum range for standard washbasins (80 mm) and for standard taps the minimum projection (100 mm, D1) with the minimum height (25 mm). It is clearly impossible to wash one's hands under the tap.



- the spout must be separated in such a way that a rod consisting of a cylindrical segment with a 25 mm radius that is 20 mm in height and 30 mm in length of the generator can be slid onto the plane of the base. The rod must at least touch the base in the common base plane.



## 2.6.4 Order of tests

In Standard NF EN 200, under Chapter 6.4, in Table 6, the order of the tests for all of the samples was changed as follows for ECAU and/or EChAU ratings.

Sample Sequence	Order	Tests
<b>Sample 0 Installation</b>	1.	§2.6.13 Verification of the installation system for sanitary tapware Please note that this test is only for admission
<b>Sample 1 Materials</b>	1.	§5.2A Materials (salt spray)
<b>Sample 2 Materials</b>	1.	§5.2B Materials (air thermal shock)
<b>Sample 3 Obturator endurance</b>	1.	§4.1 Marking
	2.	§4.2 Identification
	3.	§13 Protection against backflow
	4.	§8.3 Leaktightness
	5.	§8.4 Leaktightness
	6.	§12.1 Endurance
	7.	8.3 Leaktightness
	8.	§8.4 Leaktightness
	9.	§2.6.9 Endurance
	10.	§8.3 Leaktightness
	11.	§8.4 Leaktightness

Sample Sequence	Order	Tests	
Sample 4 Diverter endurance		Sample 4A – manual diverter	Sample 4B – automatic diverter
	1.	§4.1 Marking	§4.1 Marking
	2.	§4.2 Identification	§4.2 Identification
	3.	§13 Protection against backflow	§13 Protection against backflow
	4.	§8.5 Leaktightness	§8.6 Leaktightness
	5.	§12.2.3 A Endurance	§12.2.3 B Endurance
	6.	§8.5 Leaktightness	§8.6 Leaktightness
	7.	§2.6.9 Endurance	§2.6.9 Endurance
	8.	§8.5 Leaktightness	§8.6 Leaktightness
Sample 5 Spout endurance	1.	§4.1 Marking	
	2.	§4.2 Identification	
	3.	§13 Protection against backflow	
	4.	§8.4 Leaktightness	
	5.	§12.3 Endurance	
	6.	§8.4 Leaktightness	
	7.	§2.6.9 Endurance	
	8.	§8.4 Leaktightness	
Sample 6 Charact. Hydraulic		Sample 6 for C1	Sample 6 for Ch2
	1.	§4.1 Marking	§4.1 Marking
	2.	§4.2 Identification	§4.2 Identification
	3.	§13 Protection against backflow	§13 Protection against backflow
	4.	§6 Dimensions	§6 Dimensions
	5.	§2.6.3 Dimensions	§2.6.3 Dimensions
	6.	§10 Flow rate	§10 Flow rate
	7.	§2.6.7.1 Class E for flow rate	§2.6.7.1 Class E for flow rate
	8.	/	§2.6.7.2 "Water saving" controlled flow rate
	9.	§9.4 Upstream mechanical behaviour	§9.4 Upstream mechanical behaviour
	10.	§9.5 Downstream mechanical behaviour	§9.5 Downstream mechanical behaviour
Sample 7 Torsion	1.	§4.1 Marking	
	2.	§4.2 Identification	
	3.	§13 Protection against backflow	
	4.	§11 Torque	
	5.	§8.3 Leaktightness	
	6.	§4.1 Marking	
Sample 8-9-10 Acoustic	1.	§4.2 Identification	
	2.	§13 Protection against backflow	
	3.	§14 Acoustic	
	4.	§2.6.11 Class A for acoustics	
	5.	§4.1 Marking	
Sample 11 Alternating pressures	1.	§4.2 Identification	
	2.	§13 Protection against backflow	
	3.	§2.6.12 Resistance to alternating pressure	
	4.	§8.3 Leaktightness	

### 2.6.5 Leaktightness characteristics

No requirements in addition to those under the NF EN 200 Standard.

### 2.6.6 Pressure resistance characteristics - Mechanical behaviour under pressure

No requirements in addition to those under the NF EN 200 Standard.

### 2.6.7 Hydraulic characteristics

#### 2.6.7.1 Flow rate in “fully open” position

Verification of the flow rate value obtained with class E, see Article 2.7.1.1.

##### Particular case:

At bath outlet, the minimum flow rate must be of 20 L/min and be measured only with the 2 obturators in the fully open position.

#### 2.6.7.2 “Water saving” controlled flow rate

This test applies to class Ch2.

To be considered in the framework of the EChAU rating, the “water saving” characteristic must meet the following requirements:

Single taps or mixer taps (equipped with a ceramic head) used in a sanitary installation are subject to controlled flow if they are used for the washbasin, bidet, shower and bath-shower (on the shower outlet).

To ensure the flow rate in the full flow position, it seemed advisable to use a test described in Article 10.6.1 of the NF EN 200 standard and to measure the flow rate in the fully open position.

##### 2.6.7.2.1 Test principle

The purpose is to determine, for the tested tap, the value of the flow rate for reference pressures of 1.5 - 3 and 4.5 bar, also constant on each of the hot and cold water supplies.

The measurement is conducted on a tap with the flow control device(s) in the full flow position.

##### 2.6.7.2.2 Equipment

See Article 10.3 of Standard NF EN 200.

##### 2.6.7.2.3 Operating procedure

- Supply the tap with a dynamic pressure of 0.3 (+ 0.02/0) MPa or 3 (+ 0.2/0) bar.
- Open the flow control device(s) in the fully open position
- Measure and record the flow values in the full flow position.
- Repeat this test with dynamic pressures of 1.5 (+ 0.2/0) MPa or 1.5 (+ 0.2/0) bar and 4.5 (+ 0.2/0) MPa or 4.5 (+ 0.2/0) bar.

##### 2.6.7.2.4 Required characteristics

*Flow rate according to the product*

Type of product	Flow requirements in L/min		
	3 (+0.2/0)	1.5 (+0.2/0)	4.5 (+0.2/0)
Dynamic test pressures:	3 (+0.2/0)	1.5 (+0.2/0)	4.5 (+0.2/0)
Washbasin and bidet within the setting range of 34 to 44 °C	$4 \leq Q \leq 6$	$\geq 2$	$\leq 9$
Shower and bath-shower (shower outlet) within the setting range of 34 to 44 °C	$9 \leq Q < 12$	$\geq 6$	$\leq 15$

### 2.6.8 Mechanical strength characteristics - Operating device torque test.

No requirements in addition to those under the NF EN 200 Standard.

### 2.6.9 Mechanical endurance characteristics

**Endurance performance is modified by multiplying by 2.5 the requirements for all mobile equipment under the standard NF EN 200.**

In the NF EN 200 Standard, under clause 12.1.2.2, in table 11, the hot water temperature for performing the endurance tests is 55 °C to 65 °C instead of  $(65 \pm 2)$  °C.

In the NF EN 200 Standard, under clause 12.2.2.2, in table 12, the hot water temperature for performing the endurance tests is 55 °C to 65 °C instead of  $(65 \pm 2)$  °C.

### 2.6.10 Protection against backflow

No requirements in addition to those under the NF EN 200 Standard.

### 2.6.11 Acoustic characteristics

Tapware with  $L_{ap} > 30$  cannot be admitted for these ECAU and/or EChAU ratings.

Verification of the acoustic value obtained with class A; see article 2.7.3.1.

### 2.6.12 Resistance to alternating pressure stress

To be examined in the framework of the ECAU and/or EChAU ratings, single taps and mixer taps must meet the following requirements:

- Single taps and mixer taps used in a sanitary installation are subject to considerable pressure variations due to the closing of installed devices - solenoid valves of washing machines, mixers, valves, etc.
- To ensure their resistance to such stress, it seemed advisable to use a test described in the T 54-094 Standard for the rating of supply hoses and piping components.

#### 2.6.12.1 Test principle

Application during 200 cycles of a variable and defined internal hydraulic pressure at the tap inlets, with the tap in the closed position.

#### 2.6.12.2 Equipment

The equipment essentially includes:

A pressure generator capable of generating variable pressure that can vary at constant frequency between a low limit and a high limit, establishing constant amplitude. The diagram of that variation takes the form of a generally rectangular signal (see Figure 1).

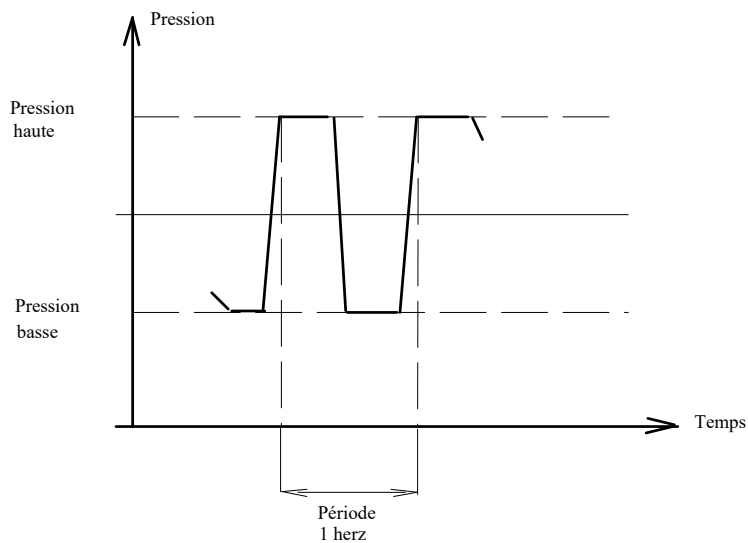


Figure 1 – Signal waveform – alternating pressures

- the time needed to shift from low pressure to high pressure and vice versa must be as short as possible and never longer than one-tenth of the period;
- the low and high pressure values must be obtained and checked to within  $\pm 2\%$  of the desired values;
- to check the waveform of the signal representing the pressure variation, the generator must be combined with a device that can verify the pressure changes in the test specimen (low-inertia pressure sensor and graphic data recorder or oscilloscope).

#### 2.6.12.3 Operating procedure

Apply 100 cycles to the closed tap (filled with water and cleared of air):

- low pressure of  $(8 \pm 1)$  bar;
  - high pressure of  $(50 \pm 1)$  bar;
  - frequency of  $(1 \pm 0.5)$  Hertz.
- 1) on one of the inlets, (the other being in the open air);
  - 2) on the other inlet

Note: A “slight” leak is allowed during the test if it does not have an influence on the low and high pressures of the test.

After the alternating pressure test, perform the leak test in accordance with Article 8.3 of standard NF EN 200.

#### 2.6.12.4 Required characteristics

During the leak test, no visible deterioration or leakage should be observed.

### 2.6.13 Verification of the installation system for sanitary tapware

In view of the lack of a tightening system verification test under standard NF EN 200 for single-hole taps with a fixed spout (washbasin, bidet and bathtub) which are installed on horizontal planes, it is necessary to verify tightening performance according to the following steps:

#### 2.6.13.1 Test principle

The test consists of verifying the tightening behaviour by applying a specific force to the end of the tapware spout.

#### 2.6.13.2 Test method

The test is performed by conducting the following operations:

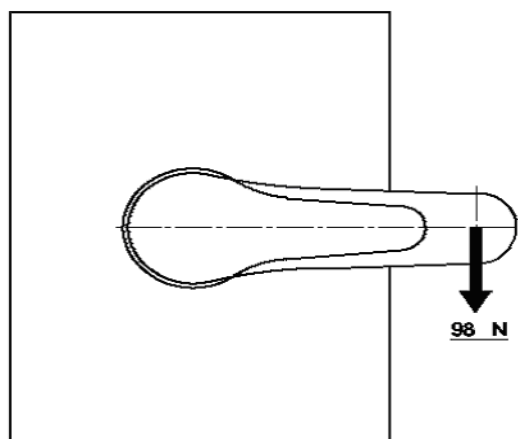
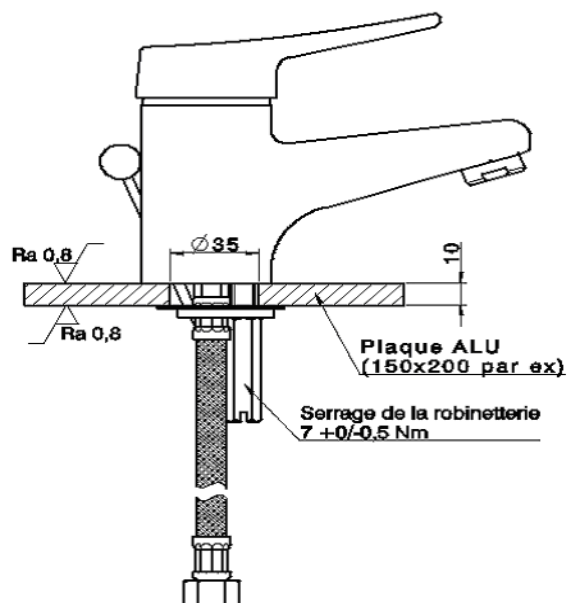
- Install the tapware on the test plate;
- Tighten the nut of the tap installation system to a torque of 7 (-0.5/0) N.m (if the installation system does not have a nut, tighten the installation system by hand);
- Apply a force of 98 (+2/0) N at the end of the spout (the point at which the force is to be applied is located on the axis of the aerator);
- Maintain the force during  $(60 \pm 5)$  s;
- Verify any rotation of the tapware;

#### 2.6.13.3 Requirements

There should be no rotation of the tapware during the test.

#### 2.6.13.4 Frequency

The tightening test is carried out when new products are admitted and/or when one of the components of the tapware installation system and/or the tapware component in contact with the table is modified.



## 2.7 ECAU and/or EChAU ratings for single taps and mixer taps

The essential principle of ECAU and/or EChAU ratings is that the different characteristics are independent of one another. The level of each characteristic is to be selected as needed. The highest level may apply for one characteristic, while the lowest level may apply for another.

### 2.7.1 Hydraulic or flow characteristic

#### 2.7.1.1 Classification

Depending on their performance level, tapware can be classified as follows:

Class	Flow rate value
E00	4.0 L/min $\leq$ q $\leq$ 6.0 L/min
E0	9.0 L/min $\leq$ q < 12.0 L/min
E1	12.0 L/min $\leq$ q < 16.0 L/min
E2	16.0 L/min $\leq$ q < 20.0 L/min
E3	20.0 L/min $\leq$ q < 25,2 L/min
E4	25,2 L/min $\leq$ q < 30,0 L/min
E5	30,0 L/min $\leq$ q < 36,0 L/min
E6	36,0 L/min $\leq$ q < 42,0 L/min
E7	42,0 l/min $\leq$ q < 48,0 l/min
E8	48,0 l/min $\leq$ q < 51,0 l/min

NOTE For bathtub tapware, the minimum class is E<sub>3</sub>

Depending on their level of performance, the valves have a score of type A, B, C, D.

#### Water saving for washbasin and bidet faucets

Flowrate at 3 bars (L/min)	1,5	6	12	16	20+
Rating	A	B	C	D	
Technical score	E000 – E00	E01 – E0	E1	E2 +	

#### Water saving for sink faucets

Flowrate at 3 bars (L/min)	6	9	12	16	20+
Rating	A	B	C	D	
Technical score	E01	E0	E1	E2 +	

#### Water saving for shower or bath-shower faucets (shower outlet)

Flowrate at 3 bars (L/min)	9	12	16	20	25,2+
Rating	A	B	C	D	
Technical score	E0	E1	E2	E3 +	

Concerning bath outlet of a faucet, there is no water saving notion related to this faucet.

### 2.7.1.2 Selection criteria

Flow rate class selection will be based on the supplied device, the building comfort level; the type of room to be equipped.

## 2.7.2 Comfort characteristics

### 2.7.2.1 Classification

Depending on their performance level, tapware can be classified as follows:

Class	The tap must comply with the requirements of the following articles
C0	2.6.3 Dimensional characteristics of this document 2.6.13 Verification of installation system for fixed-spout single-hole taps
C1 (note 1)	meets the requirements of Class C0 2.6.12 Resistance to alternating pressure stress (only for single taps and mixer taps with ceramic heads)
Ch1	See C1 (Note 1)
Ch2	meets the requirements of Class C1 (Note 1) 2.6.7.1 Flow rate in "fully open" position Verification of the flow rate value obtained with class E, see Article 2.7.1.1. Particular case: At bath outlet, the minimum flow rate must be of 20 L/min and be measured only with the 2 obturators in the fully open position. "Water saving" controlled flow rate
Note 1:	In cases in which the requirements of C and Ch are identical, only the letter C is used (e.g. for class 1, only C1 is used and there is no Ch1 rating)

Depending on their level of performance, the valves have a score of type A, B, C, D.

### Comfort class for washbasin, bidet, sink, shower and bath-shower faucets

Rating	A	B	C	D
Technical score	C3 – Ch3	C2 – Ch2	C1 – Ch1	C0

### 2.7.2.2 Selection criteria

The comfort class selection will mainly depend on the characteristics and use of the building.

## 2.7.3 Acoustic characteristic

### 2.7.3.1 Classification

Depending on their performance level, tapware can be classified as follows:

Acoustic group	Class	Lap
II	A1	20 dB (A) < Lap ≤ 30 dB (A)
I	A2	15 dB (A) < Lap ≤ 20 dB (A)
I	A3	Lap ≤ 15 dB (A)

Depending on their level of performance, the valves have a score of type A, B, C, D.

#### Noise level of washbasin, bidet, sink, shower and bath-shower faucets

Noise level at 3 bars (dB(A))	0	5	10	15	20	25	30	35	40+
Rating	A			B		C		D	
Technical score	A3			A2		A1		A0	

### 2.7.3.2 Selection criteria

The acoustic class selection will mainly depend on the characteristics and use of the building.

## 2.7.4 Mechanical endurance or wear resistance characteristic

### 2.7.4.1 Classification

Depending on the actual level of wear resistance of its various components, tapware can be classified as follows:

Class	Number of cycles	
U1	Obturator:	200,000 cycles
	Swivel spout:	80,000 cycles
	Bath-shower diverter:	30,000 cycles
U2	Obturator:	350,000 cycles
	Swivel spout:	140,000 cycles
	Bath-shower diverter:	50,000 cycles
U3	Obturator:	500,000 cycles
	Swivel spout:	200,000 cycles
	Bath-shower diverter:	80,000 cycles

Depending on their level of performance, the valves have a score of type A, B, C, D.

**Wear of washbasin, bidet, sink, shower and bath-shower faucets**

**Wear**

**Rating**

**Technical score**

A	B	C	D
U3	U2	U1	

**2.7.4.2 Selection criteria**

U<sub>0</sub>: this score is not possible for this rating because it is lower than the product standard.

U<sub>1</sub>: use.

U<sub>2</sub>: intensive use.

U<sub>3</sub>: intensive use and use in harsh conditions.

Concerning combination taps and single taps, only U<sub>3</sub> rating is possible for this classification.

**2.8 Example of ECAU and/or EChAU ratings**

Bath-shower tapware with:

a usage flow rate of 24 L/min, with an L<sub>ap</sub> of 18 dB (A) meeting level 1 requirements in the comfort tests and having passed the endurance tests (500,000 cycles (obturator) - 80,000 cycles (diverter)) will be classified as:

E<sub>3/1</sub> C<sub>1</sub> A<sub>2</sub> U<sub>3</sub>

Washbasin tapware with:

a usage flow rate of 5 L/min, with an L<sub>ap</sub> of 13 dB (A) meeting level 2 requirements in the comfort tests and having passed the endurance tests (500,000 cycles (obturator)) will be classified as:

E<sub>00</sub> Ch<sub>2</sub> A<sub>3</sub> U<sub>3</sub>

## 2.9 Rating presentation

### 2.9.1 Specific information for the catalogue or other commercial media

See Chapter 6.1 of the regulations for use of DT077-00.

The specific information on the methods of rating of combination taps and simple valves are as defined follows:

Flow	E	q L/min measured under 3 bar	E <sub>00</sub>	4.0 L/min ≤ q ≤ 6.0 L/min	
			E <sub>0</sub>	9.0 L/min ≤ q < 12.0 L/min	
			E <sub>1</sub>	12.0 L/min ≤ q < 16.0 L/min	
			E <sub>2</sub>	16.0 L/min ≤ q < 20.0 L/min	
			E <sub>3</sub>	20 L/min ≤ q < 25,2 L/min	
			E <sub>4</sub>	25,2 L/min ≤ q < 30,0 L/min	
			E <sub>5</sub>	30,0 L/min ≤ q < 36,0 L/min	
			E <sub>6</sub>	36,0 L/min ≤ q < 42,0 L/min	
			E <sub>7</sub>	42,0 l/min ≤ q < 48,0 l/min	
			E <sub>8</sub>	48,0 l/min ≤ q < 51,0 l/min	
			For bathtub tapware, the minimum class is E <sub>3</sub>		
Comfort	C	Type	C <sub>0</sub>	Dimensions Verification of installation system for fixed-spout single-hole taps	
			C <sub>1</sub>	Resistance to alternate pressures	
	Ch	Type	Ch <sub>2</sub>	Water saving characteristics	
Acoustics	A	Lap dB (A)	A <sub>1</sub>	20 dB (A) < Lap ≤ 30 dB (A)	
			A <sub>2</sub>	15 dB (A) < Lap ≤ 20 dB (A)	
			A <sub>3</sub>	Lap ≤ 15 dB (A)	
Wear	U	Number of cycles	U <sub>1</sub>	Obturator	200,000 cycles
				Swivel spout	80,000 cycles
				Bath-shower diverter	30,000 cycles
			U <sub>2</sub>	Obturator	350 000 cycles
				Swivel spout	140 000 cycles
				Bath-shower diverter	50 000 cycles
			U <sub>3</sub>	Obturator	500 000 cycles
				Swivel spout	200 000 cycles
				Bath-shower diverter	80 000 cycles

### 2.9.2 Product information

See Chapter 6.2 of the regulations for use of DT077-00.

### 3 ECAU and/or EChAU rating application

The rating application must be issued by the applicant/holder in one copy (**1 original on the applicant's letterhead paper in French or English**) according to the cases and models indicated below. All the documents are to be remitted to CSTB.

In the event that the product comes from a manufacturing unit located outside the European Economic Area, the applicant shall designate a representative within the European Economic Area who co-signs the application.

Note: Electronic versions of template letters and sheets may be obtained from CSTB.

The applicant produces a file that contains the elements described in the following table depending on the type of application.

*Summary Applications Table*

Type of application Elements	Initial application	Complementary application	Admission following a penalty of withdrawal	Suspension application	Renunciation application
<b>Application and commitment letter</b>	Standard letter 1A or 1B (for a representative)	Standard letter 2A or 2B (for a representative)	Standard sheet 7 specific items	Standard letter 5A or 5B (for a representative)	Standard letter 4A or 4B (for a representative)
<b>Sales literature</b>	YES	If applicable	YES	Instructions or extract from the catalogue	

#### 3.1 For an initial rating application

The applicant shall prepare a dossier which includes:

- an application and commitment letter in accordance with standard letter 1 A;
- **if a representative**, application and commitment letter as per standard letter 1 B;

#### 3.2 For a complementary rating application

The holder shall prepare a file containing the following:

- an application and commitment letter in accordance with standard letter 2 A;
- **if representative**, application and commitment letter as per standard letter 2 B;

#### 3.3 For a new rating application following a penalty of withdrawal of ECAU and/or EChAU ratings

The holder shall prepare a file containing the following:

- specific items that all applicants must submit as part of a new admission application where the right of use has been withdrawn as a result of a sanction, using standard sheet 7.

#### 3.4 For an application for the suspension of the ECAU and/or EChAU rating

The holder shall prepare a file containing the following:

- a suspension letter as per standard letter 5 A;
- **if a representative**, a suspension letter as per standard letter 5 B.

### 3.5 For an application for renunciation of the ECAU and/or EChAU rating

The holder shall prepare a file containing the following:

- a renunciation letter as per standard letter 6A;
- **if a representative,** a renunciation letter as per standard letter 6B.

**STANDARD LETTER 1A**  
**ECAU AND/OR EChAU RATINGS**

**ECAU OR EChAU RATING APPLICATION FORM**  
**FOR APPLICANTS LOCATED IN THE EUROPEAN ECONOMIC AREA**

(to be drawn up on the applicant's/holder's letterhead paper)

Centre Scientifique et Technique du Bâtiment  
Direction de l'Eau  
Division Equipements Sanitaires et du Bâtiment  
(ESB)  
For the attention of Mr. Laurent Rousseau  
84, avenue Jean Jaurès  
Champs sur Marne  
F-77447 Marne La Vallée Cedex 2

Subject: **ECAU and/or EChAU rating admission application**

Attachment(s): a technical file.

Dear Sir, Madam,

I would like to request an ECAU and/or EChAU rating:

- for the following product/range of products: ..... (detailed list of the product/range of products or specify "as set out in the list included with this application");
- produced at the following production unit: ..... (company name, address);
- and for the following trade name: ..... (trademark and/or specific trade reference, which may be on the list included with this application).

For this purpose, I declare that I have read and accept technical document 077 associated with this rating and undertake to comply with it and to inform my commercial network during the entire validity period of the ECAU and/or EChAU rating and in particular to comply without restrictions or reservations with the decisions made by CSTB.

Yours faithfully,

**Date, signature and name in full of the  
applicant/holder's legal representative**

**STANDARD LETTER 1B**  
**ECAU AND/OR EChAU RATINGS**

**ECAU OR EChAU RATING APPLICATION FORM**  
**FOR APPLICANTS LOCATED OUTSIDE OF THE EUROPEAN ECONOMIC AREA**

(to be drawn up on the applicant's/holder's letterhead paper)

Centre Scientifique et Technique du Bâtiment (CSTB)  
Direction de l'Eau  
Division Equipements Sanitaires et du Bâtiment  
(ESB)  
For the attention of Mr. Laurent Rousseau  
84, avenue Jean Jaurès  
Champs sur Marne  
F-77447 Marne La Vallée Cedex 2

Subject: **ECAU and/or EChAU rating admission application (with a representative)**  
Attachment(s): a technical file.

Dear Sir, Madam,

I would like to request an ECAU and/or EChAU rating:

- for the following product/range of products: ..... (detailed list of the product/range of products or specify "as set out in the list included with this application");
- produced at the following production unit: ..... (company name, address);
- and for the following trade name: ..... (trademark and/or specific trade reference, which may be on the list included with this application).

For this purpose, I declare that I have read and accept technical document 077 associated with this rating and undertake to comply with it and to inform my commercial network during the entire validity period of the ECAU and/or EChAU rating and in particular to comply without restrictions or reservations with the decisions made by CSTB.

Furthermore, I appoint the Company ..... (company name), ..... (company legal form), ..... (registered office) represented by Mr/Ms ..... (name of the legal representative) in that person's capacity as ..... (position) to represent me in the European Economic Area for all matters relative to ECAU and/or EChAU ratings.

I undertake to immediately notify CSTB of any new appointment of the representative designated above.

In this regard, I request that the expenses that are to be borne by me be invoiced directly to the representative. They will make the payments on my behalf and in my name as soon as the invoices are received, as agreed when accepting the role of representative.

Yours faithfully,

**Date, signature and name in full of the applicant's legal representative**

preceded by the handwritten wording "Approving representation"

**Date, signature and name in full of the representative in the European Economic Area**

preceded by the handwritten wording "Accepting representation".

**STANDARD LETTER 2A**  
**ECAU AND/OR EChAU RATINGS**

**COMPLEMENTARY APPLICATION FORM FOR ECAU AND/OR EChAU RATING  
FOR APPLICANTS LOCATED IN THE EUROPEAN ECONOMIC AREA**

(to be drawn up on the applicant's/holder's letterhead paper)

Centre Scientifique et Technique du Bâtiment (CSTB)  
Direction de l'Eau  
Division Equipements Sanitaires et du Bâtiment  
(ESB)  
For the attention of Mr. Laurent Rousseau  
84, avenue Jean Jaurès  
Champs sur Marne  
F-77447 Marne La Vallée Cedex 2

Subject: **Complementary application for the ECAU and/or EChAU rating**

Attachment(s): a technical file.

Dear Sir, Madam,

As holder of the ECAU and/or EChAU rating for the product(s) of our manufacture identified below:

- designation of the product(s): .....
- production unit: .....
- right of use granted on ..... (date) and bearing the following number: ..... (*number of valid certificate*)

I am writing to apply for the ECAU and/or EChAU rating for the following product/range of products that we manufacture:

- detailed list of the product/range of products: .....
- specific trade reference: .....

(*this information may be included in a list attached to this application*)

**For an extension application, please provide the information below:**

*This product deviates from the certified product/range of products due to the following modifications: .....  
<description of the modifications>.*

*The product/range of products for which I am seeking an extension will replace the certified product listed above:*

- NO (1);
- YES (1).

*I declare that the products/product range covered by this application are, with relation to the other characteristics, strictly in conformity with the products/product range already certified and manufactured under the same conditions.*

For this purpose, I declare that I have read and accept technical document 077 associated with this rating and undertake to comply with it and to inform my commercial network during the entire validity period of the ECAU and/or EChAU rating and in particular to comply without restrictions or reservations with the decisions made by CSTB.

Yours faithfully,

**Date, signature and name in full  
of the applicant/holder's legal representative**

(1) Delete as appropriate.

**STANDARD LETTER 2B**  
**ECAU AND/OR EChAU RATINGS**

**COMPLEMENTARY APPLICATION FORM FOR ECAU AND/OR EChAU RATING  
FOR APPLICANTS LOCATED OUTSIDE OF THE EUROPEAN ECONOMIC AREA**

(to be drawn up on the applicant's/holder's letterhead paper)

Centre Scientifique et Technique du Bâtiment (CSTB)  
Direction de l'Eau  
Division Equipements Sanitaires et du Bâtiment  
(ESB)  
For the attention of Mr. Laurent Rousseau  
84, avenue Jean Jaurès  
Champs sur Marne  
F-77447 Marne La Vallée Cedex 2

Subject: **Complementary application for the ECAU and/or EChAU rating (with a representative)**  
Attachment(s): a technical file.

Dear Sir, Madam,

As holder of the ECAU and/or EChAU rating for the product(s) of our manufacture identified below:

- designation of the product(s): .....
- production unit: .....
- right of use granted on ..... (date) and bearing the following number: ..... (*number of valid certificate*)

I am writing to apply for the ECAU and/or EChAU rating for the following product/range of products that we manufacture:

- detailed list of the product/range of products: .....
- specific trade reference: .....

(*this information may be included in a list attached to this application*)

**For an extension application, please provide the information below:**

*This product deviates from the certified product/range of products due to the following modifications: ..... <description of the modifications>.*

*The product/range of products for which I am seeking an extension will replace the certified product listed above:*

- NO (1);
- YES (1).

*I declare that the products/product range covered by this application are, with relation to the other characteristics, strictly in conformity with the products/product range already certified and manufactured under the same conditions.*

For this purpose, I declare that I have read and accept technical document 077 associated with this rating and undertake to comply with it and to inform my commercial network during the entire validity period of the ECAU and/or EChAU rating and in particular to comply without restrictions or reservations with the decisions made by CSTB.

Furthermore, I appoint the Company ..... (company name), ..... (company legal form), ..... (registered office) represented by Mr/Ms ..... (name of the legal representative) in that person's capacity as ..... (position) to represent me in the European Economic Area for all matters relative to ECAU and/or EChAU ratings.

I undertake to immediately notify CSTB of any new appointment of the representative designated above.

In this regard, I request that the expenses that are to be borne by me be invoiced directly to the representative. They will make the payments on my behalf and in my name as soon as the invoices are received, as agreed when accepting the role of representative.

Yours faithfully,

**Date, signature and name in full  
of the applicant's legal representative**

preceded by the handwritten wording "Approving representation"

**Date, signature and name in full  
of the representative in the European Economic Area**

preceded by the handwritten wording "Accepting representation".

(1) Delete as appropriate.

**STANDARD LETTER 4A**

**ECAU AND/OR EChAU RATINGS**

**APPLICATION FORM FOR RENUNCIATION OF THE ECAU FORM  
FOR APPLICANTS LOCATED IN THE EUROPEAN ECONOMIC AREA**

(to be drawn up on the applicant's/holder's letterhead paper)

Centre Scientifique et Technique du Bâtiment (CSTB)  
Direction de l'Eau  
Division Equipements Sanitaires et du Bâtiment  
(ESB)  
For the attention of Mr. Laurent Rousseau  
84, avenue Jean Jaurès  
Champs sur Marne  
F-77447 Marne La Vallée Cedex 2

Subject: **Application for renunciation of the ECAU and/or EChAU rating**

Dear Sir, Madam,

As holder of the ECAU and/or EChAU rating, I would like to renounce the ECAU and/or EChAU rating for the product(s) that we manufacture identified by the following references:

- designation of the product(s):
- manufacturing unit: ..... (company name, address): .....
- brand name: .....
- commercial reference: .....
- date of ECAU and/or EChAU rating admission: ..... or certificate No.: .....

for the following reasons:

- .....

for a maximum duration of 6 months, renewable once.

Manufacturing is due to cease on: .....

The inventories of these products with packaging marked ECAU or EChAU are the following: .....

The anticipated time it will take to deplete them is: .....

Yours faithfully,

**Date, signature and name in full of the holder's  
legal representative**

**STANDARD LETTER 4 B**  
**ECAU AND/OR EChAU RATINGS**

(to be drawn up on the distributor's letterhead)

**APPLICATION FOR RENUNCIATION OF THE ECAU AND/OR EChAU RATING WITH A  
REPRESENTATIVE FOR APPLICANTS LOCATED OUTSIDE OF THE EUROPEAN ECONOMIC  
AREA**

For the attention of Mr Laurent Rousseau  
Division Equipements Sanitaires et du Bâtiment (ESB)  
Direction de l'Eau  
CSTB  
84 avenue Jean Jaurès  
CHAMPS-SUR-MARNE  
77447 MARNE LA VALLEE CEDEX 2 (France)

Subject: **Application for renunciation of the ECAU and/or EChAU rating with a representative**

Dear Sir, Madam,

As holder of the ECAU and/or EChAU rating, I would like to renounce the ECAU and/or EChAU rating for the product(s) that we manufacture identified by the following references:

- designation of the product(s):
- manufacturing unit: (company name, address):
- brand name:
- commercial reference:
- date of ECAU and/or EChAU rating admission or admission no.:

for the following reasons:

Manufacturing is due to cease on:

The inventories of these products with packaging marked ECAU or EChAU are the following:

The expected time for their depletion is:

Yours faithfully,

**Date and signature of the holder's legal  
representative**

**Date and signature of the representative in the  
European Economic Area**

**STANDARD LETTER 5A**  
**ECAU AND/OR EChAU RATINGS**

**APPLICATION FORM FOR SUSPENSION OF THE ECAU OR EChAU RATING  
FOR APPLICANTS LOCATED IN THE EUROPEAN ECONOMIC AREA**

(to be drawn up on the applicant's/holder's letterhead paper)

Centre Scientifique et Technique du Bâtiment (CSTB)  
Direction de l'Eau  
Division Equipements Sanitaires et du Bâtiment (ESB)  
For the attention of Mr. Laurent Rousseau  
84, avenue Jean Jaurès  
Champs sur Marne  
F-77447 Marne La Vallée Cedex 2

Subject: **Application for suspension of the ECAU and/or EChAU ratings**

Dear Sir, Madam,

As holder of the ECAU and/or EChAU rating, I would like to request the suspension of the ECAU and/or EChAU rating for the product(s) that we manufacture identified by the following references:

- designation of the product(s):
- manufacturing unit: ..... (company name, address): .....
- brand name: .....
- commercial reference: .....
- ECAU and/or EChAU rating admission date: ..... or certificate No.: .....

for the following reasons:

- .....

for a maximum duration of 6 months, renewable once.

Manufacturing is due to cease on: .....

The inventories of these products with packaging marked ECAU or EChAU are the following: .....

The anticipated time it will take to deplete them is: .....

Yours faithfully,

**Date, signature and name in full of the holder's  
legal representative**

**STANDARD LETTER 5B**  
**ECAU AND/OR EChAU RATINGS**

**APPLICATION FORM FOR SUSPENSION OF THE ECAU OR EChAU RATING  
FOR APPLICANTS LOCATED OUTSIDE OF THE EUROPEAN ECONOMIC AREA**

(to be drawn up on the applicant's/holder's letterhead paper)

Centre Scientifique et Technique du Bâtiment (CSTB)  
Direction de l'Eau  
Division Equipements Sanitaires et du Bâtiment (ESB)  
For the attention of Mr. Laurent Rousseau  
84, avenue Jean Jaurès  
Champs sur Marne  
F-77447 Marne La Vallée Cedex 2

Subject: **Application for suspension of the ECAU and/or EChAU ratings (with a representative)**

Dear Sir, Madam,

As holder of the ECAU and/or EChAU rating, I would like to request the suspension of the ECAU and/or EChAU rating for the product(s) that we manufacture identified by the following references:

- designation of the product(s):
- manufacturing unit: ..... (company name, address): .....
- brand name: .....
- commercial reference: .....
- ECAU and/or EChAU rating admission date: ..... or certificate No.: .....

for the following reasons:

- .....

for a maximum duration of 6 months, renewable once.

Manufacturing is due to cease on: .....

The inventories of these products with packaging marked ECAU or EChAU are the following: .....

The anticipated time it will take to deplete them is: .....

Yours faithfully,

**Date, signature and name in full of the holder's  
legal representative**

**Date, signature and name in full of the  
representative in the European Economic Area**

**STANDARD SHEET 7**  
**ECAU AND/OR EChAU RATINGS**

**SPECIFIC ITEMS ALL APPLICANTS (INDUSTRIALISTS, IMPORTERS, DISTRIBUTORS, ETC.) MUST PRODUCE AS PART OF A NEW ADMISSION APPLICATION WHEN THE RATING HAS BEEN WITHDRAWN AS A RESULT OF A SANCTION**

In the event of an act of deceptive commercial practice under Articles L 121-2 to L121-5 of the Consumer Code (indication of a false rating of a certified product or a false label).

The applicant is responsible for determining and carrying out a course of action that will fully address and remedy the causes and consequences of their commitments as regards the correct usage of the certification mark.

ACTIONS	MINIMUM PROOF TO BE SUPPLIED BY THE CSTB APPLICANT SHOWING THE ACTIONS THEY HAVE UNDERTAKEN TO FULLY ADDRESS AND REMEDY THE CAUSES AND CONSEQUENCES	VALIDITY OF THE PROOF RECEIVED
CURATIVE ACTIONS	<ul style="list-style-type: none"> <li>A list of those affected including full contact details (customers, prospects, technical controllers, etc.) who have received false attestations/false certificates; failing that, a list of those affected (customers, prospects, technical controllers, etc.) who have been contacted over the preceding 24 months.</li> </ul>	<input type="checkbox"/> List sent <input type="checkbox"/> List not sent <i>Comments:</i> .....
	<ul style="list-style-type: none"> <li>List of customers, including full contact details, who have received products with inappropriately marked packaging information; otherwise, the list of customers of the past 24 months.</li> </ul>	<input type="checkbox"/> List sent <input type="checkbox"/> List not sent <i>Comments:</i> .....
	<ul style="list-style-type: none"> <li>Letter written by the Applicant's manager informing those affected of the invalidity of the false attestations/false certificates they have been sent.</li> </ul>	<i>CSTB will verify that this action has been carried out by contacting 5% of those affected or at least 5 customers and technical controllers.</i>  <input type="checkbox"/> Letter of information duly implemented, corroborated by those affected <input type="checkbox"/> Letter of information not implemented or partially implemented <i>Comments:</i> .....
	<ul style="list-style-type: none"> <li>Letter written by the Applicant's manager informing the customers of products that are inappropriately marked or products bearing the certification mark(s).</li> </ul>	<i>CSTB will verify that this action has been carried out by contacting 5% of the customers or at least 5 customers</i>  <input type="checkbox"/> Letter of information duly implemented, corroborated by those affected <input type="checkbox"/> Letter of information not implemented or partially implemented <i>Comments:</i> .....
	<ul style="list-style-type: none"> <li>Action undertaken against the person or persons responsible for approving and issuing the false attestations/false certificates and/or delivering inappropriately marked products.</li> </ul>	<input type="checkbox"/> Action is relevant <input type="checkbox"/> Action is not relevant <i>Comments:</i> .....

## 4 Prices

The purpose of this chapter is to determine the amount due for services related to the ECAU and EChAU ratings and describe the terms of payment.

The ECAU and EChAU ratings include the following services:

- Development, examination of application and implementation of ECAU and/or EChAU ratings;
- Operation of ECAU and/or EChAU ratings;
- Testing;

### 4.1 Services related to the ECAU and EChAU ratings

Nature of the service	Definition of the service	Paying for the services
<u>Management:</u> Development and implementation of ratings, examination of the rating application	Participation in the implementation of the ratings, including preparation of the associated technical document.  Services including examination of application files, relations with applicants, laboratories and assessment of inspection results.	➤ <i>Initial/complementary application: See § 4.2.1</i>
<u>Management:</u> Rating operation	Services including management of rating files, relations with holders, laboratories, publication of ratings data on certificates, assessment of inspection results.	➤ <i>Monitoring: See § 4.2.2</i>
Tests	Laboratories' testing services	The laboratories' price lists are provided upon request. The applicant/holder supplies samples free of charge and makes them available at the laboratory's address. The costs related to the import duties and taxes are to be borne by the test applicant; the applicant shall pay all duties and taxes before sending the samples. ➤ <i>Initial/complementary application: See § 4.2.1</i> ➤ <i>Monitoring: See § 4.2.2</i>

## 4.2 Paying for the services

### 4.2.1 Initial application/complementary application

Management and testing fees related to examination services are invoiced in the framework of an initial or complementary ECAU and/or EChAU rating application. They are payable in one instalment, at the time at which the application is filed, for official registration.

Such fees will remain payable even if the ECAU and/or EChAU rating is not granted or extended or if the application is withdrawn during the examination.

### 4.2.2 Monitoring

Fees for annual services related to management and testing of ECAU and/or EChAU ratings are invoiced during the first quarter of each year and will remain payable in the event of non-renewal, withdrawal, cancellation or suspension of the ECAU and/or EChAU rating during the year.

### 4.2.3 Non-payment of amounts due

The applicant or holder of the ECAU and/or EChAU rating must pay all fees in accordance with the established terms of payment. Any failure on their part is an obstacle to the fulfilment by CSTB of the responsibilities of inspection and corrective action that are incumbent upon it hereunder.

If a first official notice by registered letter with acknowledgement of receipt does not result in the payment of all amounts due within one month, any established penalties may be applied for all of the products accepted for such holder.

## 4.3 Prices

Prices are reviewed annually, in the form of a price list drawn up by CSTB. This revision is reported by CSTB.

If holders refuse to recognise the annual revision of fees, they shall be deemed to have voluntarily terminated the ratings for their products.

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