



SANITARY COMPONENTS

CERTIFICATION

NF Certification System Technical Management Appendix: Sanitary Components



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MODIFICATION HISTORY

Modified Part	Revision No.	Effective date	Modification made
/	12	18/03/2021	Creation of the document.

Part 1. PURPOSE

The purpose of this document, the Technical Management Appendix to the NF076 Reference System, revision 12, is to describe the manufacturer's production quality requirements as well as the inspection methods used by the CSTB regarding each "sanitary components" family of products, whose specifications are laid down in the following Technical Documents: 076-02, 076-03, 076-04, 076-05 and 076-06.

Part 2. INLET VALVES FOR FLUSHING CISTERNS

1 Quality requirements of the manufacturer's production

1.1 Nature and frequency of the quality assurance operations

1.1.1 VERIFICATION DURING PRODUCTION

The manufacturer shall make sure that the characteristics described in product Standard NF EN 14124 and in Part 1 of this document are complied with. However, procedures and equipment, different from those described in the standards may be used.

The quality assurance operations on characteristics during production as well as their frequencies are specified in the Table below.

Quality assurance operations during production

Characteristics checked	Check frequency
Marking	Quality documentation
Conformation and packaging	Quality documentation
Standardised dimensions	Quality documentation
Hygiene (Dimensions)	Quality documentation
Procurement of materials and components	Identification of the material for each batch at each delivery or compliance certificate from the supplier and/or Quality assurance operation
Leaktightness	100% of the pieces
Hydraulic characteristics (Presence of flow)	100% of the pieces

1.1.2 QUALITY ASSURANCE OPERATIONS ON THE FINISHED PRODUCTS

The procedures for the inspections and tests carried out as part of finished product quality assurance operations in the factory's laboratory, and the test equipment used, shall comply with the specifications of Standard NF EN 14124 and of Part 1 of this document.

The products to be checked are sampled at the end of the assembly lines (after packaging) or as they come into the warehouse.

The types of quality assurance operations on finished products as well as their sampling are defined in the Table below.

Quality assurance operations on finished products

Tests	Sampling: Sampling plans approved by CSTB
Marking (§1.10 of DT 076-02 and § 9 of Standard NF EN 14124)	yes
Presentation (§1.10 of DT 076-02)	yes
Bimaterial end connection (§1.3.2 of DT 076-02)	yes
Dimensional characteristics (§ 1.3.1 of DT 076-02 and § 5.4 of Standard NF EN 14124), (§1.5 of DT 076-02)	yes
Static leaktightness characteristics (§ 1.6 of DT 076-02 and § 7.4.2 of Standard NF EN 14124)	yes
Dynamic leaktightness characteristics (§ 7.4.3 of Standard NF EN 14124)	yes
Hydraulic characteristics (§ 7.5 of Standard NF EN 14124)	yes
Pressure resistance characteristics (§ 7.8 of Standard NF EN 14124)	yes
Some tests may not be necessary for ISO 9001 certified manufacturing sites. In this case, the holder shall prove compliance with the specifications through design control and the auditor shall verify the design to assure control over the system.	

2 Procedures for the quality assurance operations carried out by CSTB

2.1 Types of products

A product is designated by:

- its size,
- its assembly method,
- its adjustment possibilities,
- its acoustic group,
- the reference to the standard.

A product can be explicated:

- as a system defining the hydraulic part,
- as a variant, explication of a single system.

2.2 Nature of the inspections and tests

The inspections and tests are carried out in compliance with the instructions of Standard NF EN 14124 and with the added specifications of this document.

Test No.	Nature of the tests
1	Verification of the dimensional characteristics
2	Verification of the efficiency of the air inlet
4	Checking the leaktightness: static pressure test
5	Checking the leaktightness: dynamic pressure test
6	Hydraulic characteristics
7	Pressure resistance characteristics
8	Mechanical endurance
9	Bending strength, tensile strength and resistance to tightening torque
10	Acoustic characteristics
11	Water hammer
12	Resistance to stresses from alternating pressures
13	Marking
14	Pressure resistance on incorporated feed pipe
15	Tensile stress on incorporated feed pipe
16	Resistance to alternating pressures on incorporated feed pipe
17 (*)	Checking corrosion resistance
18 (*)	Checking the plating's adhesive strength
19	Compatibility with the supply network's disinfection products

So as not to multiply the tests on components common to several products (hydraulic system, type of threading, type of supply or feed method) correlations can be applied.

(*): These tests concern the Nickel/Chrome plated components that come with the valve.

2.3 Sampling

2.3.1 CASE OF ADMISSION

The tests are carried out according to the procedures described below on samples taken during the admission audit.

Tests 1 to 13 and 17 to 19 are carried out,

Tests 14 to 16 are carried out in the case of hose incorporated with the valve.

For the marking (characteristic 13), the manufacturer shall present an implementation plan.

2.3.2 CASE OF FOLLOW-UP

The tests are carried out according to the procedures described below on the samples taken during the follow-up audit.

Test No.	Nature of the quality operations on the products and samplings
19	At each change of material or process
1, 2, 4, 5, 6, 8, 13, 19	On all the models of products sampled
7, 9, 11, 12, 17, 18	Every two years, on one model of the products sampled
10*	Every five years, 3 products per connection method for a single system
14, 15,16	Once per model per year
*: acoustic tests	

2.3.3 CASE OF ADDITIONAL ADMISSION (NEW PRODUCTS) OR EXTENSION (MODIFIED PRODUCTS)

After CSTB's agreement, and depending on the modifications, the manufacturer sends the necessary samples for carrying out the tests.

Part 3. FLUSHING MECHANISMS FOR WC FLUSHING CISTERNS

1 Quality requirements of the manufacturer's production

1.1 Nature and frequency of inspections

1.1.1 CHECKING DURING MANUFACTURE

The manufacturer shall make sure that the functions described in Part 1 of this document are properly carried out. However, procedures and apparatus different from those described in the standards may be used.

During manufacture, the functions to be checked as well as the frequencies of those quality assurance operations are specified in the tables below.

Checking during manufacture

Controlled function	Check frequency
Marking	Quality documentation
Packaging	Quality documentation
Standardised dimensions	Quality documentation
Supply of materials and components	Identification of the material for each batch, at each delivery or supplier's certificate of conformity - and/or Inspection
Quality of moulding	Quality documentation
Watertightness of the obturator	Quality documentation
Hydraulic operation	Quality documentation
Easy handling	Quality documentation

1.1.2 INSPECTION OF FINISHED PRODUCTS

The procedures for the inspections carried out on finished products in the plant laboratory or in an outside laboratory and the test rigs used shall conform to the specifications defined in Part 1 of this document. However, different procedures and test rigs may be used provided that the results obtained are identical and subject to CSTB's agreement.

The products to be controlled are sampled at the end of the assembly lines (after packaging) or on entry into the warehouse.

The types of inspections on finished products and their sampling are given in the table below.

Inspection of finished products

Tests (§ in the technical document)	Sampling: Sampling plans approved by CSTB
Dimensional characteristics (§1.9)	yes
Hydraulic characteristics (§1.11)	yes
Hygiene and safety characteristics (§1.12)	yes
Leak tightness characteristics (of the check valve) (§1.13)	yes
Mechanical characteristics (apart from endurance) (§1.14)	yes
Presentation at delivery (§1.15)	yes
Some tests may not be necessary for ISO 9001 certified manufacturing sites. In this case, the holder shall prove compliance with the specifications through design control and the auditor shall verify the design to assure control over the system.	

2 Procedures of inspections carried out by CSTB

2.1 Types of products

The different types of products controlled by the inspection body or bodies and tested by the laboratory or laboratories of the NF mark are flushing mechanisms for WC flushing cisterns (Part 1 of this document).

2.2 Nature of inspections

The inspections and tests are carried out in conformity with Part 1 of this document.

Test no.	Type of test
1	Verification of dimensional characteristics
2	Hygiene and safety characteristics
4	Leak tightness characteristics: Pressure test
5	Leak tightness characteristics: Ozone tests on gaskets
6	Hydraulic characteristics
7	Mechanical characteristics: Operating force
8	Mechanical endurance
9	Nature of the apparent surfaces and quality of the coating
10	Marking
11	Assembly and adjustment instructions
12	Compatibility with disinfection products for networks

Correlations can be applied in order to avoid multiplying tests on components common to several products.

2.3 Sampling

2.3.1 ADMISSION:

The tests are performed on the samples taken during the admission audit, according to the conditions described below.

Tests 1 to 9 and 12 are carried out.

As regards marking and instructions (items 10 and 11), the manufacturer shall submit an implementation project.

2.3.2 FOLLOW UP CASE:

The tests are performed on the samples taken during the follow-up audit, according to the conditions described below.

Test No.	Type of inspections of products and sampling
1, 2, 4, 6, 7, 8, 10, 11, 12	All the products sampled.
5, 9	Every two years or each time the material, process or supplier changes.

2.3.3 CASE OF ADDITIONAL ADMISSION (NEW PRODUCTS) OR EXTENSION (MODIFIED PRODUCTS):

Following CSTB's agreement and depending on the modifications, the manufacturer shall send the samples necessary for the tests to be performed.

Part 4. GULLIES AND GUTTERS WITH WATER SEAL

1 Manufacturer's production quality requirements

1.1 Nature and frequency of inspections

1.1.1 CHECKING DURING MANUFACTURE

The manufacturer shall assure that gullies and gutters are manufactured in compliance with the technical specifications in Standard NF EN 1253-1 and the complementary technical specifications in this document.

However, procedures and test apparatus different from those described in the standards may be used.

The functions to be checked as well as their frequencies are specified in Table 1.

Table 1: Checking during manufacture

Controlled function	Specifications article no. in NF EN 1253-1	Frequency of inspections
Appearance	4.1.2	Manufacturer's quality documentation
Standardised dimensions	4.1.3 4.1.4 4.2.1 5.1 5.3.1 5.4.1	Manufacturer's quality documentation
Materials	4.4	Manufacturer's quality documentation
Membrane clamped to the gully	5.7.2 5.7.3	Manufacturer's quality documentation
Marking	7	Manufacturer's quality documentation
Packaging		Manufacturer's quality documentation

1.1.2 INSPECTION OF FINISHED PRODUCTS

The procedures for the inspections carried out as part of quality control of finished products in the factory's laboratory, and the test apparatus used shall comply with the specifications of Standard NF EN 1253 Part 1 and of this document.

The products to be controlled are sampled at the end of the assembly lines (after packaging) or on entry into the warehouse.

The types of finished product inspections and their samplings are given in Table 2.

Table 2: Inspection of finished products

Tests	Specifications article no. in NF EN 1253-1	Sampling: Sampling plans accepted by CSTB
Appearance	4.1.2	yes
Standardised dimensions	4.1.3 4.2.1 5.1 5.3.1	yes
Materials	4.4	yes
Membrane clamped to the gully	5.7.2 5.7.3	yes
Marking	7	yes
Packaging		yes

2 Procedures for inspections carried out by CSTB

2.1 Types of products

The different types of products controlled by the inspection body and tested by the CSTB laboratory are floor gullies or gutters in classes K3 and L15.

A product is designated by:

- the product type: gully or gutter
- its characteristics: ready-to-tile, with panel, with flexible floor covering
- its application

A product can vary:

- part of a range: gully or gutter with membrane or without membrane ready to be tiled, gully or gutter with panel ready to be tiled, etc.
- a variant: if another reference or another grating or panel dimension is proposed ... without any technical influence on the product.

2.2 Nature of inspections

The inspections and tests are carried out based on the specifications in Standard NF EN 1253 Part 1 and on the complementary specifications in this document.

Table 3: Tests performed on products for admission

Reference system	Article No.	Test
NF EN 1253-1 and DT076-04		
	4.1.2	Appearance
	4.1.3	Dimensions of apertures in gratings
	4.1.5	Depth of water seal
	4.1.6	Resistance of water seal to pressure
	4.2.1	Access for cleaning
	4.2.2	⁽¹⁾ Self-cleaning capacity
	4.2.3	Blockage prevention
	5.2	⁽²⁾ Position of side water inlets
	5.5.1	Temperature cycles for inlets/gullies
	5.5.2	⁽³⁾ Temperature cycles: Additional test
	5.6	Loading strength
	5.8.1	Odour tightness
	5.8.2	Watertightness
	5.8.3	⁽⁴⁾ Gully leak tightness with flexible plastic floor covering, membranes or liquid applied membranes (vacuum test)
	5.7.1	⁽⁵⁾ Mechanical strength of the inlet/gully and the upstand connection
	5.7.2	⁽⁶⁾ Mechanical strength of the membrane ring or clamping flange
	5.7.3	Mechanical strength of the factory-fitted membrane
	5.9.1	Flow through the grating
	5.9.2	⁽²⁾ Flow through the grating and the side inlets
	7	Marking
DT076-04	§ 5.10	Clogging test for gullies with water seal < 50 mm

Test sequence in the case of an inlet/gully for tiled floor
4.2.1 --- 5.8.2 --- 5.5.1 --- 5.8.2 --- 4.2.1 --- 5.8.1 --- 5.7.1/5.7.3

Test sequence in the case of an inlet/gully for flexible plastic floor covering
4.2.1 --- 5.8.1 --- 5.7.2 --- 5.8.3 --- 5.5.1 --- 4.2.1 --- 5.8.1 --- 5.7.3 --- 5.8.3

If the test sequence has to be interrupted, the tests must be restarted from the beginning on new samples.

Additional test sequence to be performed on a new sample, only in the case of a gully with water seal < 50 mm: 5.10 --- 5.8.1 --- 5.8.2 --- 5.9.1

- ⁽¹⁾ Only if the gully is self-cleaning (gully that cannot be cleaned by removing the gully partition).
- ⁽²⁾ Only for a gully with a side water inlet.
- ⁽³⁾ Only for a gully used with a flexible plastic floor covering and liquid applied membranes.
- ⁽⁴⁾ Only for a gully with a membrane fitted at the factory or used with a flexible plastic floor covering.
- ⁽⁵⁾ Only when the gully is used with a flexible plastic floor covering and when the gully is not embedded.
- ⁽⁶⁾ Only for a gully with a membrane fitted or not fitted at the factory.

2.3 Sampling

2.3.1 ADMISSION

The manufacturer shall send the samples necessary for the tests listed in Table 3.

The tests are performed according to the conditions described below:

- Perform all the tests in Table 4.
- For the load test:
 - If there are several grating references, the manufacturer sends 3 gratings of the same identical reference and 1 grating for each other reference for which it is applying for certification. For each follow-up operation, a different grating reference will be tested in accordance with Standard NF EN 1253-1, article 4, on 3 samples.
 - If there are several dimensions (for gutters), the test shall be done on the smallest gutter.
- The manufacturer will be asked to prepare the specimen to determine the mechanical strength of the sealing membrane fitted at the factory.
- As regards marking, the manufacturer shall submit an implementation project.

2.3.2 FOLLOW-UP

The tests are performed according to the conditions described below, on the samples taken during the follow-up audit (namely 3 samples).

Table 4: Checks performed by CSTB

Function to be verified	Specifications article no. in NF EN 1253-1	Number of samples
Appearance	4.1.2	all sampled products
Standardised dimensions	4.1.3 4.2.1 5.1 5.3.1	all sampled products
Materials	4.4	all sampled products
Thermal behaviour	4.5	all sampled products
Leak tightness	4.6.1 4.6.2 4.6.3	all sampled products
Membrane clamped to the gully	5.7.2 5.7.3	all sampled products
Marking	7	all sampled products
Classification depending on the applied load	4.3	- 3 identical reference gratings and - 1 grating for each different reference for each follow-up operation
Clogging	DT076-04	

2.3.3 COMPLEMENTARY ADMISSION (NEW PRODUCTS) OR EXTENSION (MODIFIED PRODUCTS)

Following CSTB's agreement and depending on the modifications, the manufacturer shall send the samples necessary for the tests to be performed according to Table 3.

Part 5. GULLIES WITH MECHANICAL SEAL

1 Manufacturer's production quality requirements

1.1 Nature and frequency of inspections

1.1.1 CHECKING DURING MANUFACTURE

The manufacturer shall assure that gullies and gutters are manufactured in compliance with the technical specifications in Standard NF EN 1253-1 and the complementary technical specifications in this document.

However, procedures and test apparatus different from those described in the standards may be used.

The functions to be checked as well as their frequencies are specified in Table 1.

Table 5: Checking during manufacture

Controlled function	Specifications article no. in this document	Frequency of inspections
Appearance	3.1.2	Manufacturer's quality documentation
Standardised dimensions	3.1.3/4.1 3.2.1/4.3.1 3.2.2	Manufacturer's quality documentation
Materials	3.4	Manufacturer's quality documentation
Membrane	3.7.3.2/4.6.3	Manufacturer's quality documentation
Marking	5	Manufacturer's quality documentation
Packaging	6	Manufacturer's quality documentation

1.1.2 INSPECTION OF FINISHED PRODUCTS

The testing apparatus and inspection procedures used to inspect finished products in the factory's laboratory shall comply with the requirements of this document.

The products to be controlled are sampled at the end of the assembly lines (after packaging) or on entry into the warehouse.

The types of finished product inspections and their samplings are given in Table 2.

Table 6: Inspection of finished products

Tests	Specifications article no. in this document	Sampling: Sampling plans accepted by CSTB
Appearance	3.1.2	yes
Standardised dimensions	3.1.3/4.1 3.2.1/4.3.1 3.2.2	yes
Materials	3.4	yes
Membrane	3.7.3.2/4.6.3	yes
Marking	5	yes
Packaging	6	yes

2 Procedures for Inspections carried out by CSTB

2.1 Types of products

The different types of products controlled by the inspection body and tested by the CSTB laboratory are floor gullies or gutters in classes K3 and L15.

A product is designated by:

- the product type: gully or gutter
- its characteristics: ready-to-tile, with panel, with flexible floor covering
- its application

A product can vary:

- part of a range: gully or gutter with membrane or without membrane ready to be tiled, gully or gutter with panel ready to be tiled, etc.
- a variant: if another reference or another grating or panel dimension is proposed ... without any technical influence on the product.

2.2 Nature of inspections

The inspections and tests are carried out based on the specifications of this document.

Table 7: Tests performed on products for admission

Article of this document	Test
3.1.2	Appearance
3.1.3/4.1	Grating opening
3.1.4/4.2	Resistance of the seal to pressure
3.2.1/4.3.1	Access for cleaning
3.2.2/4.3.2	Sealing system
3.5/4.3.4	Thermal behaviour of gullies
3.6.1/4.6.1	Odour tightness
3.6.2/4.6.2	Gully body watertightness
3.6.3/4.6.2	Upstand watertightness
3.7.1/4.4	Loading strength
3.7.2/4.5.2	Ring or clamping flange
3.7.3.1/4.6.2	Upstands for gullies for use with a flexible plastic floor covering
3.7.3.2/4.6.3	Gullies for use with a membrane
3.7.3.3/4.6.3	Gullies for use with a flexible plastic floor covering
3.7.3.4/4.5.3	Gullies with membrane fitted and assembled at the factory
3.7.3.5/4.5.3	Gullies for use with a liquid applied membrane
3.8/4.7.1	Flow rates
4.3.3	Clogging test

Test sequence No.1:

4.3.1 – 4.3.2 -4.6.2 – 4.3.4 (*) – 4.2 - 4.6.2 – 4.3.1 – 4.6.1 – 4.5.1 – 4.5.2 – 4.5.3

(*) to be performed depending on the type of floor

The test sequence is done on sample 1 but if the test sequence has to be interrupted, the tests must be restarted from the beginning. Samples 2 and 3 are provided for this purpose.

Test sequence No. 2:

4.3.1 – 4.3.3 – 4.6.1 – 4.6.2 – 4.7

2.3 Sampling

2.3.1 ADMISSION

The manufacturer provides the samples needed for the tests in table 3, namely 5 samples (sample No.5 serving as the control sample if problems arise with the tests performed).

The tests are performed according to the conditions described below:

- Perform all the tests in Table 3.
- For the load test:
 - If there are several grating references, the manufacturer sends 3 gratings of an identical reference and 1 grating for each other reference for which it would like certification. For each follow-up operation, a different grating reference will be tested in accordance with article 3 of this document on three samples.
 - If there are several dimensions (for gutters), the test shall be done on the smallest gutter.
- The manufacturer will be asked to prepare the specimen to determine the mechanical strength of the sealing membrane fitted at the factory.
- As regards marking, the manufacturer shall submit an implementation project.

2.3.2 FOLLOW-UP

The tests are performed according to the conditions described below in table 4, on the samples taken during the follow-up audit (namely 3 samples).

Table 8: Checks performed by CSTB

Function to be verified	Specifications article no. in this document	Number of samples
Appearance	4.1.2	all sampled products
Standardised dimensions	3.1.3/4.1 3.2.1/4.3.1 3.2.2	all sampled products
Materials	3.4	all sampled products
Thermal behaviour	3.5	all sampled products
Leak tightness	3.6.1 3.6.2 3.6.3	all sampled products
Membrane	4.5.2 4.5.3	all sampled products
Marking	5	all sampled products
Classification depending on the applied load	3.3	- 3 identical reference gratings and - 1 grating for each different reference for each follow-up operation
Clogging	4.3.3	

2.3.3 COMPLEMENTARY ADMISSION (NEW PRODUCTS) OR EXTENSION (MODIFIED PRODUCTS)

Following CSTB's agreement and depending on the modifications, the manufacturer shall send the samples necessary for the tests to be performed according to table 3.

Part 6. CONNECTION ELEMENTS FOR TOILETS, URINALS AND SQUAT TOILETS

1 Quality requirements of the manufacturer's production

1.1 Nature and frequency of the inspection operations

1.1.1 INSPECTION DURING PRODUCTION

The manufacturer shall make sure that the characteristics described in paragraphs 3 and 4 of this document are complied with. However, procedures and equipment different from those described in the standards may be used.

During manufacture, the functions to be checked as well as their frequency are specified below.

Table 1: Inspection during manufacture

Controlled function	Inspection frequency
Supply of materials and components	Identification of the material for each batch, at each delivery or supplier's certificate of conformity and/or inspection
Standardised dimensions	Quality documentation
Impact resistance	Quality documentation
Anchoring	Quality documentation
Marking	Quality documentation

1.1.2 INSPECTION OF FINISHED PRODUCTS

The procedures for the inspections carried out on finished products in the plant laboratory or in an outside laboratory and the test rigs used shall conform to the specifications defined in paragraphs 3 and 4 of this document. However, different procedures and test rigs may be used provided that the results obtained are identical and subject to CSTB's agreement.

The products to be controlled are sampled at the end of the assembly lines (after packaging) or on entry into the warehouse.

The types of inspections on finished products and their sampling are given in the table below.

Table 2: Inspection of finished products

Tests (§ in Technical Document 076-06)	Sampling: Requirements or sampling plans approved by CSTB
Dimensional characteristics (§4.1)	Yes
Impact resistance (§4.2)	Yes
Water tightness (§4.3.1)	Twice a year per discharge pipe model
Air tightness (§4.3.2)	Yes
Anchoring (§1.14)	Yes
Compatibility with the products used for disinfection of water distribution networks (§4.5)	Yes

2 Procedures of inspections carried out by CSTB

2.1 Types of products

The different types of products controlled by the inspection body or bodies and tested by the laboratory or laboratories of the NF mark are connection elements used for toilets, urinals and squat toilets (flush pipes and discharge pipes).

2.2 Nature of inspections

The inspections and tests are carried out in conformity with paragraphs 3 and 4 of this document.

Test no.	Type of test
1	Verification of dimensional characteristics
2	Impact resistance
3	Water tightness
4	Air tightness
5	Anchoring
6	Compatibility with the products used for disinfection of water distribution networks
7	Marking

2.3 Sampling

2.3.1 ADMISSION CASE

The tests are performed on the samples taken during the admission audit, according to the conditions described below.

Tests 1 to 6 are carried out on all the models and, in the event of a range of products, on 1 representative product.

As regards marking (item 7), the manufacturer shall submit an implementation project.

2.3.2 FOLLOW-UP CASE

The tests are performed on the samples taken during the follow-up audit, according to the conditions described below.

Test no.	Type of inspections of products and sampling
1 to 6	1 flush pipe model and 1 discharge pipe model

2.3.3 CASE OF COMPLEMENTARY ADMISSION (NEW PRODUCTS) OR EXTENSION (MODIFIED PRODUCTS)

Following CSTB's agreement and depending on the modifications, the manufacturer shall send the samples necessary for the tests for the tests to be performed