# SLOVENSKI STANDARD
# oSIST prEN 246:2020

**01-september-2020**

**Sanitarne armature - Splošne specifikacije za regulatorje pretoka**

Sanitary tapware - General specifications for aerators

Sanitärarmaturen - Allgemeine Anforderungen an Strahlregler

Robinetterie sanitaire - Spécifications générales pour les aérateurs



**Ta slovenski standard je istoveten z:** **prEN 246**



**ICS:**

| | | |
|---|---|---|
| 91.140.70 | Sanitarne naprave | Sanitary installations |

**oSIST prEN 246:2020** **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# DRAFT
# prEN 246

June 2020

ICS 91.140.70

Will supersede EN 246:2003

English Version

# Sanitary tapware - General specifications for aerators

Robinetterie sanitaire - Spécifications générales pour les aérateurs

Sanitärarmaturen - Allgemeine Anforderungen an Strahlregler

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 164.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.



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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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# Contents

Page

## European foreword

This document (prEN 246:2020) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 246:2003.

In comparison with the previous edition, the following technical modifications have been made:

— Update to Table 2 (dimensions);

— Update to Table 3 (dimensions);

— Addition of new Clause 8 – Test sequence;

— Addition of new Clause 11 – Performance of aerators with integrated flow regulators.

# 1 Scope

This document specifies:

— the dimensional, mechanical, hydraulic and acoustic characteristics with which sanitary tapware aerators (with and without flow regulation) should comply;

— the procedures for testing these characteristics.

This document is applicable to:

— Sanitary tapware aerators intended to be mounted on tapware used with sanitary appliances in toilets, bathrooms and kitchens (e.g. single taps, combination tap assemblies, mechanical mixing valves, thermostatic mixing valves);

— Sanitary tapware aerators used under the following pressure and temperature conditions (see Table 1).

**Table 1 — Conditions for the use of aerators**

| | Limits of use | Recommended limits for correct operation |
|---|---|---|
| Dynamic Pressure | 0,05 *MPa* ≤ *P* ≤ 0,5 *MPa* (0,5 *bar* ≤ *P* ≤ 5 *bar*) | 0,1 *MPa* ≤ *P* ≤ 0,5 *MPa* (1 *bar* ≤ *P* ≤ 5 *bar*) |
| Temperature | ≤ 70 °*C* | ≤ 65 °*C* |



Note 1: Sanitary tapware aerators can only be connected downstream of the obturator of the sanitary tapware product.



Note 2: For the purposes of brevity, sanitary tapware aerators will be detailed only as aerators in the rest of this document.

Note 3: The tests described in this document are type tests (laboratory tests) and not quality control tests carried out during manufacture.

# 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 200, *Sanitary tapware — Single taps and combination taps for water supply systems of type 1 and type 2 — General technical specification*

EN 248, *Sanitary tapware — General specification for electrodeposited coatings of Ni-Cr*

EN 817, *Sanitary tapware — Mechanical mixing valves (PN 10) — General technical specifications*

EN ISO 3822-1, *Acoustics — Laboratory tests on noise emission from appliances and equipment used in water supply installations — Part 1: Method of measurement (ISO 3822-1)*

EN ISO 3822-4, *Acoustics — Laboratory tests on noise emission from appliances and equipment used in water supply installations — Part 4: Mounting and operating conditions for special appliances (ISO 3822-4)*

ISO 49, *Malleable cast iron fittings threaded to ISO 7-1*

# 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

**3.1**
**sanitary tapware aerator**
device which is fitted at the outlet of a sanitary tapware product to impact the flow rate and stream appearance of the water stream

Note 1 to entry: A distinction is made between stream appearance: a) aerators without air intake (known as "laminar" stream), b) aerators with air intake and c) spray models (numerous single jets).

Note 2 to entry: Aerator swivels are to be tested in combination with a specific aerator only and are therefore considered to be sanitary tapware accessories. (Testing of the stand-alone swivels is therefore not covered by the scope of this document. Where swivels are used they are considered to be part of the tapware constructions, e.g. for bidet taps).

**3.2**
**aerators with integrated flow regulators**
An aerator that incorporates an integral flow regulator – fitted to the outlet of a sanitary tapware product to impact the stream appearance of the water stream and additionally controlling the flow rate within specified limits independent from the supply pressure (see tolerances in 11.1.3)



**3.3**
**flow regulator**
A device fitted to sanitary tapware to regulate the flow rate



Note to entry The key function is to achieve a flow rate – within specified limits, independent from the supply pressure

# 4 Designation

An aerator is designated by:

— its type (with/without air intake);

— its thread dimension;

— its acoustic group (where applicable);

— flow rate (either ISO classification (ISO 3822-4) or the nominal flow rate for aerators with integrated flow regulators or stand-alone flow regulators;

— reference to this document.

Examples of designation:

Aerator, with female thread: M22x1; I; A – EN 246 (cf. Figure 1 and Table 2)

Aerator laminar, with male thread: M24x1; I; A – EN 246 (cf. Figure 2 and Table 3)

Aerator, with male thread: M22x1; 6 l/min – EN 246

# 5 Marking – Identification

Aerators complying with this document shall be marked (on the insert or the housing) by any means to allow for identification e.g. embossing, colour coding, number coding etc. Aerators should be marked with:

— the mark or name or trade name of the manufacturer;

— the acoustic group (if applicable);

— coding, number coding or any appropriate combination of methods etc.).

# 6 Materials

## 6.1 Chemical and hygiene requirements

All materials coming into contact with water intended for human consumption shall present no risk to health.

They shall not cause any change of the drinking water in terms of quality, appearance, smell or taste.

## 6.2 Exposed surface conditions

Visible chromium plated surfaces and Ni-Cr coatings shall comply with the requirements of EN 248.

# 7 Dimensions



## 7.1 Aerators with female thread



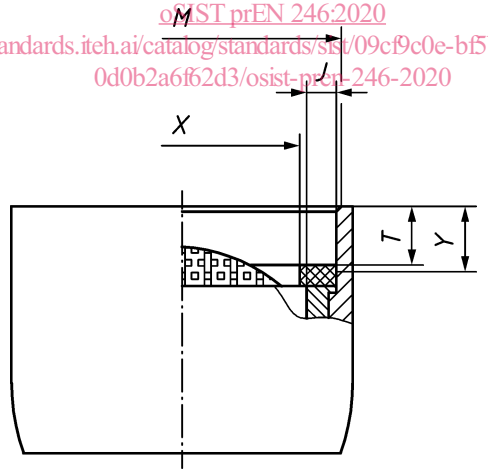



**Figure 1 — Aerators with female thread**

**Table 2 — Dimensions for aerator with female thread**

| Symbol | Values (mm) |
|---|---|
| M | *M*22x1 – 6*H* |
| X | 14 ≤ X ≤ 17 |
| T | 3,5 ≤ T ≤ 4,3 |
| Y | ≥ 4,5 |
| J | ≥ 2,0 |

## 7.2 Aerators with male thread

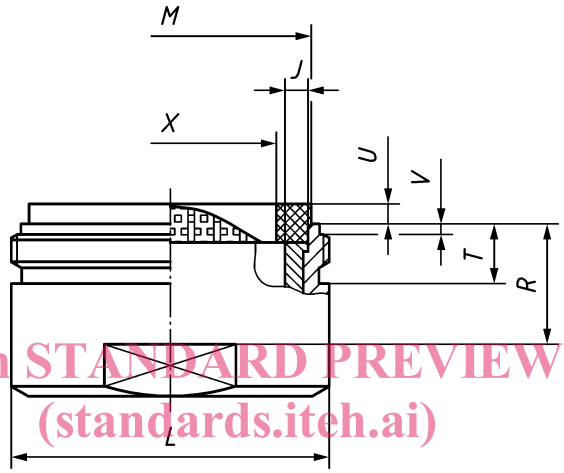





**Figure 2 —Aerators with male thread**



**Table 3 — Dimensions for aerators with male thread**

| Symbol | Values (mm) | |
|---|---|---|
| M | *M*24x1 – 6*g* | *M*28x1 – 6*g* |
| X | 14 ≤ X ≤ 17 | 15 ≤ X ≤ 19 |
| T | 4,5 ± 0,1 | 7 ± 0,1 |
| R | ≥ 9 | ≥ 14 |
| U | 1,5 ± 0,5 | 1,5 ± 0,5 |
| L | 24 0/-0,2 | 28 0/-0,2 |
| V | 0,8 ± 0,1 | 0,8 ± 0,1 |
| J | ≥ 2 | ≥ 2,5 |

## 7.3 Special cases

Aerators intentionally not complying with the dimensional specifications according to subclauses 7.1 and 7.2, shall comply with all other requirements of this document. Where this is the case, the manufacturer shall provide appropriate dimensional data. (for example, aerators without housing, or with metrics different to M22, M24 and M28)

## 8 Test sequence

Aerators, depending on their type shall be tested in the following sequence:

**Table 4 — Aerators without flow regulation**

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| **Dimensions** | | 7 | | | |
| **Hydraulic Performance** | 10.1 | 10.1 | 10.1 | 10.1 | 10.1 |
| **High temperature** | 10.2 | | 10.2 | | 10.2 |
| | | | | | |
| **Pressure resistance** | 12 | | | | |

Note: Additional samples may be required to undertake acoustic testing – see subclause 10.3

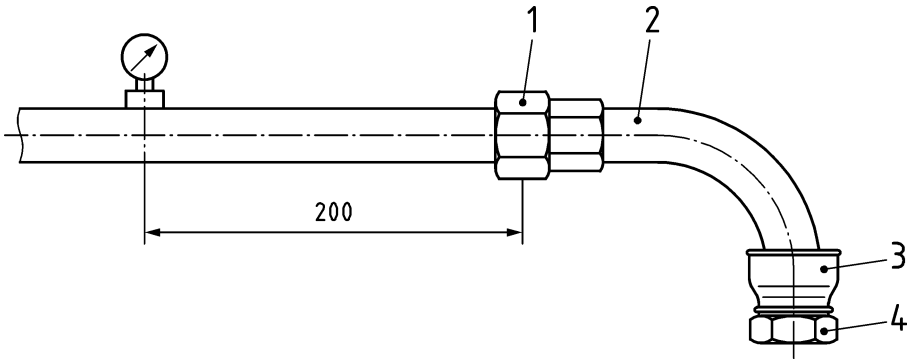
**Table 5— Aerators with flow regulation**

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
|---|---|---|---|---|---|
| **Dimensions** | | 7 | | | |
| **Hydraulic Performance** | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 |
| **Endurance** | 11.2 | | 11.2 | | 11.2 |
| **Hydraulic Performance** | 11.1 | | 11.1 | | 11.1 |
| **Pressure resistance** | 12 | | | | |

# 9 Assembly

The aerators to be tested shall be connected to a test circuit as shown in Figure 3.

NOTE: Dimensions for the mounting of aerators on nozzle outlets of sanitary tapware can be found in Annex A.




**Key**

1 Galvanized union, taper seat 1, U11, in accordance with ISO 49

2 Galvanized male long swept bend 1, G8, in accordance with ISO 49

3 Galvanized socket, 1 × 3/4, M2, in accordance with ISO 49

4 Adapter in accordance with ISO 3822-4 (see Figure 4 and 5)



**Figure 3 — Test circuit**



Adapters shall be of the following types: -see Figure 4 and Figure 5

a) Adapter with external thread ($A_3$) for controlling M22X1 aerators.

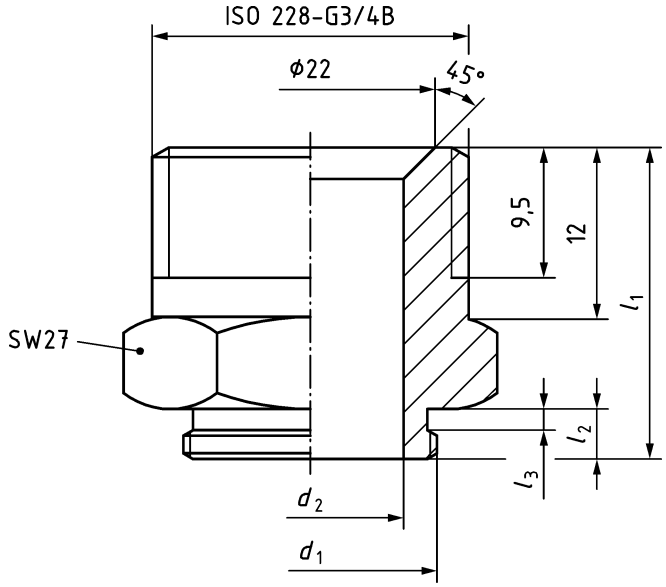



**Figure 4 — Adapter $A_3$**