



SLOVENSKI STANDARD

oSIST prEN 1420:2025

01-februar-2025

Vpliv organskih snovi na pitno vodo - Ugotavljanje vonja, okusa, barve in motnosti vode v vodovodnih in skladniščnih sistemih

Influence of organic materials on water intended for human consumption - Determination of odour, flavour, colour and turbidity of water in piping and storage systems

Einfluss von organischen Werkstoffen auf Wasser für den menschlichen Gebrauch - Bestimmung des Geruchs und Geschmacks des Wassers in Rohrleitungssystemen

Influence des matériaux organiques sur l'eau destinée à la consommation humaine - Détermination de l'odeur, de la flaveur, de la couleur et de la turbidité de l'eau dans les réseaux de conduites et les systèmes de stockage

Ta slovenski standard je istoveten z: prEN 1420

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ICS:

13.060.20	Pitna voda	Drinking water
91.140.60	Sistemi za oskrbo z vodo	Water supply systems

oSIST prEN 1420:2025

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 1420

December 2024

ICS 13.060.20

Will supersede EN 1420:2016

English Version

Influence of organic materials on water intended for human consumption - Determination of odour, flavour, colour and turbidity of water in piping and storage systems

Influence des matériaux organiques sur l'eau destinée à la consommation humaine - Détermination de l'odeur, de la saveur, de la couleur et de la turbidité de l'eau dans les réseaux de conduites et les systèmes de stockage

Einfluss von organischen Werkstoffen auf Wasser für den menschlichen Gebrauch - Bestimmung des Geruchs und Geschmacks des Wassers in Rohrleitungssystemen

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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prEN 1420:2024 (E)

European foreword

This document (prEN 1420:2024) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This document will supersede EN 1420-1:2016.

This document includes the following standards:

- *EN 13052-1:2001*, Influence of materials on water intended for human consumption – Organic materials – Determination of colour and turbidity of water in piping systems – Part 1: Test method
- *EN 14395-1:2004*, Influence of organic materials on water intended for human consumption — Organoleptic assessment of water in storage systems — Part 1: Test method

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

prEN 1420:2024 includes the following significant technical changes with respect to EN 1420-1:2016:

- the test methods for turbidity and colour have been included,
- the scope of the standard has been extended: all organic products (included storage systems) can be tested according to this standard.

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Introduction

In respect of potential adverse effects on the quality of the water intended for human consumption, arising from contact with materials used for conveying and distribution, it is recalled to mind that, national regulations remain in force.

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1 Scope

This document specifies a procedure for obtaining a migration water to determine odour, flavour, colour and turbidity for products made from organic materials intended to come in contact with water for human consumption (drinking water) and used in piping and storage systems. Such products include pipes, tanks, reservoirs, fittings, ancillaries and their coatings both for site applied and factory-made products.

This document is applicable to products to be used under various conditions for the transport, storage and distribution of water intended for human consumption and raw water used for the manufacture of water intended for human consumption.

This document specifies a test method comprising a set of procedures. The use might be dependent on the relevant national regulations and/or the system or product standards.

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 1622, *Water quality — Determination of the threshold odour number (TON) and threshold flavour number (TFN)*

EN 12873-1, *Influence of materials on water intended for human consumption — Influence due to migration — Part 1: Test method for factory-made products made from or incorporating organic or glassy (porcelain/vitreous enamel) materials*

EN 12873-2, *Influence of materials on water intended for human consumption — Influence due to migration — Part 2: Test method for non-metallic and noncementitious site-applied materials*

EN ISO 7393-2, *Water quality — Determination of free chlorine and total chlorine — Part 2: Colorimetric method using N,N-dialkyl-1,4-phenylenediamine, for routine control purposes (ISO 7393-2)*

EN ISO 7027-1, *Water quality — Determination of turbidity — Part 1: Quantitative methods (ISO 7027-1)*

EN ISO 7887, *Water quality — Examination and determination of colour (ISO 7887)*

3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

blank water

test water which has been kept at the same specified conditions as migration water but without contact with the test piece

3.2**colour**

optical property that causes the changing of the spectral composition of transmitted visible light measured at three wavelengths

[SOURCE: EN ISO 7887, 3]

3.3**fitting, ancillary**

complete functional unit made up of one or more components and materials, parts of which are in contact with drinking water, e.g. taps, valves

3.4**flavour**

complex combination of the olfactory, gustatory and trigeminal sensations perceived during tasting which may be influenced by tactile, thermal, painful and/or kinaesthetic effects

[SOURCE: EN ISO 5492]

3.5**membranes**

elastomer as used in pressure relief devices

3.6**migration water**

test water which has been in contact with a test piece under specified conditions

3.7**odour**

organoleptic attribute perceptible by the olfactory organ on sniffing certain volatile substances

[SOURCE: EN ISO 5492]

3.8**panel coordinator**

person responsible for the qualification of the members of the odour/flavour panel (panellists) and the check of the reliability of the determined TON-/TFN-results

3.9**prewashing water**

tapwater without any odour and flavour and a chlorine content less than 0,05 mg/l as Cl₂

3.10**product**

manufactured item, in its finished form

3.11**sample**

one or more units, or a specified quantity, drawn from a batch or lot, selected at random for inspection

3.12**site-applied product**

product where the final surface in contact with drinking water is prepared on site

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3.13

storage vessels

tanks, reservoirs, cisterns and their coatings

3.14

test piece

sample or portion of sample that is conditioned, treated or otherwise prepared to be tested to obtain a single test result

3.15

test water

water used for testing purposes prepared as described in 5.1.1 and 5.1.2

3.16

testing panel

group of people meeting the relevant requirements of EN 1622

3.17

threshold flavour number – TFN

dilution ratio beyond which the diluted sample does not have any perceptible flavour

[SOURCE: EN 1622:2006, 3.4]

3.18

threshold odour number – TON

dilution ratio beyond which the diluted sample does not have any perceptible odour

[SOURCE: EN 1622:2006, 3.3]

3.19

turbidity

reduction of transparency of a liquid caused by the presence of undissolved matter

[SOURCE: EN ISO 7027-1, 3]

4 Principle

Following a defined pretreatment procedure of flushing, stagnation with test water and then prewashing, the surface of the test pieces, exposed in practice to drinking water, is brought into contact with test waters.

The migration procedure is carried out under specified conditions as follows: test pieces are put in contact with chlorinated and where required unchlorinated test waters for 72 h at (23 ± 2) °C (cold water test), or put in contact with unchlorinated test water for 24 h at temperature of (60 ± 2) °C (warm water test) or (85 ± 2) °C (hot water test). If warm or hot water test is required, additionally a cold water test shall be performed.

NOTE The choice of the type of test water (chlorinated and/or chlorine-free), the temperature of the test water, the number of additional migration periods will be specified in product standards or national regulations.

After this contact, the migration water is assessed for colour and turbidity (see Clause 12) and by a test panel to determine the TON and TFN (see Clause 11).