



SLOVENSKI STANDARD

SIST EN 15664-2:2012

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Vpliv kovinskih materialov na pripravo pitne vode - Dinamično preskuševališče za ocenjevanje izločanja kovin - 2. del: Preskušanje vod

Influence of metallic materials on water intended for human consumption - Dynamic rig test for assessment of metal release - Part 2: Test waters

Einfluss metallischer Werkstoffe auf Wasser für den menschlichen Gebrauch - Dynamischer Prüfstandversuch für die Beurteilung der Abgabe von Metallen - Teil 2: Versuchswässer

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Influence des matériaux métalliques sur l'eau destinée à la consommation humaine - Banc d'essai dynamique pour l'évaluation du relargage de métaux - Partie 2: Eaux d'essai

Ta slovenski standard je istoveten z: EN 15664-2:2010

ICS:

13.060.20	Pitna voda	Drinking water
67.250	Materiali in predmeti v stiku z živili	Materials and articles in contact with foodstuffs

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EUROPEAN STANDARD
NORME EUROPÉENNE
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ICS 67.250

English Version

**Influence of metallic materials on water intended for human
consumption - Dynamic rig test for assessment of metal release
- Part 2: Test waters**

Influence des matériaux métalliques sur l'eau destinée à la
consommation humaine - Banc d'essai dynamique pour
l'évaluation du relargage de métaux - Partie 2: Eaux d'essai

Einfluss metallischer Werkstoffe auf Wasser für den
menschlichen Gebrauch - Dynamischer Prüfstandversuch
für die Beurteilung der Abgabe von Metallen - Teil 2:
Prüfwässer

This European Standard was approved by CEN on 9 January 2010.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists 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 Management Centre has the same status as the official versions.

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Contents	Page
Foreword.....	3
Introduction	4
1 Scope.....	5
2 Normative references	5
3 Terms and definitions	5
4 Test rig	5
5 Test water.....	5
5.1 Principles for the selection of test waters.....	5
5.2 Test water for reference materials	6
5.3 Test water for comparative testing	6
5.4 Test water for interaction of a local water with a material.....	6
Bibliography	7

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Foreword

This document (EN 15664-2:2010) has been prepared by Technical Committee CEN/TC 164 "Water supply", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2010, and conflicting national standards shall be withdrawn at the latest by August 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document is one of a series of test methods which support associated product standards.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

In respect of potential adverse effects on the quality of water intended for human consumption caused by metallic materials, attention is drawn to the fact that the relevant national regulations remain in force until the adoption of verifiable European acceptance criteria. Water intended for human consumption is hereafter referred to as "drinking water" and means the same as the definition given at Article 2(1) of the Council Directive 98/83/EC on the quality of water intended for human consumption [1].

This document has been drafted in accordance with the CEN Internal Regulations, Part 3.

This document is Part 2 of a series dealing with the test method to determine the release of metals from metallic products into drinking water comprising:

- *Part 1: Design and operation*
- *Part 2: Test waters* (this document)
- *Part 3: Guidance on interpretation of results¹⁾*

This part describes the selection of test waters for the test method to produce contact waters for the assessment of metal release from metallic materials.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1) Not yet registered as an active project.

Introduction

The test method given in Part 1 of EN 15664 is designed to provide information on metal release over time from metallic materials into drinking water.

The test is based on a programme of alternating periods of once-through flow and stagnation in a rig simulating the conditions in a domestic distribution system.

The test can be used for three purposes as follows:

- a) to assess a material as a reference material for a category of materials using the results of several investigations in different waters covering a broad range of water compositions;
- b) to assess a material for approval by way of comparative testing;
- c) to obtain data on the interaction of local water with a material.

This part of EN 15664 specifies test water(s) when the test procedure is used for the purposes a) to c) above.

To assess a new category of materials it is required to test the candidate reference material in several waters. This set of waters represents a parameter set of conditions which might be realistically observed in the field as extreme conditions. The test waters defined in this part of EN 15664 are based on an overview on drinking water qualities in Europe and consider the present knowledge on the dependence of metal release on water qualities.

To add a new material to a category, a comparative test against the reference material is required with specific test water. These test waters are defined in this document.

1 Scope

This European Standard defines the requirements for test waters used in the dynamic test rig defined in EN 15664-1.

This document specifies test water(s) when the test procedure is used to:

- a) assess a material for approval as a reference material for a category of materials;
- b) assess a material for approval by way of comparative testing;
- c) obtain data on the interaction of local water with a material.

NOTE Local waters used for test waters are not treated with corrosion inhibitors.

2 Normative references

The following referenced documents are indispensable for the application 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 12502-1:2004, *Protection of metallic materials against corrosion — Guidance on the assessment of corrosion likelihood in water distribution and storage systems — Part 1: General*

EN 15664-1:2008, *Influence of metallic materials on water intended for human consumption — Dynamic rig test for assessment of metal release — Part 1: Design and operation*

EN ISO 8044:1999, *Corrosion of metals and alloys — Basic terms and definitions (ISO 8044:1999)*
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3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 8044:1999, EN 12502-1:2004 and EN 15664-1:2008 apply.

4 Test rig

The test rig shall be constructed and operated according to EN 15664-1.

5 Test water

5.1 Principles for the selection of test waters

For the selection of test waters all the following principles apply:

- parameters of the test waters are within the requirements of the Council Directive 98/83/EC [1];
- test waters shall be local waters and shall not be treated with corrosion inhibitors (except for 5.4);
- test waters shall represent realistic worst case waters for the purpose of the test.

The test water shall be selected depending on the purpose of the test, see 5.2, 5.3 and 5.4.

EN 15664-2:2010 (E)

5.2 Test water for reference materials

Three test waters shall be used to collect data for the assessment of a new category of metallic material. These are: very hard neutral, soft acidic and soft alkaline. For these waters, annual mean values are given in Table 1.

Table 1 – Test water characteristics for testing reference materials

	Characteristics	pH	Alkalinity mmol/l	Sum of [Cl] and [SO ₄ ²⁻] mmol/l	Oxygen	TOC mg/l
Test water 1	Very hard neutral water	7,1 to 7,5	> 5,0	> 3	> 70 % saturation	> 1,5
Test water 2	Soft water weakly acidic	6,7 to 7,1	0,5 to 1,3	-	> 70 % saturation	—
Test water 3	Soft water alkaline	8,0 to 8,4	0,7 to 1,3	-	> 70 % saturation	—

TOC shall not be increased by adding organic substances to the test water.

5.3 Test water for comparative testing

For comparative testing a local drinking water shall be used, provided that the water is suitably corrosive. This means that metal release rate(s) of the element(s) under consideration shall be high enough to result in metal concentrations for a valid comparison to be made.

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NOTE It is recommended that the metal release behaviour of the reference material in the proposed test water is available.

5.4 Test water for interaction of a local water with a material

When the test procedure is used to obtain data on the interaction of local water with a material, the test water shall be the local water representative of the particular supply zone under consideration.

In this case, the water may contain corrosion inhibitors.