

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

The European Standard EN 13052-1:2001 has the status of a British Standard

ICS 13.060.20; 13.060.60; 23.040.01

National foreword

This British Standard is the official English language version of EN 13052-1:2001.

The UK participation in its preparation was entrusted to Technical Committee EH/6, Effects of materials on water quality, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Health and Environment Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 16 November 2001

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 21 and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

© BSI 16 November 2001

ISBN 0 580 38396 2

English version

**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**

Influence des matériaux sur l'eau destinée à la
consommation humaine — Matériaux organiques —
Evaluation de la couleur et de la turbidité de l'eau dans les
réseaux de conduites — Partie 1: Méthode d'essai

Einfluss von Werkstoffen auf Wasser für den menschlichen
Gebrauch — Organische Werkstoffe — Bestimmung von
Färbung und Trübung von Wasser in
Rohrleitungssystemen — Teil 1: Prüfverfahren

This European Standard was approved by CEN on 17 August 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Principle	8
5 Reagents	8
5.1 Disinfection reagents	8
5.2 Waters to be used for testing	8
5.3 Cleaning liquids for apparatus	9
6 Apparatus	9
6.1 Apparatus for migration assessment	9
6.2 Apparatus for colour and turbidity assessment	9
7 Samples of product and test pieces	9
7.1 General	9
7.2 Surface-area-to-volume ratio (S/V)	10
7.2.1 General	10
7.2.2 Pipes	10
7.2.3 Fittings, ancillaries and joints	11
8 Preparation of reagents and apparatus	11
8.1 reference water	11
8.2 Test water with chlorine content	11
8.3 Disinfection treatment water	11
8.4 Cleaning of the apparatus	11
9 23 °C test procedure	12
9.1 General	12
9.2 Flushing	12
9.3 Stagnation	13
9.3.1 Stagnation with disinfection water	13
9.4 Prewashing	13
9.4.1 Flushing	13
9.4.2 Rinsing	13
9.5 Migration	13
10 Elevated temperature test procedure	14
10.1 General	14
10.2 Flushing	14
10.3 Stagnation	14
10.3.1 Stagnation with disinfection water	14
10.3.2 Stagnation without disinfection water	14
10.4 Flushing	15
10.5 Elevated temperature stagnation	15
10.6 Rinsing	15
10.7 Migration	15
11 Determination of colour and turbidity	15
12 Expression of results	16

13 Test report.....16

13.1 General information 16

13.2 The information on the product shall at least include: 16

13.3 Information on the procedure 17

13.4 Test results..... 17

Annex A (informative) Arrangement for flushing large diameters pipes 18

Annex B (informative) Schematic presentation of the test method 19

B.1 Products to be tested at (23 ± 2) °C 20

B.2 Products to be tested at elevated temperatures 21

Foreword

This European Standard 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 March 2002, and conflicting national standards shall be withdrawn at the latest by March 2002.

This European Standard has been prepared by CEN/TC 164, Water supply, in co-operation with CEN/TC 155, Plastics piping systems and ducting systems, and consists of two parts:

Part 1: Test method;

Part 2: Interpretation of laboratory values relative to field-use conditions.

This standard is Part 1. It contains the two following annexes.

Annex A, which is informative, describes an arrangement for flushing large diameter pipes.

Annex B, which is informative, summarizes schematically the relationship between the various stages of the document.

The material-dependent parameters and/or performance requirements are incorporated into the Product Standards, for example the System Standards for plastics piping systems.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption caused by the materials, it is recalled to mind that, while awaiting the adoption of verifiable European acceptance criteria, such as proposed in a future *European Acceptance Scheme*, national regulations remain in force.

1 Scope

This standard specifies a method for determining the colour and turbidity of test waters after their contact with the organic materials used in piping systems. The term “products” comprises pipes, fittings, ancillaries including their coatings and joints.

The test method described in this standard is applicable to products to be used under various conditions for the transport of water intended for human consumption and raw water used for the manufacture of water intended for human consumption. Coatings or protective layers on products which are not intended to be in contact with these types of water are not covered by this method.

This standard specifies the test method comprising a set of procedures with and without a disinfection pretreatment and possible temperatures for the test waters. The use of the disinfection pretreatment and the choice of the test temperature are dependant on the relevant national regulations and/or the system or product standards.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 7027:1999, *Water quality — Determination of turbidity (ISO 7027:1999)*.

EN ISO 7393-2:2000, *Water quality — Determination of free chlorine and totalchlorine — Part 2: Colorimetric method using N, N-diethyl-1, 4-phenylenediamine for routine control purposes (ISO 7393-2:1985)*.

EN ISO 7887:1994, *Water quality — Examination and determination of colour (ISO 7887:1994)*.

3 Terms and definitions

For the purpose of this standard the following terms and definitions apply:

3.1

colour

optical property that causes the changing of the spectral composition of transmitted visible light measured at three wavelengths (see clause 3 of EN ISO 7887:1994)

3.2

turbidity

reduction of transparency of a liquid caused by the presence of undissolved matter (see clause 3 of EN ISO 7027:1999 as a source of this definition)

3.3

reference water

water complying with the following requirements without and with addition of 1 mg/l chlorine

- for colour: spectral absorption coefficient less than $0,1 \text{ m}^{-1}$;
- for turbidity: FNU < 0,1