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**Plastics piping systems for the transport of  
water intended for human consumption —  
Migration assessment — Determination of  
migration values of plastics pipes and  
fittings and their joints**

*Systèmes de canalisations plastiques pour le transport d'eau destinée à la  
consommation humaine — Évaluation de la migration — Détermination des  
valeurs de migration des tubes et raccords plastiques et de leurs  
assemblages*



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Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.ch](mailto:copyright@iso.ch)  
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Printed in Switzerland

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 8795 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 5, *General properties of pipes, fittings and valves of plastic materials and their accessories — Test methods and basic specifications*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this standard, read "...this European Standard..." to mean "...this International Standard...".

This third edition cancels and replaces the second edition (ISO 8795:1998), which has been technically revised.

Annexes A and B form a normative part of this International Standard.

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## Foreword

The text of EN ISO 8795:2001 has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids".

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 September 2001, and conflicting national standards shall be withdrawn at the latest by September 2001.

This Standard replaces EN 852-1:1996. This revision contains the addition of requirements for fittings and joints.

NOTE 1 ISO 8795:1998 is a revision of ISO 8795:1990 and is identical with EN 852-1:1996.

It is based on ISO 8795:1990 "*Plastics pipes for the transport of water intended for human consumption - Extractability of constituents - Test method*", published by the International Organisation for Standardisation (ISO). It differs from ISO 8795:1990 due to the need for the test method to be applicable to European conditions and practice.

The main modifications are:

- a) testing of fittings and joints has been added;
- b) test liquids:
  - the addition of neutral water (pH = 7,0) to cover non-European conditions;
  - pH 9 has been added, to cover European conditions (see Directive 98/83/EC Part C);
  - pH 11 is mentioned;
  - addition of test liquid with an active chlorine content of 1 mg/l;
- c) a stagnation period has been added;
- d) exposure time: 72 h is specified for cold water applications and 24 h is specified for warm and hot water applications;
- e) temperatures:
  - 70 °C is specified for moderate hot water conditions;
- f) large diameter pipes, fittings and joints: a procedure for testing has been added.

Annex A, which is normative, describes the preparation of test liquids.

Annex B, which is normative, describes the preparation of test pieces for testing pipes, fittings and joints with nominal sizes greater than 80.

Further is included a bibliography.

This standard is one of a series of standards on test methods which support System Standards for plastics piping systems and ducting 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.

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## 1 Scope

This standard specifies a method for the determination of the migration of constituents from the internal surface of plastics pipes, fittings and joints. Organoleptic and microbiological assessments are not included.

This standard is applicable to all plastics pipes, fittings and joints to be used for the transport of water intended for human consumption and raw water used for the manufacturing of water intended for human consumption. It covers all constituents which are extractable by water from a finished pipe, fitting or joint. It provides for a change in procedure as necessary depending upon the size of the pipe, fitting or joint.

NOTE 1 It is assumed that the referring standards or regulations making reference to this standard include the following information (see also the note to clause 4):

- a) choice of test liquid(s) (see 5.3);
- b) choice of test temperature(s) (see clause 6).

NOTE 2 The pre-treatment procedures, test liquids and test temperatures mentioned in this standard cover the present situation. When new and/or different conditions are formulated (currently under discussion) the standard will be amended accordingly.

## 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 3696:1995, *Water for analytical laboratory use — Specification and test methods* (ISO 3696:1987)

ISO 7393-2:1985, *Water quality - Determination of free chlorine and total chlorine - Part 2: Colorimetric method using N,N-diethyl-1,4-phenylenediamine, for routine control purposes*

## 3 Terms and definitions

For the purposes of this standard the following terms and definitions apply.

### 3.1

#### **migration**

movement of substances from one material (e.g. plastics pipe) into another (test liquid)

### 3.2

#### **test liquid**

specified water for migration testing

### 3.3

#### **migration value (*M*)**

mass of constituent(s) migrated from a specified surface area of a test piece exposed to a test liquid at a specified temperature over a specified time

### 3.4

#### **tapwater**

water intended for human consumption

### 3.5

#### **fitting**

component, other than a pipe which is used in a pipeline (e.g. bends, tees, end caps, valves)