

Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water —

Part 2: Methods of test —

Section 2.1: Samples for testing

ICS 13.060.20

Confirmed December 2009

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee EH/6, Effects of materials on water quality, upon which the following bodies were represented:

- Automatic Vending Association of Britain
- British Cement Association
- BCF — British Coatings Federation Ltd
- British Malleable Tube Fittings Association
- British Plastics Federation
- British Plumbing Fittings Manufacturers' Association
- British Precast Concrete Federation Ltd
- British Rubber Manufacturers' Association Ltd
- British Water
- DEFRA — Water and Land Directorate
- Galvanizers Association
- Laboratory of the Government Chemist
- Pipeline Industries Guild
- UK Steel Association
- Water Regulations Advisory Scheme
- Water Research Centre plc

This British Standard, having been prepared under the direction of the Health and Environment Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 May 2000

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Amendments/corrigenda issued since publication

Amd. No.	Date	Comments
12084	29 October 2001	
14718	21 January 2004	
A3	30 May 2008	Corrections to Clause 7.2, indicated by sidelines

The following BSI references relate to the work on this British Standard:
Committee reference EH/6
Draft for comment 99/560124 DC

ISBN 978 0 580 62065 2

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Foreword

This section of BS 6920 has been prepared by Technical Committee EH/6. BS 6920-2.1:2000+A3:2008 supersedes BS 6920-2.1:2000+A2:2004, which is withdrawn.

Text introduced or altered by Amendment No. 3 is indicated by sidelining. Previous amendments are not indicated.

This edition introduces technical changes but it does not reflect a full review or revision of the standard.

BS 6920 is published in several parts, namely *Part 1: Specification*, *Part 2: Methods of test*, *Part 3: High temperature tests* and *Part 4: Method for the GCMS identification of water leachable organic substances*.

Part 2 is further subdivided into a number of sections and subsections as follows:

Section 2.1: Samples for testing;

Section 2.2: Odour and flavour of water;

Subsection 2.2.1: General method of test;

Subsection 2.2.2: Method of testing odours and flavours imparted to water by hoses and composite pipes and tubes;

Subsection 2.2.3: Method of testing odours and flavours imparted to water by hoses for conveying water for food and drink preparation;

Section 2.3: Appearance of water;

Section 2.4: Growth of aquatic microorganisms test;

Section 2.5: The extraction of substances that may be of concern to public health;

Section 2.6: The extraction of metals.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 13 and a back cover.

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1 Scope

This section of BS 6920 describes the preparation of samples of all types of non-metallic products for testing their suitability for use in contact with water intended for human consumption.

NOTE Under the requirements of the Water Supply (Water Quality) Regulations (Regulation 25) and the Water Supply (Water Fittings) Regulations (Clause 2 of Schedule 2), the National Regulator may specify additional provisions in some cases and assess the significance of the results obtained.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of BS 6920. For dated references, subsequent amendments to or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

BS 12, *Specification for Portland cement*.

BS 864-2, *Capillary and compression tube fittings of copper and copper alloy — Part 2: Specification for capillary and compression fittings for copper tubes*.

BS 887:1982, *Specification for precision vernier callipers*.

BS 2871-1, *Specification for copper and copper alloys — Tubes — Part 1: Copper tubes for water, gas and sanitation*.

BS 2874, *Specification for copper and copper alloy rods and sections (other than forging stock)*.

BS 3574, *Specification for the controlled storage and packaging of vulcanized rubber and rubber products*.

BS 3900-C5, *Methods of test for paints — Determination of film thickness*.

BS 4372:1968, *Specification for engineers' steel measuring rules*.

BS 6068-2.50, *Water quality — Physical, chemical and biochemical methods — Determination of pH*.

BS 6920-1:2000, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 1: Specification*.

BS 6920-2.2.1, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 2: Methods of test — Section 2.2: Odour and flavour of water — Subsection 2.2.1: General method of test*.

BS 6920-2.2.2, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 2: Methods of test — Section 2.2: Odour and flavour of water — Subsection 2.2.2: Method of testing odours and flavours imparted to water by hoses and composite pipes and tubes*.

BS 6920-2.2.3, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 2: Methods of test — Section 2.2: Odour and flavour of water — Subsection 2.2.3: Method of testing odours and flavours imparted to water by hoses for conveying water for food and drink preparation*.

BS 6920-2.3, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 2: Methods of test — Section 2.3: Appearance of water*.

BS 6920-2.4, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 2: Methods of test — Section 2.4: Growth of aquatic microorganisms test*.

BS 6920-2.5, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 2: Methods of test — Section 2.5: The extraction of substances that may be of concern to public health*.

BS 6920-2.6, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 2: Methods of test — Section 2.6: The extraction of metals*.

BS 6920-3, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water — Part 3: High temperature tests.*

BS 7766, *Specification for assessment of the potential for metallic materials to affect adversely the quality of water intended for human consumption.*

BS 8007, *Code of practice for design of concrete structures for retaining aqueous liquids.*

BS EN 30012-1, *Quality assurance requirements for measuring equipment — Part 1: Metrological confirmation system for measuring equipment.*

BS EN ISO 3696, *Water for analytical laboratory use — Specification and test methods.*

3 Terms and definitions

For the purposes of this section of BS 6920, the following definitions apply.

3.1

product

all or a component part of a manufactured item, in its finished form, that comes into contact with water

3.2

composite product

product whose water-contact surface is made from a material that differs from those comprising the remainder of the product

3.3

test sample

product, or part of a product, submitted to the test procedure

NOTE In some cases the sample may consist of more than one example of the product.

3.4

anaerobic adhesive

adhesive that cures spontaneously in the absence of oxygen, curing being inhibited by the presence of oxygen and catalysed by metal ions

4 Apparatus

4.1 *Polyethylene bags, of a type suitable for food contact.*

Prior to use, the bags shall be stored in a closed container. The bags shall not be used for thermosetting rubber compounds (6.3).

4.2 *Test plates*

4.2.1 Glass plates, constructed of sand-blasted glass, that have a total surface area of $(15\,000 \pm 500)$ mm². The width of the plates shall not exceed 60 mm.

Soak the plates for 24 hours in 10 % nitric acid and thoroughly rinse in tap water. Clean them in an aqueous solution of a biodegradable laboratory detergent. Rinse thoroughly in tap water and then once in distilled water conforming to grade 3 of BS EN ISO 3696. Drain and dry in a hot air cabinet and store in polyethylene bags (4.1).

4.2.2 Stainless steel plates, of the same surface area and dimensions as the glass plates of 4.2.1.

The plates shall be cleaned before use in accordance with 4.2.1 omitting the soaking in 10 % nitric acid.

4.2.3 Special glass plates, as specified in 4.2 except that only one side shall be sand-blasted.

4.3 Brass couplings, female/female, 15 mm diameter compression brass couplings conforming to BS 864-2 that have a composition meeting the designations CZ 122 or CZ 132 of BS 2874 or BS 7766, respectively.

Take the coupling apart and discard the compression “olives”; retain the body of the coupling and the two screw collars. Immerse the couplings in a cleaning agent (see 4.2) for 5 min. Rinse the couplings with distilled water conforming to grade 3 of BS EN ISO 3696, and then immerse in a 1 % by volume solution of nitric acid for 1 min. Rinse in tap water and then in distilled water again. Drain and dry in a hot air cabinet and store in polyethylene bags (4.1).