

SINGAPORE STANDARD

**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



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– Part 1 : Specification

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This Singapore Standard was approved by the Chemical Standards Committee on behalf of the Singapore Standards Council on 11 June 2015.

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The Working Group on Drinking Water appointed by the Technical Committee on Water to assist in the review of this standard, comprises the following experts who contributed in their *individual capacity*:

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The organisations in which the experts of the Working Group are involved are:

Longus Consulting

PUB, the National Water Agency

Setsco Services Pte Ltd

Singapore Sanitary Ware Importer and Exporter Association

Singapore Water Association

Standard Chemical Corporation Pte Ltd

TUV SUD PSB Pte Ltd

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National Foreword

This Singapore Standard was prepared by the Working Group on Drinking Water appointed by the Technical Committee on Water under the direction of the Chemical Standards Committee.

This part is a revision of SS 375 : Part 1 : 2001. It is a modified adoption of the BS 6920-1 : 2014 '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', and is implemented with the permission of BSI Standards Limited.

The deviations are as follows:

<u>Clauses/Subclauses</u>	<u>Modification</u>
Foreword; Clause 1 – NOTE; Clause 7 – NOTES 2 & 3; Clause 8 – Commentary & Table 1 NOTE 2; Bibliography – Other publications	<i>Deleted the reference to UK regulations</i> <i>Explanation: These regulations are not applicable to Singapore.</i>
Clause 1 – NOTE	<i>Added the phrase “such as for organic and/or inorganic compounds” after “In some cases national authorities or regulators might require specific additional testing”</i> <i>Explanation: This would provide some clarity for the issue on organics and long term effects.</i>
Clause 4 – COMMENTARY	<i>Replaced the reference to the EC Directive with “The WHO Guidelines for Drinking-Water Quality, Fourth Edition states that “water should be free of tastes and odours that would be objectionable to the majority of consumers.”</i> <i>Explanation: The EC Directive is not applicable to Singapore.</i>
Clause 8 – Table 1	<i>Included the elements, barium (maximum allowable concentration of 700 µg/L, reporting limits of 100 µg/L, expression of results as Ba µg/L) and silver (maximum allowable concentration of 100 µg/L, reporting limits of 10 µg/L, expression of results as Ag µg/L) to the list;</i> <i>Replaced the maximum allowable concentrations for boron with 2400 µg/L and its reporting limits with 200 µg/L and the maximum allowable concentrations for cadmium with 3 µg/L</i> <i>Explanation: This reflects the local criteria.</i>

Wherever appropriate, the words 'British Standard' have been replaced by 'Singapore Standard'. The references to BS 6920 series have been replaced by the following Singapore Standards:

BS 6920 Series	Corresponding Singapore Standard
BS 6920	SS 375
BS 6920-2.2.1	SS 375 : Part 2:2:1
BS 6920-2.2.2	SS 375 : Part 2:2:2
BS 6920-2.2.3	SS 375 : Part 2:2:3

BS 6920-2.3	SS 375 : Part 2:3
BS 6920-2.4	SS 375: Part 2:4
BS 6920-2.5	SS 375: Part 2:5
BS 6920-2.6	SS 375: Part 2:6
BS 6920-3	SS 375: Part 3

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

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR.*
3. *Compliance with a SS or TR does not exempt users from any legal obligations.*

Foreword

Publishing information

This part of BS 6920 is published by BSI Standards Limited, under license from The British Standards Institution, and came into effect on 30 June 2014. It was prepared by Technical Committee EH/6, *Effects of materials on water quality*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This part of BS 6920 supersedes BS 6920-1:2000, which is withdrawn.

Relationship with other publications

The following parts and sections of BS 6920 have been published.

- Part 1: *Specification*;
- Part 2: *Methods of test*;
- 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 multi-layered 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*.
- Part 3: *High temperature tests*;
- Part 4: *Method for the GCMS identification of water leachable organic substances*.

A diagram showing the relationship of the various parts and sections of this standard is given in Annex A.

Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- A statement has been added to the scope that this part of BS 6920 is not applicable to metallic materials and products;
- The definition of the term “product” has been revised (see 3.3);
- The pass/fail requirements of the odour and flavour of water test have been clarified (see Clause 4), and supporting flow diagrams in a new Annex B;

- Interpretation of the results of the growth of aquatic microorganisms test have been clarified (see Clause 6);
- The fact that some cold water testing is required before high temperature tests are carried out has been clarified (see Clause 9).

Hazard warnings

WARNING. This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken.

This British Standard refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Use of this document

It has been assumed in the preparation of this part of BS 6920 that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standard*, subclause J.1.1, which states, “Requirements should be expressed using wording such as: ‘When tested as described in Annex A, the product shall...’”. This means only those products that are capable of passing the specified test will be deemed to conform to this standard.

Contractual and legal considerations

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.

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

1 Scope

This part of SS 375 specifies requirements for the suitability of non-metallic (including cementitious) materials and products, and also water fittings and components, pipes and materials used in coating, protection, lining, jointing, sealing and lubrication, for use in contact with either hot or cold water intended for human consumption, with regard to their effect on the quality of the water.

This standard is not applicable to metallic materials and products.

NOTE In some cases national authorities or regulators might require specific additional testing, such as for organic and/or inorganic compounds, to be carried out on extracts from certain types of these materials; interpretation of the results from additional testing is the responsibility of the requesting body.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

- a) SS 375 : Part 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 2:2:1: Methods of test – Odour and flavour of water – General method of test*;
- b) SS 375 : Part 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 2:2:2: Methods of test - Odour and flavour of water – Method of testing odours and flavours imparted to water by multi-layered hoses and pipes*;
- c) SS 375 : Part 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 2:2:3: Methods of test - Odour and flavour of water – Method of testing odours and flavours imparted to water by hoses for conveying water for food and drink preparation*;
- d) SS 375 : Part 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 2:3: Methods of test - Appearance of water*;
- e) SS 375 : Part 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 2:4: Methods of test – Growth of aquatic microorganisms test*;
- f) SS 375 : Part 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 2:5: Methods of test – The extraction of substances that may be of concern to public health*;
- g) SS 375 : Part 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 2:6: Methods of test - The extraction of metals*;

- h) SS 375 : Part 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.*