Singapore Standards Council

SS 375 : Part 2:2:3 : 2015
(ICS 13.060.20)

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 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

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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 Chemical Standards Committee, appointed by the Standards Council, consists of the following members:

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The Technical Committee on Water, appointed by the Chemical Standards Committee and responsible for the preparation of this standard, consists of representatives from the following organisations:

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		Prof Ong Say Leong	*NUS Environmental Research Institute*
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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

Contents

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 is a revision of SS 375 : Part 2:2:3 : 2001. It is an identical adoption of BS 6920-2.2.3: 2000 + A2: 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 2: Methods of test – Section 2.2: Odour and flavor 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', and is implemented with the permission of BSI Standards Limited.

Where appropriate, the words 'British Standard' have been replaced by 'Singapore Standard'. The references to the BS 6920 series have been replaced by the following Singapore Standards:

BS 6920 Series	Corresponding Singapore Standard
BS 6920	SS 375
BS 6920-1: 2014	SS 375 : Part 1: 2015
BS 6920-2.1: 2014	SS 375 : Part 2:1: 2015
BS 6920-2.2.1	SS 375 : Part 2:2:1
BS 6920-2.2.2	SS 375 : Part 2:2:2
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 subsection of BS 6920 is published by BSI Standards Limited, under license from The British Standards Institution and came into effect on 15 May 2000. It was prepared by Technical Committee EH/6, *Effects of materials on water quality*.

Supersession

BS 6920-2.2.3:2000 + A2:2014 supersedes BS 6920-2.2.3:2000 incorporating Amendment No. 1, which is withdrawn.

Relationship with other publications

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 flavor 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 pipes;*
- *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.

Information about this document

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

Hazard warnings

WARNING. This British Standard calls for the testing of extracts that might contain substances that could be injurious to the health of test panelists if adequate precautions are not taken. It is important that the guidance given in 8.1 is followed.

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.

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.

Introduction

Hoses are used for conveying water in equipment for food and drink preparation. Overnight, during shut-downs and at various other times, the water may be static in these hoses for varying periods of time. With a high surface area of the material of the hose exposed to a relatively small volume of water, the water may readily pick up substances from the hose capable of producing a discernible odour or flavour. Additionally, the hose may react with any residual chlorine in the water to produce a disinfectant-type odour and/or flavour.

Experience has shown that, even when the water-contact material does not produce any odour or flavour in water, when fabricated into a complete hose, substances from the outer material may interact with the water contact material in such a way as to produce such effects.

For these applications, it is therefore important not only to test the complete hose, including any reinforcements and outer layers, but to use a ratio of surface area of water-contact material to volume of water representative of the worst situation likely to be encountered in practice.

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

1 Scope

This subsection of SS 375 describes a method designed to assess the ability of flexible hoses (including reinforcements) to impart a discernible odour or flavour to water intended for use in the preparation of food and drinks.

It is applicable only to the testing of hoses intended for installation in equipment used for food and drink preparation.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of SS 375. 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.

SS 375 (all parts), *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.*

SS 375 : Part 2:2:1 : 2015, *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*;

BS EN ISO 4788, *Laboratory glassware – Graduated measuring cylinders.*