

# Hot water bottles manufactured from rubber and PVC — Specification

ICS 83.140.99; 97.180

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PRI/68, Hot water bottles, upon which the following bodies were represented:

- British Retail Consortium
- British Rubber Manufacturers Association Ltd.
- Consumer Policy Committee of BSI
- Department of Trade and Industry
- National Pharmaceutical Association
- RAPRA Technology Ltd.
- Tun Abdul Razak Research Centre

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The following BSI references relate to work on this British Standard:  
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## Foreword

This British Standard has been prepared under the direction of Technical Committee PRI/68, Hot water bottles. It combines requirements for both rubber and PVC hot water bottles and supersedes both the following standards which are withdrawn:

BS 1970:1984, *Specification for rubber hot water bottles*.

BS 6728-1:1986, *Thermoplastics hot water bottles — Specification for hot water bottles manufactured from PVC compounds*.

Attention is drawn to the Toys (Safety) Regulations 1995 (UK Statutory Instrument SI 1995 No. 204) which is applicable to hot water bottles that have any play value in the form of toys, or that include toys. Attention is also drawn to BS EN 71-1:2001, *Safety of toys — Specification for mechanical and physical properties*.

Annex A, Annex B, Annex C, Annex D, Annex E, Annex F, Annex G and Annex H are normative.

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

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 11 and a back cover.

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## 1 Scope

This British Standard specifies requirements for the physical properties and performance of both rubber and PVC hot water bottles, designed for complete or partial filling with hot water by the user.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.

BS 903-A2:1995, *Physical testing of rubber — Part A2: Method for determination of tensile stress-strain properties*.

BS 903-A5:1997, *Physical testing of rubber — Part A5: Determination of tension set at normal and high temperatures*.

BS 903-A6:1992, *Physical testing of rubber — Part A6: Method for determination of compression set at ambient, elevated or low temperatures*.

BS 903-A26:1995, *Physical testing of rubber — Part A26: Method for determination of hardness (hardness between 10 IRHD and 100 IRHD)*.

BS 903-A38:1991, *Physical testing of rubber — Part A38: Methods for the determination of dimensions of test pieces and products for test purposes*.  
[ISO 4648:1991]

BS 2071:1989, *Specification for Soxhlet extractors*.

BS 2782-3:Method 321:1994, *Plastics — Determination of tensile properties — Part 3: General principles*.  
[BS EN ISO 527-1:1996]

BS EN 71-3:1995, *Safety of toys — Part 3: Specification for migration of certain elements*.

BS ISO 188:1998, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*.

## 3 Composition

When tested in accordance with BS EN 71-3:1995, the hot water bottle shall not contain proportions (by mass) of migratory elements in excess of the limits in Table 1 of BS EN 71-3:1995.

## 4 Physical properties

### 4.1 General appearance

When inspected visually, the hot water bottle shall be free from porosity, inclusions of foreign matter, tears, blisters and any other defects that could adversely affect the safe performance of the hot water bottle.

### 4.2 Thickness

The hot water bottle shall at no point on its surface have a thickness less than that shown in Table 1, according to its capacity and the material of construction.

Thickness shall be determined in accordance with the method in Annex A, and the capacity determined in accordance with the method in Annex B.

**Table 1 — Minimum thickness of hot water bottles**

| Rubber hot water bottles |                         | PVC hot water bottles |                         |
|--------------------------|-------------------------|-----------------------|-------------------------|
| Capacity<br>ml           | Minimum thickness<br>mm | Capacity<br>ml        | Minimum thickness<br>mm |
| ≤ 2 000                  | 1.4                     | ≤ 800                 | 1.5                     |
| > 2 000                  | 1.5                     | > 800 ≤ 2 000         | 1.7                     |
|                          |                         | > 2 000               | 1.8                     |