

Specification for

Rubber and plastics suction hoses and hose assemblies for fire-fighting purposes

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Rubber Standards Committee (RUM/-) to Technical Committee RUM/9, upon which the following bodies were represented:

- British Gas Corporation
- British Rubber Manufacturers' Association
- Chief and Assistant Chief Fire Officers' Association
- Department of the Environment (Property Services Agency)
- Fire Extinguishing Trades Association
- Health and Safety Executive
- Home Office
- Institution of Fire Engineers
- London Fire Brigade
- London Transport Executive
- Malaysian Rubber Producers' Research Association
- Ministry of Defence
- National Coal Board
- Society of Motor Manufacturers and Traders Limited
- Water Authorities Association

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Association of Hydraulic Equipment Manufacturers
- British Railways Board
- Energy Industries Council
- Engineering Equipment and Materials Users' Association

This British Standard, having been prepared under the direction of the Rubber Standards Committee, was published under the authority of the Board of BSI and comes into effect on 31 December 1986

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The following BSI references relate to the work on this standard:
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Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Definitions	1
3 Classification	1
4 Rubber hoses and hose assemblies (classes A and B, types 1 and 2)	1
5 Polymer-reinforced thermoplastics hoses (class C, type 3)	3
6 Tolerances on length of hose assemblies (all classes and types)	4
7 Hose assemblies	5
8 Attachment of couplings	5
9 Marking	5
Appendix A Method of test for vacuum resistance with flexing	6
Appendix B Method of test for flexibility	6
Figure 1 — Longitudinal cross section of typical class B hose construction	1
Figure 2 — Apparatus for flexibility test	7
Table 1 — Dimensions and permissible deviations of hoses and soft ends	2
Table 2 — Minimum thickness of hose lining and cover	2
Table 3 — Maximum mass of rubber hoses	2
Table 4 — Minimum tensile strength and elongation at break of rubber lining and cover	2
Table 5 — Hydrostatic pressure requirements	2
Table 6 — Minimum deflection for flexibility test	3
Table 7 — Maximum mass of thermoplastics hoses	3
Table 8 — Hydrostatic pressure requirements at $23 \pm 2^\circ\text{C}$	3
Table 9 — Hydrostatic pressure requirements at $55 \pm 2^\circ\text{C}$	4
Table 10 — Extension piece for reinforcement fracture test	4
Publications referred to	Inside back cover

Foreword

This revision of this British Standard, which has been prepared under the direction of the Rubber Standards Committee, supersedes BS 3165-1:1959, which is withdrawn. It includes the requirements for hoses with a smooth rubber lining originally envisaged as being the subject of Part 2, which was never published.

Class A hoses also comply with the requirements of Home Office Specification No. JCDD/2.

The main changes from the 1959 edition are as follows:

- a) two classes of rubber hose and one class of thermoplastics hose are specified, divided into types by their ambient temperature range and design working pressure although the prime duty is as a suction hose;
- b) the inclusion of smooth bore as well as semi-embedded rubber hose and smooth bore thermoplastics hose;
- c) the deletion of some of the detailed construction requirements;
- d) changes to the values for the tensile properties of rubber components;
- e) the inclusion of additional performance requirements.

In the absence of a suitable method of test no requirement is specified for the abrasion resistance of the cover of these hoses. When a suitable test method is available it will be incorporated in the standard together with a requirement. It should be recognized, however, that adequate abrasion resistance is essential.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their 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 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for the construction, physical properties and performance of two classes of rubber hoses and hose assemblies and one class of thermoplastics hose for fire-fighting purposes. The two classes of rubber hoses are further divided into two types according to their design working pressure and the thermoplastics hose is also described further by a type number.

The intended use of products complying with this standard is for suction duty but they are also suitable for use as water delivery hoses up to their respective working pressures.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard, the definitions given in BS 3558 apply.

3 Classification

Hoses and hose assemblies shall be classified as follows:

Class A: smooth bore rubber hose

Class B: semi-embedded rubber hose

Class C: smooth bore polymer-reinforced thermoplastics hose

Classes A and B are further divided into:

Type 1: medium duty hose with a design working pressure up to and including 5 bar ^a . Type 2: heavy duty hose with a design working pressure up to and including 7.5 bar.	Ambient temperature range – 30 °C to + 65 °C
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^a 1 bar = 10^5 N/m² = 100 kPa.

Class C is further described as:

Type 3: medium duty hose with a design working pressure up to and including 5 bar at 23 °C; ambient temperature range – 10 °C to + 55 °C.

NOTE Hoses of thermoplastics construction are susceptible to softening and deformation at elevated temperatures with consequent reduction in burst pressure (see 5.2.2) and to stiffening at low temperatures. Prolonged running of pumps against closed discharge valves may generate heat and should be avoided.

4 Rubber hoses and hose assemblies (classes A and B, types 1 and 2)

4.1 Construction

4.1.1 Class A hoses shall consist of:

- a rubber lining;
- textile reinforcement;
- an embedded single or twin wire helix;
- a rubber cover.

4.1.2 Class B hoses shall consist of:

- an internal wire helix;
- a rubber lining;
- textile reinforcement;
- an embedded wire helix;
- a rubber cover.

NOTE An illustration of the longitudinal cross section of a typical class B hose is given in Figure 1.

4.2 Lining and cover

The lining and cover shall be concentric and shall be free from holes, porosity and other defects.

4.3 Wire helices

All helix wire shall comply with the requirements of BS 3592-1 or BS 3592-2 and shall be galvanized as specified in BS 443. The wire used for the internal helix in class B hoses and the embedded helix in class A hoses shall have a minimum tensile strength of 1 250 N/mm². The wire used for the embedded helix of class B hoses shall have a minimum tensile strength of 650 N/mm².

