BRITISH STANDARD

BS 7655 : Section 2.2 : 1993

Implementing Amendment No. 1, not published separately

Specification for

Insulating and sheathing materials for cables

Part 2. Elastomeric sheathing compounds

Section 2.2 Heat resisting types

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Cables and Insulation Standards Policy Committee (CIL/-) to Technical Committee CIL/20, upon which the following bodies were represented:

Aluminium Federation
Association of Consulting Engineers
Association of Manufacturers of Domestic Electrical Appliances
British Approvals Service for Cables
British Cable Makers Confederation
British Plastics Federation
British Steel Industry
Department of the Environment (Property Services Agency)
Department of Trade and Industry (Consumer Safety Unit, CA Division)
Electricity Association
Engineering Equipment and Materials Users' Association
Institution of Electrical Engineers
London Regional Transport

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

British Railways Board
British Rubber Manufacturers' Association Ltd.
British Telecommunications plc
ERA Technology Ltd.
GAMBICA (BEAMA Ltd.)
Institution of Incorporated Executive Engineers
London Underground Ltd.
Queen Mary and Westfield College
Telecommunications Cables Group of BCMC
Warrington Fire Research Centre

This British Standard, having been prepared under the direction of the Cables and Insulation Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 April 1993

Amendments issued since publication

Amd. No.	Date	Text affected
9219	February 1997	Indicated by a line in the margin

The following BSI references relate to the work on this standard:
Committee reference CIL/20
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Summary of pages

The following table identifies the current issue of each page. Issue 1 indicates that a page has been introduced for the first time by amendment. Subsequent issue numbers indicate an updated page. Vertical sidelining on replacement pages indicates the most recent changes (amendment, addition, deletion).

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Foreword

This Section of BS 7655 has been prepared under the direction of the Cables and Insulation Standards Policy Committee.

This Section specifies the physical properties of heat resisting elastomeric sheathing compounds. For a general introduction to the BS 7655 series and a list of Parts and Sections, Part 0 should be consulted.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Specification

1 Scope

This Section specifies the physical properties of heat resisting elastomeric sheathing compounds given in table 1. The relevant test methods for verification of conformity are given in BS EN 60811.

This Section is to be used in conjunction with BS 7655 : Part 0.

Table 1. Types of heat resisting elastomeric sheathing compounds

Type	Maximum material operating temperature °C	General application
EI 2	180	Ordinary duty silicone rubber

2 Normative references

This Section of BS 7655 incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed on the inside back page. For a dated reference, only the edition cited applies; any subsequent amendments to or revisions of the publication apply to this British Standard only when incorporated in the reference by amendment or revision. For undated references, any amendment to, or the latest edition of, the cited publication applies.

3 Definitions

For the purposes of this Section of BS 7655 the definitions given in BS 1755 : Part 1, BS 1755 : Part 2, BS 3558, BS 4727 : Part 2 : Group 08 and BS 7655 : Part 0 apply, together with the following.

3.1 variation

The difference between the median value after ageing and the median value without ageing expressed as a percentage of the latter.

3.2 median value

When several tests results have been obtained and ordered in an increasing or decreasing succession, the median is the middle value if the number of available values is odd and is the mean of the two middle values if the number is even.

4 Test requirements for physical properties

4.1 General

4.1.1 The test methods shall be as specified in table 2 and the method of pre-conditioning shall be as described in **4.2**. The temperatures used for the test methods shall conform to the conditions specified in **4.3**.

Table 2. Test methods (in accordance with BS EN 60811 unless otherwise stated)

Test	Method	
	BS EN 60811	Clause
Properties in the state as delivered		
Tensile strength and elongation at break	1.1 : 1995	**9.2**
Properties after ageing in air oven		
Tensile strength and elongation at break	1.2 : 1995	**8.1**
Hot set test	2.1 : 1992	**9**

4.1.2 When tested by the methods specified in **4.1.1** the properties shall be in accordance with the requirements given in table 3 for the particular type of material.

4.2 Pre-conditioning

The tests shall be carried out not less than 16 h after extrusion and cross-linking.

4.3 Temperatures for test methods

4.3.1 *Ambient temperature*

Tests shall be made at an ambient temperature within the range 5 °C to 35 °C unless otherwise specified in the details for the particular test.

4.3.2 *Tolerances on temperature values*

Unless otherwise stated in the particular specification the tolerances on temperature values quoted in the test methods shall be as given in table 4.

Table 3. Test requirements	
Test	**Requirements for compound type EI 2**
Properties in the state as delivered	
Minimum tensile strength	5 N/mm^2
Minimum elongation at break	150 %
Properties after ageing in air oven	
Temperature	200 °C
Duration	10 × 24 h
Minimum tensile strength	4 N/mm^2
Maximum variation	—
Minimum elongation at break	120 %
Maximum variation	—
Hot set test	
Temperature	250 °C
Duration	15 min
Mechanical stress	0.2 N/mm^2
Requirements	
Maximum elongation under load	100 %
Maximum elongation after unloading	25 %

Table 4. Tolerances on temperature values	
Specified temperature, t ° C	**Tolerance** °C
$-40 \leq t \leq 0$	±2
$0 < t \leq 50$	According to relevant clause
$50 < t \leq 150$	±2
$t > 150$	±3

List of references (see clause 2)

Normative references

BSI standards publications

BRITISH STANDARDS INSTITUTION, London

BS 1755 :	*Glossary of terms used in the plastics industry*
BS 1755 : Part 1 : 1982	*Polymer and plastics technology*
BS 1755 : Part 2 : 1974	*Manufacturing processes*
BS 3558 : 1980	*Glossary of rubber terms*
BS 4727	*Glossary of electrotechnical, power, telecommunication, electronics, lighting and colour terms*
BS 4727 : Part 2 :	*Terms particular to power engineering*
BS 4727 : Part 2 : Group 08 : 1986	*Electric cable terminology*
BS 7655 :	*Specification for insulating and sheathing materials for cables*
BS 7655 : Part 0 : 1993	*General introduction*
BS EN 60811	*Insulating and sheathing materials of electric cables — Common test methods*
BS EN 60811-1	*General application*
BS EN 60811-1-1 : 1995	*Measurement of thickness and overall dimension — Tests for determining the mechanical properties*
BS EN 60811-1-2 : 1995	*Thermal ageing methods*
BS EN 60811-2	*Methods specific to elastomeric compounds*
BS EN 60811-2-1 : 1995	*Ozone resistance test — Hot set test — Mineral oil immersion test*
BS EN 60811-3	*Methods specific to PVC compounds*
BS EN 60811-3-1 : 1995	*Pressure test at high temperature — Tests for resistance to cracking*

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