

Specification for

Insulating and sheathing materials for cables —

Part 3: PVC insulating compounds —

Section 3.2: Hard grade types

IMPORTANT NOTE This section of BS 7655 is to be read in conjunction with BS 7655-0.

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee GEL/20, Electric cables, to Subcommittee GEL/20/3, Insulation and sheath, upon which the following bodies were represented:

Association of Consulting Engineers
British Approvals Service for Cables
British Cables Association
British Plastics Federation
British Rubber Manufacturers' Association Ltd.
Department of Trade and Industry (Consumer Safety Unit, CA Division)
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Foreword

This section of BS 7655 has been prepared by Subcommittee GEL/20/3. It supersedes BS 7655-3.2:1993 which is withdrawn. It specifies the requirements for hard grade PVC insulating compound type 2.

This revision brings this section of BS 7655 fully into line with BS 7655-0:1997, including amendment 1:2000.

Test methods are specified in this section of BS 7655 by reference to the latest edition of standards in which they appear. A dated reference to the most recent edition of the relevant standard for each test method is given in BS 7655-0, which is to be read in conjunction with this section.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 3 and a back cover.

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1 Scope

This section of BS 7655 specifies the requirements for the hard grade PVC insulating compound listed in Table 1. The relevant test methods are given in BS EN 60811 and BS 6469.

This section is to be read in conjunction with BS 7655-0, which contains essential provisions for the application of this section of BS 7655.

Table 1 — Type of hard grade PVC insulation

Type	Maximum material operating temperature °C	General application
2	70	Hard grade

2 Normative references

For the purposes of this section of BS 7655, the requirements of BS 7655-0, **2.1** apply with regard to normative references.

The latest editions of the standards giving test methods are listed in the most recent edition of BS 7655-0.

3 Definitions

For the purposes of this section of BS 7655 the definitions given in BS 7655-0, clause **3** apply together with the following.

3.1

PVC

combinations of materials, of which polyvinyl chloride is the characteristic constituent, suitably selected, proportioned and treated, which meet the requirements given in the particular specification

4 Requirements

The requirements specified for the compound listed in Table 2 shall be met when the compound is tested using the test methods listed against each particular requirement.

NOTE For cross-references to the latest editions of the test method standards see BS 7655-0, Table 2.

Table 2 — Test requirements

Test	Test method in accordance with BS EN 60811 unless otherwise stated		Requirements for compound type 2
	Section	Clause	
<i>Properties in the state as manufactured</i>	1-1	9.1	
Minimum tensile strength (N/mm ²)			18.5
Minimum elongation at break (%)			125
<i>Bending test at low temperature</i>	1-4	8.1	
Temperature (°C)			-15 ± 2
Requirement			no cracks
<i>Elongation test at low temperature</i>	1-4	8.3	
Temperature (°C)			-15 ± 2
Minimum elongation without break (%)			20
<i>Pressure test at high temperature</i>	3-1	8.1	
Temperature (°C)			80 ± 2
Maximum indentation (%)			50
<i>Resistance to cracking</i>	3-1	9.1	
Temperature (°C)			150 ± 2
Requirement			no cracks
<i>Loss of mass test</i>	3-2	8.1	
Temperature (°C)			80 ± 2
Duration (h)			7 × 24
Maximum loss of mass (mg/cm ²)			2
<i>Hot deformation test</i> ¹⁾	BS 6469-99.1, clause 10		
Maximum deformation (%)			30
<i>Insulation resistance constant</i>	BS 6469-99.2, clause 8		
Temperature (°C)			20 ± 2
Minimum <i>K</i> value (MΩ·km)			350

¹⁾ Only for specified radial thicknesses less than 0.4 mm.

Bibliography

See BS 7655-0, 2.2.

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