

**DRAFT FOR DEVELOPMENT**

# **Materials for gaskets and weatherstripping for windows, doors, conservatories and curtain walling – Requirements and test methods**

ICS 91.060.50; 91.190

**This publication is not to be regarded as a British Standard.**

It is being issued in the Draft for Development series of publications and is of a provisional nature because some of the test methods require further development and review. It should be applied on this provisional basis, so that information and experience of its practical application can be obtained.

A review of this Draft for Development will be carried out not later than 2 years after its publication.

Notification of the start of the review period, with a request for the submission of comments from users of this Draft for Development, will be made in an announcement in the appropriate issue of *Update Standards*.

According to the replies received, the responsible BSI Committee will judge whether the Draft for Development can be converted into a British Standard or what other action should be taken.

Observations which it is felt should receive attention before the official call for comments will be welcomed.

These should be sent to the Secretary of BSI Technical Committee B/538/4 at British Standards House, 389 Chiswick High Road, London W4 4AL.

Confirmed  
December 2011



### **Publishing and copyright information**

The BSI copyright notice displayed in this document indicates when the document was last issued.

© BSI 2007

ISBN 978 0 580 49929 6

The following BSI references relate to the work on this Draft for Development:  
Committee reference B/538/4  
Draft for comment 06/30122899 DC

### **Publication history**

First published 28 February 2007

### **Amendments issued since publication**

| <b>Amd. no.</b> | <b>Date</b> | <b>Text affected</b> |
|-----------------|-------------|----------------------|
|-----------------|-------------|----------------------|

---

# Contents

Foreword *ii*

**1** Scope *1*

**2** Normative references *1*

**3** Terms and definitions *1*

**4** Performance requirements *2*

## **Annexes**

Annex A (informative) Guidance on selection of appropriate grades of products from those given in BS EN 12365-1:2003 *6*

Annex B (informative) Guidance on testing for wear resistance, resistance to chemicals and induction of environmental stress cracking *7*

Annex C (normative) Test method for migration *7*

Annex D (normative) Test method for staining *9*

Annex E (normative) Reversion test *10*

Annex F (normative) Tear resistance test *12*

Annex G (normative) Water absorption test for self adhesive cellular glazing tapes *14*

Annex H (informative) Guidance on assessment of chemical resistance *15*

Annex I (informative) Guidance on assessment of induction of environmental stress cracking *16*

Bibliography *17*

## **List of figures**

Figure F.1 – Example of arrangement for tear resistance test *13*

## **List of tables**

Table 1 – Performance requirements *5*

Table H.1 – Assessment of the effect of a chemical on a sample *16*

## **Summary of pages**

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 17 and a back cover.

# Foreword

## Publishing information

This Draft for Development was published by BSI and came into effect on 28 February, 2007. It was prepared by Subcommittee B/538/4, *Building hardware*, under the authority of Technical Committee B/538, *Doors, windows, shutters, hardware and curtain walling*. A list of organizations represented on this committee can be obtained on request to its secretary.

## Relationship with other publications

This Draft for Development is intended to supplement BS EN 12365-1:2003. It specifies performance requirements for the materials for gaskets and weatherstrips classified in BS EN 12365-1:2003 to assist the manufacturer in meeting the general requirements specified in BS EN 12365-1:2003, **5.3** and **5.4**.

## Use of this document

It has been assumed in the preparation of this Draft for Development that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

As a Draft for Development, this document is of a provisional nature. It should not be quoted as if it were a British Standard and particular care should be taken to ensure that claims of compliance are not misleading.

## Presentational conventions

The provisions in this Draft for Development are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

## 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 Draft for Development cannot confer immunity from legal obligations.**

# 1 Scope

This Draft for Development specifies performance requirements for materials used in gaskets, co-extruded glazing gaskets, weatherstripping and cellular adhesive glazing tapes for use in windows, doors, conservatories and curtain walling, made from any material, primarily for domestic and residential use. It is not applicable to butyl glazing tapes and other mastic materials, or to any materials for use in shutters.

*NOTE 1 Guidance on selection of appropriate grades of products from those listed in BS EN 12365-1:2003 is given in Annex A.*

*NOTE 2 Guidance on testing for wear resistance, resistance to chemicals and induction of environmental stress cracking is given in Annex B.*

# 2 Normative references

The following normative documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 6100, *Glossary of building and civil engineering terms*

BS 7116:1990, *Specification for double sided pressure sensitive adhesive tapes*

BS EN 12365-1:2003, *Building hardware – Gasket and weatherstripping for doors, windows, shutters and curtain walling – Part 1: Performance requirements and classification*

BS EN 12608:2003, *Unplasticized polyvinyl chloride (PVC-U) profiles for the fabrication of windows and doors – Classification, requirements and test methods*

BS ISO 1431-1:2004, *Rubber, vulcanized or thermoplastic – Resistance to ozone cracking – Part 1: Static and dynamic strain testing*

# 3 Terms and definitions

For the purposes of this Draft for Development the terms and definitions given in BS EN 12365-1:2003 and in BS 6100 apply together with the following.

## 3.1 cellular adhesive glazing tape

flexible cellular strip, self adhesive on one or both surfaces

## 3.2 co-extruded material

extruded material formed from two or more separate elements fused together in the extrusion process

## 3.3 co-extruded flexible/rigid material

co-extruded material in which at least one element is rigid and at least one element is flexible

## 3.4 multiple hardness material

co-extruded material in which all elements are flexible but of more than one hardness

**3.5 pile material**

material consisting essentially of filaments secured to a rigid or flexible backing

*NOTE This material is primarily used for weatherstripping.*

**3.6 sheathed cellular material**

material comprising a core, which includes a cellular material, contained within a flexible sheath

**3.7 glazing gasket**

pre-formed resilient material used to form the fixed joint between the glazing (or other infilling) and the frame members in which it is retained

**3.8 weatherstripping**

pre-formed resilient material used to form the dynamic joint between the opening and the fixed elements of a door or window

*NOTE Also known as “weatherstrip” and “weatherseal”.*

**3.9 fixed joint**

joint that can be dismantled and re-assembled if necessary during maintenance of the door or window

**3.10 dynamic joint**

joint that is formed between the opening and fixed elements of a door or window when the opening element is in its closed position

**3.11 partial fusion**

co-extrusion process in which the elements are designed to be separated by tension, applied manually

## **4 Performance requirements**

### **4.1 General**

The materials shall conform to the performance requirements specified in 4.2 to 4.8 as specified in Table 1.

All testing for conformity to the requirements specified in 4.2 to 4.8 shall be carried out on test specimens taken from new, unused material or product.

### **4.2 Ultraviolet resistance and colour fastness to artificial weathering**

When the material is tested in accordance with BS EN 12608:2003, 5.8.3, there shall be no cracking or crazing, or separation of any component parts, when viewed with normal or corrected vision without magnification. Unless otherwise agreed between the manufacturer and the purchaser, any colour change in the material shall be not greater than  $\Delta E^* = 5$ .

### 4.3 Resistance to migration and staining

*DRAFTING NOTE. There is concern that the test methods given in Annex C and Annex D might not work for adhesive tapes. When the test sandwiches are made up and heated in the oven, adhesive tapes might stick to the frame pieces so that it might not be possible to dismantle the sandwiches to do the necessary inspection and weighings at the end of the test. Advice from manufacturers of adhesive tapes is specifically requested on this point.*

#### 4.3.1 Resistance to migration

When the material is tested in accordance with Annex C, the migration value, *C*, shall be not more than 5 mg.

#### 4.3.2 Resistance to staining

When the material is tested in accordance with Annex D, there shall be no contact or migration staining.

### 4.4 Reversion

#### 4.4.1 Co-extruded flexible/rigid materials in which the rigid element is unplasticized polyvinyl chloride (PVC-U)

The materials shall conform to BS EN 12608:2003, 5.5.

#### 4.4.2 Other materials (including other co-extruded flexible/rigid materials)

When the materials are tested in accordance with Annex E, there shall be not more than 2% shrinkage in length.

### 4.5 Tear resistance and adhesion strength

#### 4.5.1 Tear resistance of co-extruded materials except for those produced by partial fusion

*COMMENTARY ON 4.5.1*  
*Owing to the nature of the manufacturing process of partial fusion it is not possible to specify requirements for tear resistance for materials produced by this process.*

When all component interfaces in the material are tested in accordance with Annex F, the tear on all test specimens shall not propagate along the interface between the components for a distance of more than 5 mm at any one point.

#### 4.5.2 Adhesion strength of cellular adhesive tapes

*COMMENTARY ON 4.5.2*  
*The adhesion strength test for cellular adhesive tapes is not designed to assess enhanced security. Windows with enhanced security performance are specified in BS 7950 and doors with enhanced security performance are specified in PAS 24-1.*

When the tapes are tested in accordance with BS 7116:1990, Appendix H, at 23 °C, the dynamic tensile adhesion strength shall be not less than 26 N/cm<sup>2</sup> of test specimen.