

Glazing for buildings —

Part 6: Code of practice for special applications —

ICS 81.040.20

Committees responsible for this British Standard

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- British Adhesives and Sealants Association
- British Plastics Federation
- British Woodworking Federation
- Consumer Policy Committee of BSI
- Council for Aluminium in Building
- Flat Glass Manufacturers' Association
- Glass and Glazing Federation
- Nottingham University
- Office of the Deputy Prime Minister — Building Division
- Office of the Deputy Prime Minister — represented by the BRE
- RICS Building Control Forum
- Co-opted members

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Foreword

This part of BS 6262 has been prepared by Subcommittee B/520/4. It partially supersedes BS 6262:1982, which will be withdrawn upon publication of all seven parts of the newly revised and restructured BS 6262. BS 6262:1982 is being revised and restructured to simplify its use and will be published in seven parts:

Part 1: General methodology for the selection of glazing;

Part 2: Energy, light and sound;

Part 3: Fire, security and wind loading;

Part 4: Safety related to human impact;

Part 5: Frame design considerations;

Part 6: Special applications;

Part 7: Provision of information

Since the correct selection of materials to be used in glazing for buildings depends on many factors, the recommendations in this part of this standard should be used in conjunction with the recommendations in the other parts.

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification, and particular care should be taken to ensure that claims of compliance are not misleading.

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

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 20, an inside back cover and a back cover.

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1 Scope

This part of BS 6262 gives information and recommendations for vertical glazing in the external walls and interiors of buildings, with respect to:

- a) structural sealant glazing;
- b) bolt fixed structural glazing;
- c) frameless doors and entrances;
- d) mirrors.
- e) Bolt fixed structural glazing with countersunk holes is not specifically covered.

NOTE Some guidance is also given on non-vertical use of mirrors.

These recommendations do not apply to:

- 1) patent glazing (see BS 5516-1);
- 2) glass in non-vertical applications (see BS 5516-2);
- 3) glazing for furniture and fittings (see BS 7376 and BS 7449);
- 4) glazing for commercial greenhouses (see BS 5502-21);
- 5) glazing for domestic greenhouses.

Requirements for standards of workmanship for the application of sealants have been published separately as BS 8000-16, and therefore this subject is not dealt with in this standard.

2 Normative references

The following referenced 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 952-1, *Glass for glazing — Part 1: Classification*.

BS 6180, *Barriers in and about buildings — Code of practice*.

BS 6262-2, *Glazing for buildings — Part 2: Code of practice for energy, light and sound*.

BS 6262-3, *Glazing for buildings — Part 3: Code of practice for fire, security and wind loading*.

BS 6262-4, *Glazing for buildings — Part 4: Code of practice for safety related to human impact*.

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1

glazing (noun)

glass or plastics glazing sheet material, for installation into a building

3.2

glazing (verb)

action of installing glass, or plastics glazing sheet material, into a building

3.3

insulating glass unit

an assembly consisting of at least two panes of glass, separated by one or more spaces, hermetically sealed along the periphery, mechanically stable and durable
[BS EN 1279-1:2004, definition 3.1]

NOTE The individual panes may be of different sizes and/or thicknesses.

3.4

pane

single piece of glass or plastics glazing sheet material, in a finished size ready for glazing

3.5**plastics glazing sheet material**

plastics materials in the form of a single sheet, or a combination of sheets laminated together, or an extruded multi-wall sheet

3.6**sealant bite**

depth of the structural sealant (and also the edge sealant in the case of insulating glass units), as shown in Figure 1, that contributes to the structural adhesion in structural sealant glazing

3.7**vertical glazing**

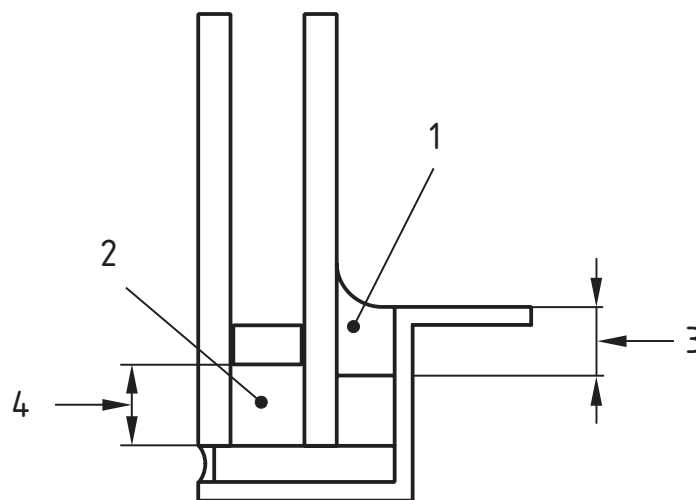
glazing which is vertical, or within 15° of vertical

3.8**four edge bonded structural sealant glazing**

structural sealant glazing where the pane or insulating glass unit is held in place by the adhesive properties of the structural sealant along all four edges

3.9**two edge bonded structural sealant glazing**

structural sealant glazing where the pane or insulating glass unit is held in place by the adhesive properties of the structural sealant along two opposite edges and by conventional beaded framing systems on the other two edges

**Key**

- 1 Structural sealant
- 2 Igu edge sealant
- 3 Sealant bite
- 4 Sealant bite

Figure 1 — Definition of sealant bite in structural sealant glazing

4 Structural sealant glazing**4.1 General**

This method of glazing uses the adhesive qualities of silicone sealants to retain the glass in the frame by adhesion, without the necessity of any mechanical retention such as beads, clips or bolt fixings. The system can be either two edge or four edge structural sealant glazing.

A structural seal support frame is mounted onto the glass in a factory, complete with any appropriate setting blocks, location blocks and distance pieces. On site, the support frame is attached to the building structure by mechanical means and sealed.

Figure 2 shows the principles of a structural glazing system.

NOTE Structural glazing is not appropriate for fire resistant glazing.

Further information on all aspects of structural sealant glazing can be found in:

- prEN 13022, *Glass in building — Structural sealant glazing*; and
- the EOTA publication, *Guideline for European Technical Approval for structural sealant glazing systems*.

4.2 Design principles

4.2.1 Glass selection

The type of glass or insulating glass unit should be determined as if it were fully supported on all edges.

It is recommended for four edge structural sealant glazing that the inner pane of an insulating glass unit is not manufactured from monolithic toughened glass, since, if this is accidentally fractured, there is a possibility that the rest of the unit will become detached from the adhesive.

The glass selection should take into account the likely loading (e.g. see BS 6262-3, BS 6399-1, 2 and 3 and BS 6180) and safety requirements (e.g. see BS 6262-4), and be appropriate for environmental factors (such as thermal insulation, solar control and sound insulation, e.g. see BS 6262-2).

4.2.2 Structural sealant selection

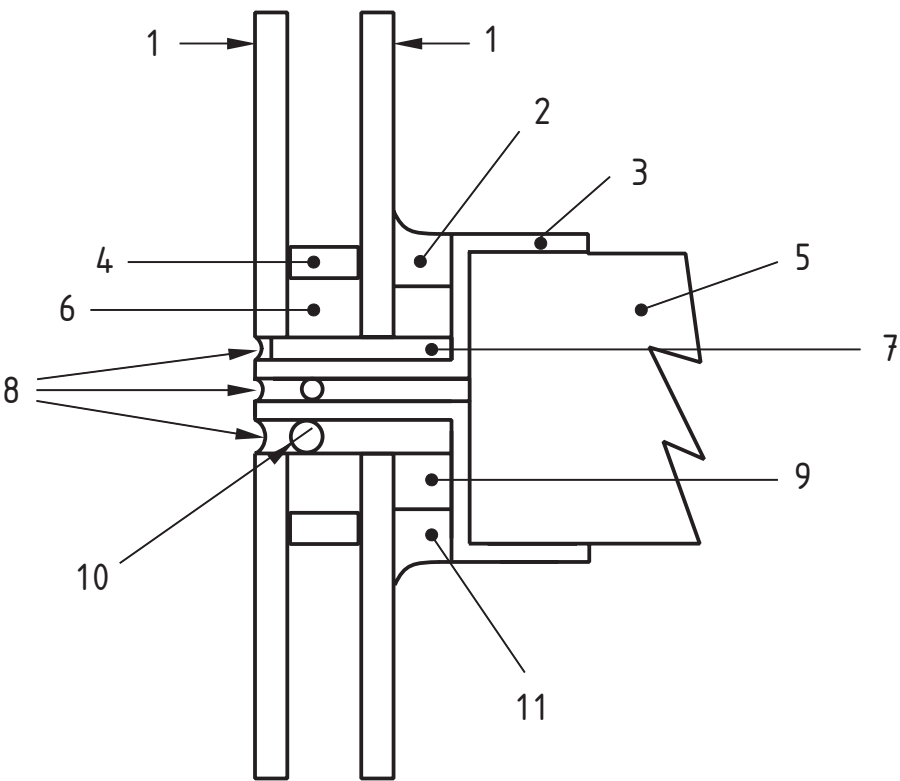
The adhesive sealant is the only, or the principal means, of retaining the glazing in position, so the type of sealant is important. Only silicone sealants recommended by the manufacturer should be used.

The sealant bite should be determined from the design loads on the glass and the allowable stress of the sealant. Annex A describes the design method.

With an insulating glass unit, both the edge sealant and the structural sealant serve a structural purpose in retaining the glass in position, and the sealant bite for both of these should be not less than the calculated figure.

The glazing should be designed in such a way that the sealant is only subjected to short duration tensile forces, e.g. wind suction or live loads. Dead loads or sustained loads should be supported by other means, e.g. setting blocks to carry the glass weight (see Figure 2).

The design of the glazing should eliminate shear stresses on the structural sealant.



Key	
1	Glass
2	Structural sealant
3	Structural sealant support frame
4	Spacer bar
5	Building structure
6	Igu edge sealant
7	Setting block
8	Weather seals
9	Spacing material
10	Backer rod
11	Structural sealant

Figure 2 — Principles of a structural sealant glazing system

4.2.3 Bonding

The sealant will only perform its function if the adhesive bonds between the sealant and the surfaces of the glass and the sealant and the support frame are adequate and durable. Tests should be performed on the adhesion at all the interfaces with the proposed substrates to ensure that the joint is capable of developing the required strength and that this can be sustained for the expected life of the glazing, assuming regular inspection and maintenance.

Adhesion is product and surface specific. Once the adhesion tests have been completed satisfactorily, the specification for the glass, the support frame, the adhesive sealant and any primers should not be changed. If any changes are made, the full range of tests should be repeated.

4.3 Compatibility of materials

The insulating glass units should have the edge sealant manufactured from neutral curing silicone.

Care should be taken to ensure that the structural sealant is compatible with the insulating glass unit edge sealant.

Setting blocks, location blocks, weather seals and any other organic materials used in the glazing system should be compatible with the structural sealant and the insulating glass unit edge sealant.