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Glass in building — Assembly rules — Glazing wedges

Verre dans la construction — Règles de pose — Calage des vitrages

ICS 81.040.20

ISO/CEN PARALLEL ENQUIRY

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Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14439 was prepared by Technical Committee ISO/TC 160, *Glass in building*, Subcommittee SC 2, and by Technical Committee CEN/TC 129, *Glass in building* in collaboration.

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

Introduction

The properties and functions of blocks, described and illustrated in the following clauses, were developed in consideration of basic mechanical rules of weight dispositions and loads.

1 Scope

This standard specifies the functions, requirements and installation of glazing blocks within a frame during its manufacturing, transportation, instalment and operational life. The standard applies to glazing blocks used for all types of flat glass (drawn sheet, float, cast, wired and not-wired, clear and tinted), as well as to derived processed flat types of glass. For certain flat glass products and intended uses, e.g. fire resistant, additional considerations could apply.

This standard applies to all types of vertical, or nearly vertical, glazing (e.g. glazing which is no more than 15^{o} from the vertical), in all types of fixed or opening frames used in buildings.

Structural sealant glazing is excluded from this International Standard.

2 Normative references

This International Standard incorporates by dated or undated reference provisions from another publication. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of these publications apply to this International Standard only when incorporated in it by amendment or revision. For undated references the latest editions of the publications referred to apply.

ISO 48	Rubber, vulcanised or thermoplastic – Determination of hardness (hardness between 10 and 100 IRHD)
EN ISO 2039-1	Ball indexation method
prEN 12488	Glass in building – Glazing requirements - Assembly rules version 2002-02
prEN 12519	Doors and windows – Terminology version August 2003

3 Definition

For the purpose of this International Standard definitions according to prEN 12519 and given below apply:

3.1
glazing block
a piece of material placed between the glass pane and the frame preventing direct contact between the two of them. Glazing blocks include setting blocks, location blocks and distance pieces.

NOTE. Frames include sashes and casements.

4 Requirements for glazing blocks

4.1 General

a) Glazing blocks shall be imperishable and compatible with the glazing materials, the frame and with all components of the glazing, (e.g. the interlayer in laminated glass, or the seal of insulating glass units). The chosen material shall have such properties that damaging of the glass edge and/or edge seal is prevented.

b) For the selection of material environmental conditions and the system of glazing must be taken into account.

c) The functional characteristics of the blocks shall be maintained during the working life of the glazing.

d) The glazing blocks shall not prevent drainage or equalization of vapour pressure.

e) Glazing blocks shall be fixed in their intended position. They shall not be fixed in a manner that will impair the tightening function of the glazing material.

f) The glazing blocks shall be positioned parallel to the glass edge.

g) The glass shall be supported over the whole length of the blocks.

4.2 Setting blocks

4.2.1 Function

Setting blocks shall be used in all types of frames. The shape of the blocks shall be suitable for the glazing rebate and the type of glazing. See annex B for examples of different types of setting blocks.

Setting blocks are intended:

— to transmit the weight of the glass to the frame and its surrounding construction;

— to position the glass unit in the frame;

— to prevent contact between glass and any component of the frame.

Note Setting blocks positions are shown in annex A.

4.2.2 Positioning

Setting blocks shall be positioned according to the type of frame. No more than two setting blocks shall be used at the bottom edge of the glass in case of fixed glazing.

The minimum distance between the corner of the frame and the nearest edge of the block should be the length of a setting block and never less than 50 mm.

Note. The minimum distance of 50 mm is to prevent excessive stresses near the corner of the glass.

4.2.3 Material

Setting blocks shall be made of either:

a) sealed hardwood (density ≥ 650 kg/m³)

b) synthetic materials with the hardness of 70-95 IRHD, see ISO 48, or comparable hardness.

4.2.4 Dimensions

4.2.4.1 Width

The width of the setting blocks shall generally be 2 mm larger than the glazing unit but always such that the glass is supported over its full thickness.

4.2.4.2 Length

4.2.4.2.1 Calculation

The required length of a setting block is depending on:

the weight of the glazing unit and its transfer to the rebate platform

a) the resistance to compression of the material the block is made of

b) the number of blocks under the bottom edge of the glazing unit

and shall be calculated according to following formula:

$$l = 25 \times A \times \frac{v}{a \times n \times s}$$

where:

A: area of the glazing unit, in m²

v: cumulated thickness of the sheets within the glazing unit, in mm

a: projection on the rebate platform of the sheet(s) supporting the glazing unit, in mm

n: number of setting blocks under the bottom edge of the glazing unit (n = 1 or 2 according to annex A)

σ: allowed strength of the material the block is made of, in N/mm²

l: length of the block, in mm.

NOTE: A practical recommendation based on calculations according to the formula is given in informative annex C.

4.2.4.2.2 Requirements

The length of a setting block shall not be less than 50 mm.

The reaction of the block(s) is considered as uniformly distributed and shall not exceed 1.5 N/mm^2 (Mpa).

4.2.4.3 Thickness

The thickness of setting blocks shall be at least equal to the minimum edge clearance between glass and glazing rebate platform, sufficient for ventilation and/or drainage as indicated in prEN 12488.

4.3 Location blocks

4.3.1 Function

Location blocks hold the glass in the correct position in the frame and avoid contact between glass and the frame.

Note: Location block positions are shown in annex A.

4.3.2 Positioning

Location blocks are required in frames where there is a risk of glass slippage (opening windows, vibrations etc.).

The positioning of location blocks shall be in accordance with the type of frame, see annex A.

The minimum distance between the corner of the glass and the nearest edge of the block should be the length of a location block.

4.3.3 Material

Location blocks shall be made of materials with a hardness of 70-95 IRHD, see ISO 48.

4.3.4 Dimensions

4.3.4.1 Width

The width of location blocks shall be at least equal to the thickness of the glass unit.

4.3.4.2 Length

The length of location blocks shall not be less than 50 mm.

4.3.4.3 Thickness

The thickness of location blocks shall be at least equal to the minimum edge clearance, as indicated in prEN 12488.

NOTE: If additional location blocks are used to ensure the correct positioning of the glass when windows glazed by a window manufacturer or glazier while transported to a work site, the positioning of those additional blocks depends on the type of frame and the way in which they might be transported (e.g. in cases where they are tilted). The thickness shall be such that they do not interfere with the function of any other block.

4.4 Distance pieces

4.4.1 Function

Distance pieces are used to transmit the loads perpendicular to the plane of glazing and to avoid contact between the glass and the rebate upstand or glazing bead.

Note Distance piece positions are shown annex A.

4.4.2 Material

When blocks are used as distance pieces, they shall be made of elastomeric materials of hardness 50-70 IRHD, see ISO 48 and EN ISO 2039-1.

4.4.3 Positioning

When blocks are used as distance pieces, the maximum distance between the centres of two successive blocks should be calculated in order not to create excessive stress on the glass. Distance pieces shall be placed in pairs, opposite to each other, except where the glazing method permits them to be used on one side only.

Distance pieces shall be placed near setting blocks or location blocks. At least two pairs of distance pieces shall be placed on each side of the frame.

4.4.4 Dimensions

4.4.4.1 Length

The minimum length of distance pieces shall be 30 mm.

4.4.4.2 Height

The height of distance pieces shall insure that the water tightness of the glazing seal is not impaired.

The contact height with the glass shall be at least 5 mm.

4.4.4.3 Thickness

The thickness of distance pieces shall be equal to the face clearance.

Annex A
(normative)

Positioning of glazing blocks as a function of frame type

NOTE: Frames include sashes and casements.

Key:

Blocks are indicated as follows:
functions:
SB = setting blocks
LB = location blocks (optional)
DP = distance pieces
positions:
A, B, C, D, E, F, G

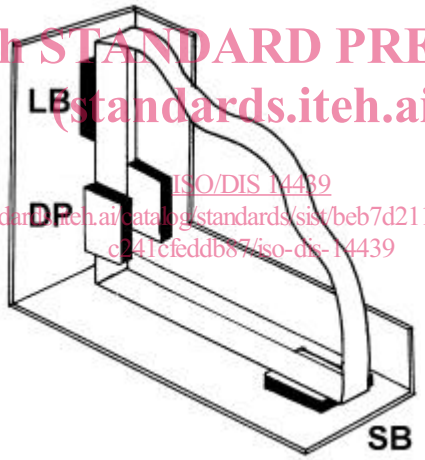

Figure A.1: Indication of blocks

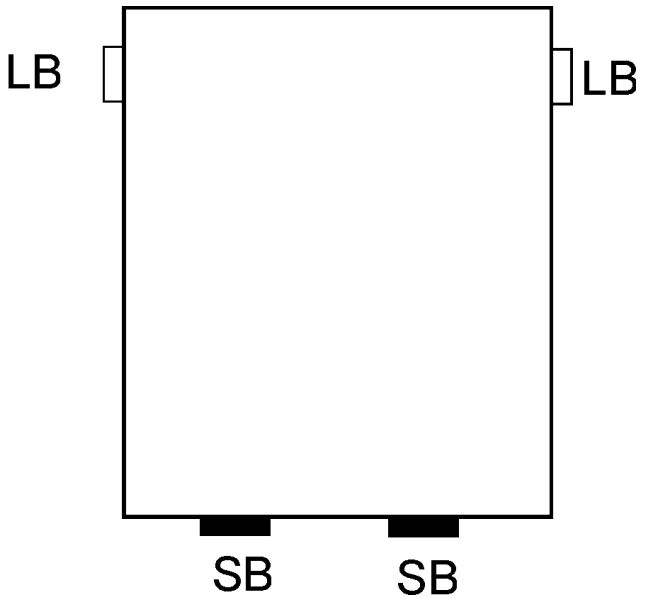

Figure A.2: Fixed frame

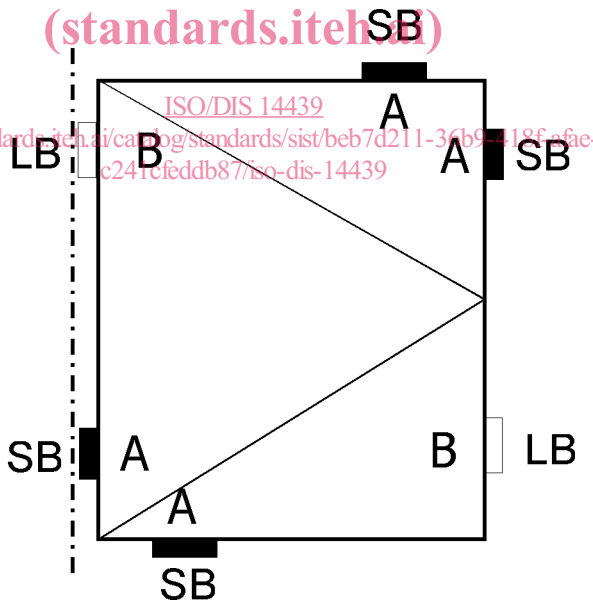

Figure A.3: Side hung frame