Glass in building - Structural sealant glazing - Part 1: Glass products for structural sealant glazing systems for supported and unsupported monolithic and multiple glazing

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13022-1:2006+A1:2010 sisaldab Euroopa standardi EN 13022-1:2006+A1:2010 ingliskeelset teksti.	This Estonian standard EVS-EN 13022-1:2006+A1:2010 consists of the English text of the European standard EN 13022-1:2006+A1:2010.
Standard on kinnitatud Eesti Standardikeskuse 30.06.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.06.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 28.04.2010.	Date of Availability of the European standard text 28.04.2010.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 01.040.81, 81.040.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13022-1:2006+A1

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ICS 01.040.81; 81.040.20

Supersedes EN 13022-1:2006

English Version

Glass in building - Structural sealant glazing - Part 1: Glass products for structural sealant glazing systems for supported and unsupported monolithic and multiple glazing

Verre dans la construction - Vitrage extérieur collé (VEC) - Partie 1: Produits verriers pour les sytèmes de vitrage extérieurs collés pour produits monolithiques et produits multiples calés et non calés

Glas im Bauwesen - Geklebte Verglasungen - Teil 1: Glasprodukte für SSG-Systeme - Einfach- und Mehrfachverglasungen mit und ohne Abtragung des Eigengewichtes

This European Standard was approved by CEN on 13 March 2006 and includes Amendment 1 approved by CEN on 23 February 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13022-1:2006+A1:2010) has been prepared by Technical Committee CEN/TC 129 “Glass in building”, the secretariat of which is held by NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

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

This document includes Amendment 1, approved by CEN on 2010-02-23.

This document supersedes EN 13022-1:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] 〈A1〉.

[A1] This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s). 〈A1〉

This Part of the standard is one of a series of interrelated standards dealing with:

— glass products for structural sealant glazing systems;

— installation of glass products in a structural manner on building façades;

— UV-resistant and structural sealant for use in structural sealant glazing.

The interrelated parts are:

— EN 13022-1: Glass in building — Structural sealant glazing — Part 1: Glass products for structural sealant glazing systems for supported and unsupported monolithic and multiple glazing

— EN 13022-2: Glass in building — Structural sealant glazing — Part 2: Assembly rules

— EN 15434: Glass in building — Product standard for structural and/or ultra-violet resistant sealant (for use with structural sealant glazing and/or insulating glass units with exposed seals)

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies requirements for the suitability for use of supported and unsupported glass products for use in “Structural Sealant Glazing” (SSG) applications. Four schematic drawings of SSG systems are shown in Figure 1 and three section drawings of an SSG type II system are shown in Figure 2 for illustration purposes. This European Standard on glass products is considered as a supplement to the requirements specified in the corresponding standards with regard to verifying the suitability for use in SSG systems.

Only soda lime silicate glasses are taken into consideration in this European Standard.

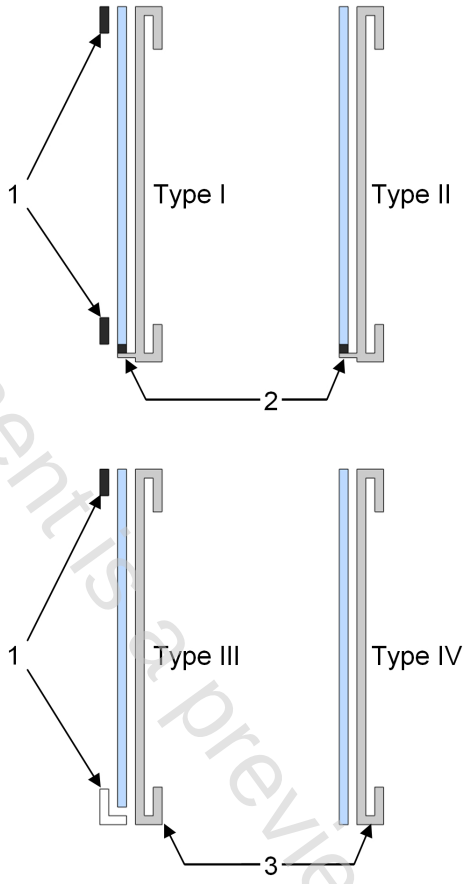
Plastic glazing is excluded from the scope of this European Standard.

Any glass products meeting the requirements of this European Standard are suitable for use in SSG systems as defined in ETAG 002[1)] “Structural sealant glazing system”.

All glass products are installed and bonded into the support under controlled environmental conditions as described in Clause 5 of EN 13022-2:2006.

When the outer seal of the insulating glass unit has a structural function and/or is exposed to UV radiation without any protection, only silicone based sealant are permitted in the construction of the unit.

1) ETAG: European Technical Approval Guideline



Key

1 retaining device to reduce danger in case of bond failure

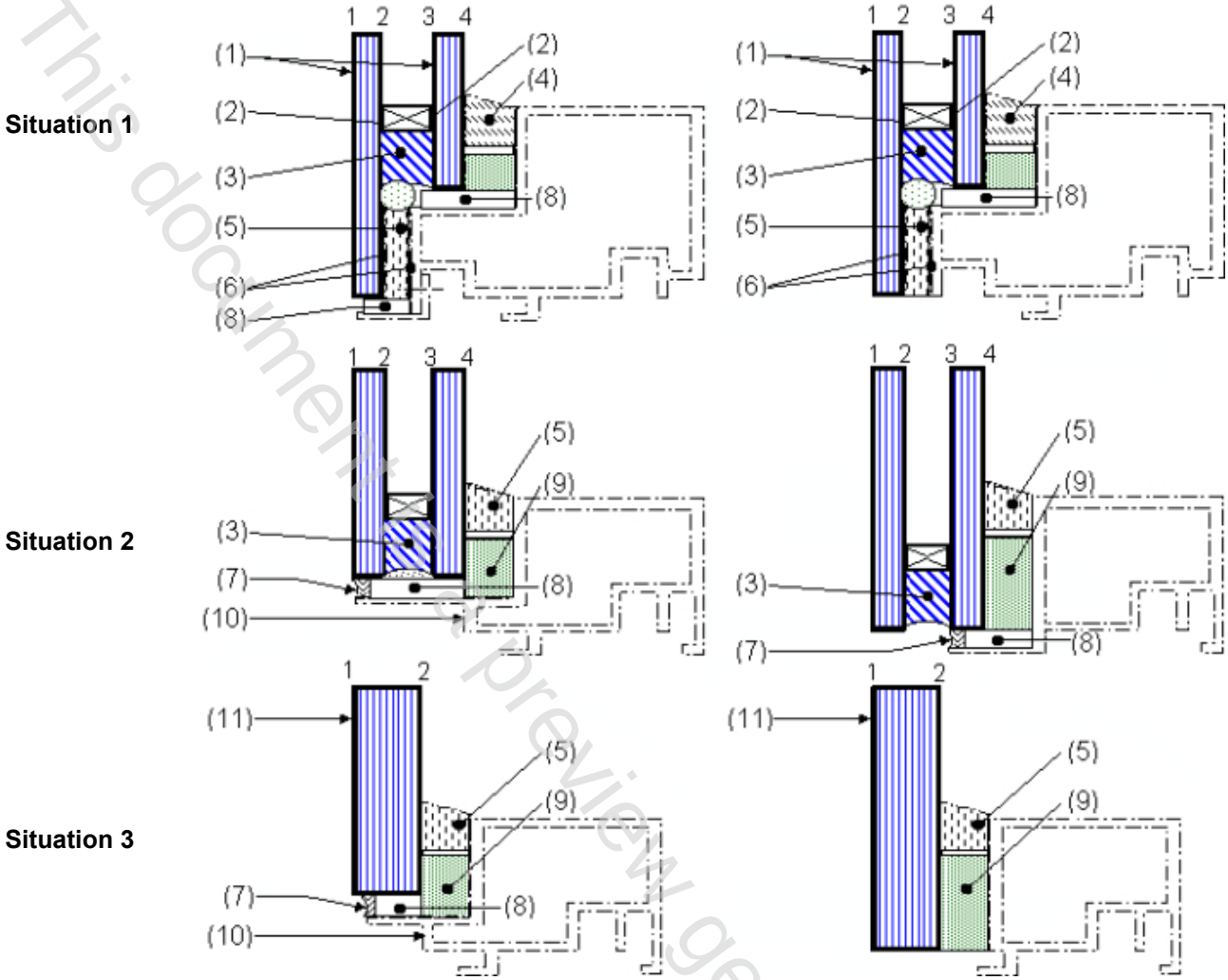
2 mechanical self-weight support

3 structural sealant support frame

Figure 1 — Schematic examples of the different types of SSG

NOTE 1 Retaining devices may be required by national regulations.

NOTE 2 In case of laminated glass and laminated safety glass, SSGS of types III and IV may be forbidden by national regulation.



Key

1 glass unit
2 inner seal
3 outer seal
4 finishing material
5 structural seal
6 structural seal adhesion surface
7 weather seal
8 setting block
9 adhesive spacer
10 structural seal support frame
[A1] 11 laminated glass or laminated safety glass, or monolithic glass unit [A1]

Figure 2 — Scope

[A1] NOTE 3 [A1] The section drawings above are examples of structural sealant glazing system type II and IV.

SITUATION 1

The SSG seal is applied on face 2 of the insulating glass unit. The outer IGU sealant has no structural function and therefore only contributes to the resistance of the unit against the ingress of water (vapour and liquid) and air. Depending on the type and construction of the IGU sealant any leakage of gas from the unit will be minimised. The SSG seal need to have good adhesion to the glass and steel surfaces to withstand the mechanical stresses that results from the exposure of the IGU to the climatic elements and in particular the effects of solar radiation.

SITUATION 2

The SSG seal is applied on face 4 of the insulating glass unit. The outer IGU sealant has a structural function as well as having to maintain the integrity and performance of the IGU. Any stress or loads applied to the outer glass will be transferred to the IGU sealant.

SITUATION 3

The SSG seal is applied on face 2 of [A1] the laminated glass or laminated safety glass or monolithic glass unit [A1]. The sealant has a structural function and any loads applied to the glass will be transferred to it.

[A1] NOTE 4 In case of laminated glass and laminated safety glass, SSGS of types III and IV may be forbidden by national regulation. [A1]

2 Normative references

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

EN 572-2, *Glass in building — Basic soda lime silicate glass products — Part 2: Float glass*

EN 572-4, *Glass in building — Basic soda lime silicate glass products — Part 4: Drawn sheet glass*

EN 572-5, *Glass in building — Basic soda lime silicate glass products — Part 5: Patterned glass*

EN 1096 (all parts), *Glass in building — Coated glass*

EN 1279 (all parts), *Glass in building — Insulating glass units*

EN 1863 (all parts), *Glass in building — Heat strengthened soda lime silicate glass*

EN 1991-1-4, *Eurocode 1: Actions on structures — Part 1-4: General actions — Wind actions*

EN 12150 (all parts), *Glass in building — Thermally toughened soda lime silicate safety glass*

prEN 13474 (all parts), *Glass in building — Design of glass panes*[2)]

EN 14179 (all parts), *Glass in building — Heat soaked thermally toughened soda lime silicate safety glass*

EN 15434:2006, *Glass in building — Product standard for structural and/or ultra-violet resistant sealant (for use with structural sealant glazing and/or insulating glass units with exposed seals)*

EN ISO 12543 (all parts), *Glass in building — Laminated glass and laminated safety glass*

2) Under preparation

3 Symbols, terminology, terms and definitions

3.1 Symbols

a	minimum dimension of glass	m
b	maximum dimension of glass	m
d	width of insulating glass unit air space	mm
h	height of insulating glass unit hermetic seal	mm
P	relevant combined load for wind, snow and self weight	Pa
R	distance between structural seal and glass edge	mm
S	glass area	m^2
σ	allowable stress in the sealant	MPa
β	coefficient depending on the relative thickness of insulating glass panes	
Δa	maximum difference in altitude between production transport and assembly at site	m