SLOVENSKI STANDARD
SIST EN 13022-1:2014

01-september-2014

Nadomešča:
SIST EN 13022-1:2006+A1:2010

Steklo v gradbeništvu - Strukturna zasteklitev - 1. del: Stekleni proizvodi za strukturne zasteklitve za podprte in nepodprte monolitne in sestavljene zasteklitve

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

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

Verre dans la construction - Système de vitrage extérieur collé (VEC) - Partie 1: Produits verriers pour système VEC pour produits monolithiques et produits multiples calés

Ta slovenski standard je istoveten z: **EN 13022-1:2014**

ICS:

81.040.20	Steklo v gradbeništvu	Glass in building

SIST EN 13022-1:2014 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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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 - Système de vitrage extérieur collé (VEC) - Partie 1: Produits verriers pour système VEC pour produits monolithiques et produits multiples calés

Glas im Bauwesen - Geklebte Verglasungen - Teil 1: Glasprodukte für Structural-Sealant-Glazing (SSG-) Glaskonstruktionen für Einfachverglasungen und Mehrfachverglasungen mit oder ohne Abtragung des Eigengewichtes

This European Standard was approved by CEN on 9 February 2014.

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Foreword

This document (EN 13022-1:2014) 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of an identical text or by endorsement, at the latest by December 2014 and conflicting national standards shall be withdrawn at the latest by December 2014.

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 supersedes EN 13022-1:2006+A1:2010.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

EN 13022-1 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the 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.

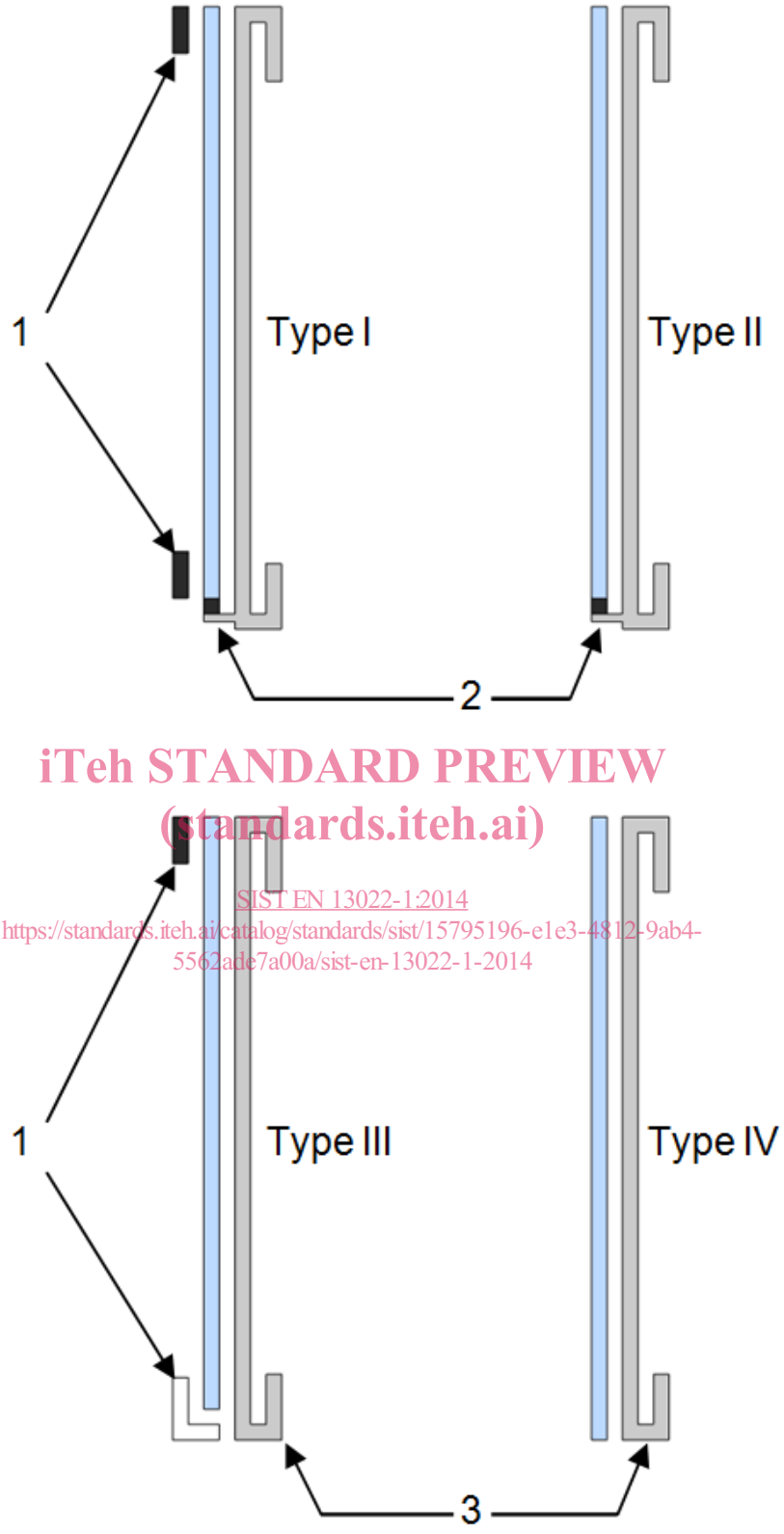
Plastic glazing is excluded from the scope of this European Standard.

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 13022-2:2014.

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.



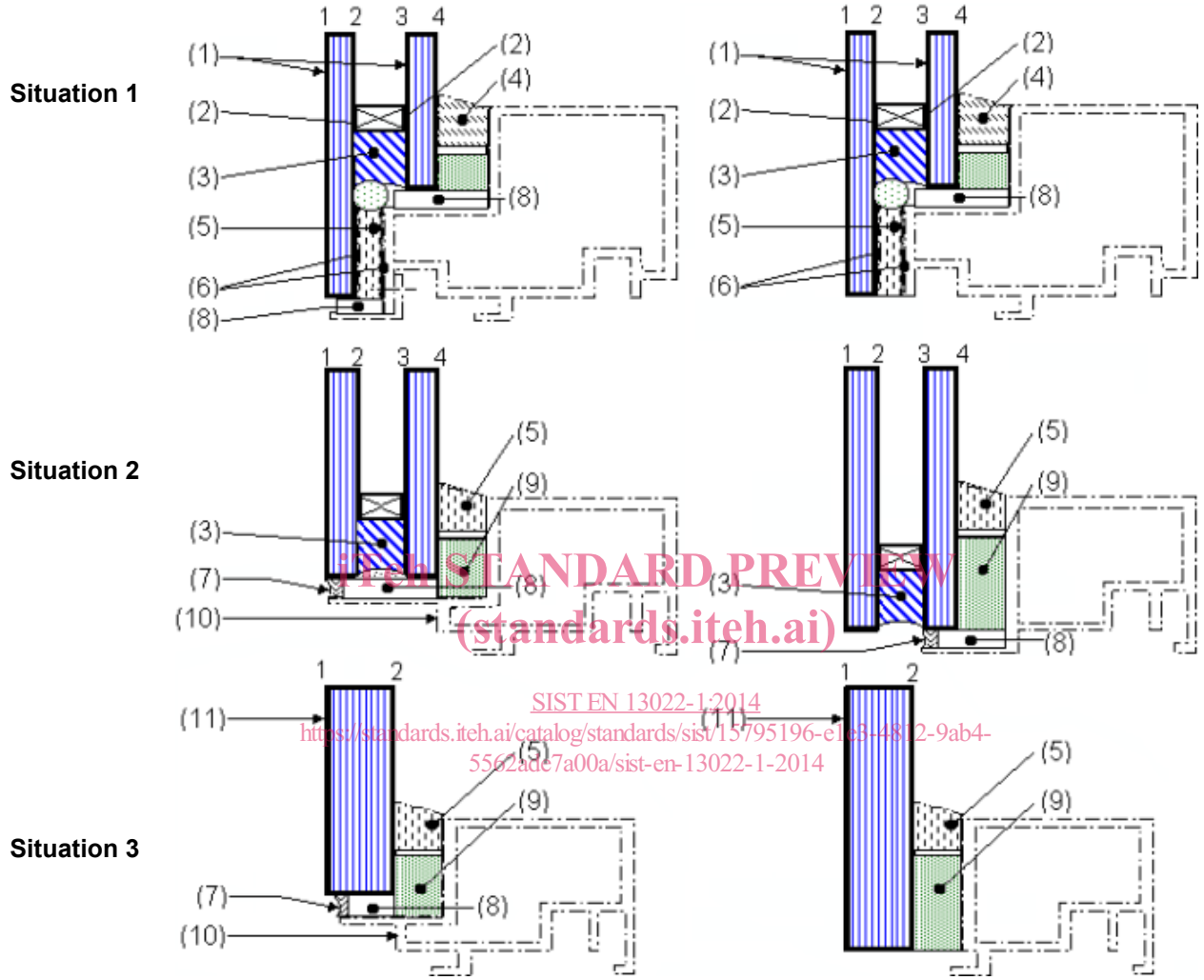
Key

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
11 laminated glass or laminated safety glass or monolithic glass unit

Figure 2 — Scope

NOTE 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 minimized. The SSG seal need to have 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.

SITUATION 3

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

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

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 1991-1-1, *Eurocode 1: Actions on structures — Part 1-1: General actions — Densities, self-weight, imposed loads for buildings*

EN 1991-1-3, *Eurocode 1 – Actions on structures — Part 1-3: General actions — Snow loads*

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*

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

EN 15434:2006+A1:2010, *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)*

prEN 16612, *Glass in building — Determination of the load resistance of glass panes by calculation and testing*

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

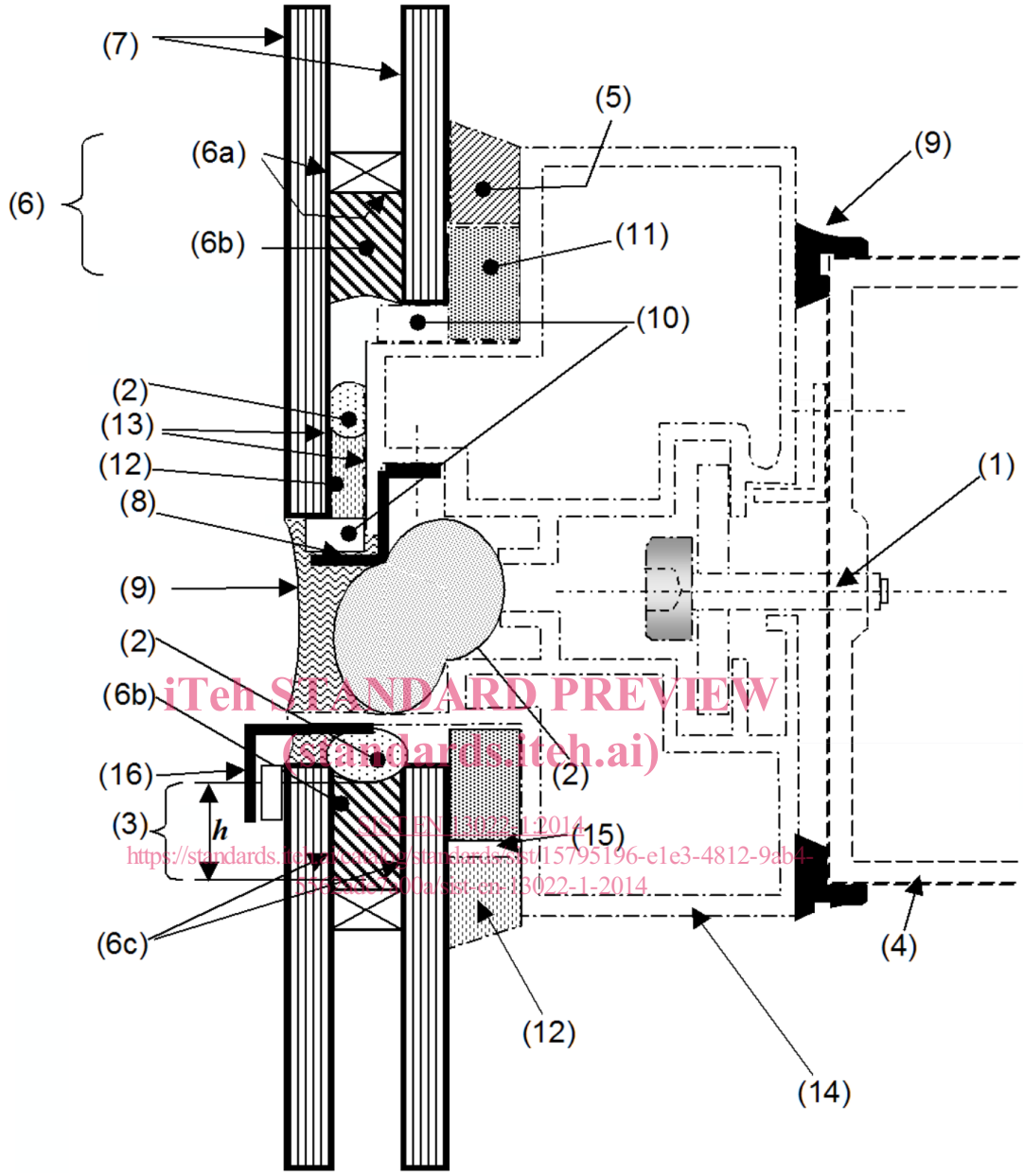
3 Symbols, terminology, terms and definitions

3.1 Symbols

a	minimum dimension of glass	m
b	maximum dimension of glass	m
c	is the height of sealant necessary for structural purposes	mm
d	width of insulating glass unit air space	mm
h	height of the outer seal barrier	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
T	thickness of the thickest glass pane	mm
σ_d	design stress of the sealant	MPa
β	coefficient depending on the relative thickness of insulating glass panes	
Δ*a*	maximum difference in altitude between production transport and assembly at site	m

NOTE An accurate method of distribution of the load between the two panes is provided in prEN 16612.

3.2 Terminology



Key

1	anchorage	8	mechanical self-weight support
2	backer rod	9	weather seal
3	height of the outer seal	10	setting blocks
4	façade framework	11	adhesive spacer
5	finishing material	12	structural seal
6	hermetic seal	13	structural seal adhesion surface
6a	(inner seal)	14	structural seal support frame
6b	(outer seal)	15	anti-adhesive film
6c	outer seal adhesion surface	16	retaining device
7	glass unit		

Figure 3 — Terminology

NOTE Figure 3 is only included as an aid to explaining the terminology used in this European Standard. The components indicated in broken and dotted lines are covered by other technical specifications such as ETAG 002 or standards concerned with curtain wall façades.

3.3 Terms and definitions

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

3.3.1
structural sealant glazing
SSG
assembly in which glass products are fixed to the structural seal frame by means of a sealant that has been shown to be capable of withstanding the load actions applied to the glass products of the structural seal frame

3.3.2
anchorage
anchorage of the structural seal support frame on the framework

Note 1 to entry: See (1) in Figure 3.

3.3.3
backer rod
pre-formed continuous strip that limits the section and height of a fillet of weather sealant

Note 1 to entry: See (2) in Figure 3.

3.3.4
hermetic seal bite
dimension of the second barrier of the hermetic seal measured parallel to the glass unit at the panel level

Note 1 to entry: See (3) in Figure 3.

3.3.5
façade framework
members to which the structural seal support frame is connected and which transmits the loads to the building

Note 1 to entry: See (4) in Figure 3.

3.3.6
finishing material
elastomeric sealant extruded into the joint of sufficient cross section which when cured constitutes a barrier to air and water, or a pre-extruded gasket with a fin of sufficient cross-section

Note 1 to entry: See (5) in Figure 3 and (4) in Figure 2.

3.3.7
outer seal
ensures a hermetic seal around the edge of an insulating unit. It also resists the ingress of water or vapour and light whilst remaining compliant with displacements caused by wind or other loads

Note 1 to entry: The hermetic seal is called “structural” when it also has the supplementary function of adequately transmitting to the seal support frame the forces applied to the glass.

Note 2 to entry: See (6b) in Figure 3 and (3) in Figure 2.

3.3.8
inner seal
sealant which when applied is in contact with the cavity of the insulating glass unit