

European Technical Assessment

ETA-08/0032
version 1
of 23/09/2019

(English language translation, the original version is in French language)

GENERAL PART

Technical Assessment Body issuing the European Technical Assessment:
Full name or acronym (if full name included in the header)

Centre Scientifique et Technique du Bâtiment

Trade name of the construction product:

UNIVERS 54 mm

Product family to which the construction product belongs:

Structural sealant glazing kits

Manufacturer:

INSTALLUX
Chemin du Bois-Rond
FR-69720 ST BONNET DE MURE

Manufacturing plant(s):

INSTALLUX
Chemin du Bois-Rond
FR-69720 ST BONNET DE MURE

This European Technical Assessment contains:

26 pages including 17 pages of Annexes which form an integral part of this assessment

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:

ETAG 002, edition 2000, used as European Assessment Document (EAD)

This version replaces:

ETA-08/0032 of 05/11/2018

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SPECIFIC PART

1. Technical description of the product

Structural sealant glazing frame on which the glazing units are bonded all along the perimeter with a structural sealant and which constitutes infills for façade or glazing roof. The frames are presented in one configuration with an aluminum edge.

1.1. Components of the kit

1.1.1 Structural sealants

Table 1 – Properties and characteristics of the sealants (with reference to their specific ETA)

		Structural sealant				Outer edge seal	
		DOWSIL 993	DOWSIL 895	TREMCO SG 90	TREMCO SG 99	DOWSIL 3362	IG 25 HM Plus
ETA N°		01/0005		05/0005		03/0003	11/0391
Design stress in tension	σ_{des} (MPa)	0,14	0,14	0,12	0,14	0,14	0,19
Design stress in dynamic shear	τ_{des} (MPa)	0,11	0,14	0,08	0,075	0,11	0,13
Design stress in static shear	τ_{∞} (MPa)	0,011	—	—	0,007	—	0,011
Elastic modulus in tension or compression tangential to the origin	E_0 (MPa)	1,4	0,9	0,81	1,51	2,4	2,58
Elastic modulus in shear tangential to the original	G_0 (MPa)	0,47	0,3	0,27	0,50	0,80	0,86
Working time (at 25 °C, 50 % RH)	(Minutes)	10 to 30	15	2 (*)	6 (*)	10	20
Skin over time (at 25 °C, 50 % RH)	(Minutes)	—	15	2 (*)	6 (*)	—	6 (*)
Tack-free time (at 25 °C, 50 % RH)	(Minutes)	80 to 100	30 to 50	3 (*)	20 (*)	30 to 45	180
Time before transport: the minimum time before transport is normally	(Days)	10	21	1 to 2	10	—	3
Water vapour permeability (g/m ²)						30 g/m ² .d for 1,5 mm thickness	15,7 g/m ²
Gas leakage rate (EN 1279-3)						9,9 x 10 ⁻³ .a ⁻¹ (**)	0,38 – 0,56 %.a ⁻¹
(*) at 23 °C and 50 % R.H. (**) This value can only be determined on actual edge seal design and variable from edge seal design to edge seal design							

Suitable substrates for structural sealant bonding

The generic types of suitable substrates for adhesion to the structural sealants are:

- The float glass conform to EN 572-2.
- The thermally treated glass made from, conform to:
 - EN 1863 Glass in Building – Heat strengthened glass – Parts 1 and 2.
 - EN 12150 Glass in Building – Thermally toughened safety glass– Part 1 and 2.
 - EN 14179 Glass in Building – Heat soaked thermally toughened safety glass – Parts 1 and 2.
- The insulating glass units conform to EN 1279 Glass in Building – Insulating glass units – Part 1 to 6.
- The coated glass, conform to, with suitable inorganic coatings classified as A, S and B according to the European standard EN 1096 - Parts 1, 2 and 4. Other coatings meeting EN 1096 shall be removed along the structural sealant adhesion surface, except if their conformity has been assessed by means of tests.

Note: Opacified glass with resin must not be considered as suitable structural seal adhesion surface.

1.1.2 Structural sealant support frame (figure 1 to 5 Annex 3)

Framing profile: Glazing profiles
Opening light profile

The structural sealant support frame (8532) is made aluminum alloy conform to Table 2.

Table 2 – Aluminum alloy – Characteristics

Alloy	Metallurgic state	Mechanical characteristics
Designation		
EN 573-3	EN 515	EN 755-2
EN AW-6060	T5	

Table 3 – Anodizing characteristics of the structural sealant adhesion surface

Characteristics	Method	Criteria EOTA	Nominal value
Thickness	ETAG 002 § 5.2.2.2.1.	Mean minimum thickness : 15 µm	20 < ép. < 25
Sealing: Sealing degree Weight lost	ETAG 002 § 5.2.2.2.2	EN 12373-6 : < 30 mg/dm ²	< 30 mg/dm ²
Admittance à 1.000 Hz for a given thickness of 20 µm	ETAG 002 § 5.2.2.2.2.	EN 12373-5 : < 20 µS	< 20 µS
Stain test	ETAG 002 § 5.2.2.2.2.	EN 12373-4 < 2 on Qualanod scale	< 2

The anodizing of the structural adhesion surface profile reference 8532 is performed by the company FRANCANO INDUSTRIES (route de Pontailler - 21270 - TALNAY).

The anodized aluminum profile has been assessed as suitable adhesion substitute for the bonding.

1.1.3 Insulating glass unit

The UNIVERS 54 mm system is designed in such way that the IGU outer edge seal is a structural edge seal.

The IGU is manufactured in accordance with standards EN 1279-1 to 6.

The structural outer edge seal is a silicone sealant conform to ETAG 002 identified in table 1 (DC 3362 – IG 25 HM Plus). The calculation of the section of the structural edge seal is performed in accordance with ETAG 002 – Annex 2.

For each project, the IGU-s manufacturer shall deliver a technical file to his client as described in ETAG 002 § 8.3.2.4 - (vi): quality control on insulating glass units or a proof of recognized certification delivered by a third party and based on the same technical rules.

Dimensional tolerance on the IGU (length and width):

- IGU with a glass thickness ≤ 6 mm: ± 2 mm
- IGU with a glass thickness between 6 mm and 12 mm: ± 3 mm

Dimensional tolerance on the IGU double glazing (thickness):

- IGU with annealed glass, monolithic: $-0,4 / +1$ mm
- IGU having a laminated or tempered glass and thickness > 6 mm: $-0,8 / +1,2$ mm

Dimensional tolerance on the IGU triple glazing (thickness):

- IGU with annealed glass, monolithic: $-0,4 / +1,4$ mm
- IGU having a laminated or tempered glass and thickness > 6 mm: $-0,4 / +1,6$ mm

1.1.4 Cleaning product

The cleaning product that has to be used to clean the facade is the product EXTRAN 02 – MERCK dilution 2% in volume (chemically compatible with the structural sealants).

Other products may be used provide they are assessed for conformity to ETAG 002 § 5.1.4.2.4. – Cleaning product for façade.

1.1.5 Retaining devices (figure 6 and 7 Annex 3)

The retaining devices 8649 et 8650 are made of aluminum as per table 2.

Screws M5 x 8 hexagonal socket flat point are in stainless steel A2.

Retaining devices are means of retaining the glass to reduce danger in the event of bonding failure. The necessity of these accessories is to evaluate in function of the security specifications, the situation of the building and may be calculated in accordance with its working condition and the national regulation. Those devices may be calculated according to conventional calculations based upon the strength of material.

1.1.6 Mechanical self-weight support (figure 6 to 9 Annex 3)

Support of the glass relies on the use of setting blocks, which transfer the glass dead load to the mechanical self-weight support.

The mechanical self-weight support device ref. 8649, 8650, 8655 and 8656 are made of aluminum alloy as per table 2.

Screws M5 x 8 hexagonal socket flat paint are in stainless steel A2.

Those devices are designed to fulfilled the maximum deflection requirement of 0,5 mm (see § 5.1.4.3.1. ETAG 002)

Tableau 4 – Length of the mechanical self-weight devices – maximum load capacity

Mechanical self-weight devices	Length (mm)	Maximum bearing capacity (N)
8649 - 8655	100	550
8650 - 8656	100	550

1.1.7 Accessories

- Internal finishing sealant (figure 1 to 4 Annex 3)

The external finishing sealant is made of weather proofing silicone. This external finishing sealant is set up along the perimeter of the frame.

- Gasket (figure 1 to 4 Annex 3)

The gaskets are used to ensure the air and water tightness around frame.

Material: EPDM according to the EN 12365 standard.

- Adhesive spacer

The specific gasket ref. 8627 from HUTCHINSON is used as backer rod to the structural sealant. It sets the limits of the structural seal and limit displacement the glazing in place on the structural sealant support frame while injection and polymerisation of the structural sealant takes place.

This spacer is chemically compatible with the structural sealants identified in table 1.

- Setting and location blocks (figure 10 and 11 Annex 3)

The glazing dead load is transferred by setting blocks 8676 or 8677 from GOETTGENS.

Characteristics of the setting block:

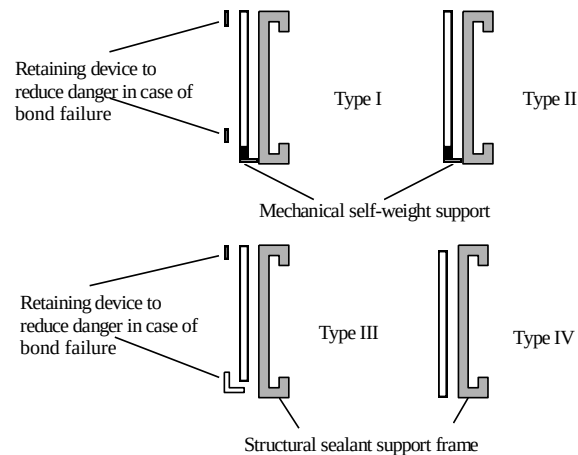
- Material: Polypropylene.
- Hardness: 100 shores.

The setting blocks are chemically compatible with the structural sealants and the outer edge seals identified in table 1.

2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

Structural sealant glazing kit (SSGK) for use as infill for façade or glazing roof. The structural sealant support frame is anchored to the façade structure in order to form a curtain walling or glazing roof respectively. The façade structure is not a part of the present ETA.

The UNIVERS 54 mm structural glazing system is type I or II as per ETAG 002 SSGK (see below).



The system is intended to be used in curtain walling or glazing roof for which essential requirements BWR2 Safety in case of fire, BWR3 Hygiene, health and environment, BWR4 Safety in use, BWR5 Protection against noise, BWR6 Energy economy and heat retention shall be fulfilled, and failure of the structural bond would cause risk to human life and/or considerable economic consequences.

The provisions made in this European Technical Assessment are based on the assumed working life of the SSGK of 25 years. The assumed working life of a system cannot be taken as a guarantee given by the producer, but are to be used as a means for selecting the appropriate product in relation to the expected economically reasonable working life of the works.

3. Performance of the product and references to the methods used for its assessment

The assessment of the fitness for use of the structural sealant glazing frame for the intended use in relation to the requirements for safety in case of fire, safety in use, hygiene, health and environment, protection against noise; energy economy and heat retention; in the sense of Essential Requirements 2 to 6 has been made in accordance with the "Guideline for European Technical Assessment for Structural Sealant Glazing Systems, the ETAG 002.

The performances of the Italian window are determined according to EN 14351-1+A2.

3.1. Mechanical resistance and stability (BWR1)

Not relevant.

3.2. Safety in case of fire (BWR2)

Reaction to fire: no performance determined. Structural sealant glazing system: Class F product according EC decision 2000/147/CE.

Resistance to fire: no resistance to fire claimed.

Behaviour in fire: no behaviour in fire performance claimed.

3.3. Hygiene, health and the environment (BWR3)

Air permeability: A*4

Water tightness: E*9A

Dangerous substances:

The manufacturer made a declaration of conformity to the Council Directive 76/769/EEC and its amendments.

In addition to the specific clauses relating to dangerous substances contained in this ETA, there may be other requirements applicable to the sealants (e.g. transposed European legislation and national laws, regulations and administrative provisions).

In order to meet the provisions of the EU Construction Product Regulation, these requirements need also to be complied with, when and where they apply.

3.4. Safety and accessibility in use (BWR4)

Impact test: no performance determined.

Wind resistance: V*C3

3.5. Protection against noise (BWR5)

No performance assessed.

3.6. Energy economy and heat retention (BWR6)

Determination of thermal insulation and susceptibility of condensation: by calculus method.

The calculation can be performed according to EN ISO 10077. As a function of the design and the glazing chosen for the SSGS kits, thermal modelling can be undertaken with various computer software packages. To use the results of these programs, it is necessary to ensure that they are at least two-dimensional and cover all the required parameters.

The commonly used values of the thermal conductivity (λ -value) of the materials used in the present SSGS kit are given in table 5 below.

Table 5 – Thermal conductivity (λ -value) of the components

Materials	λ -value (W/m.K)	Materials	λ -value (W/m.K)
Stainless steel	17	Silicone	0,35
Glass	1	Spacer PUR foam	0,078
EPDM	0,25	Aluminium	160

3.7. Sustainable use of natural resources (BWR7)

For sustainable use of natural resources no performance was investigated for this product.

3.8. Durability

Durability of fitness for use of the UNIVERS 54 mm system for the intended uses described at § 2, has been assessed in conformity to the EN 14351-1+A2. The wind load resistance (positive and negative) is 1 200 Pa after testing according to the EN 12211 on an opening part of 1 175 mm x 1 175 mm (High x Width).

In addition, the durability of the water tightness and air permeability is ensured by the installation of replaceable gaskets (see §1.1.7) and the durability of the heat transmission is ensured by the use of insulating glass units in accordance with §1.1.3.

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to Decision 96/582/EC (Decision of the Commission of 24 July 1996) published in the JOCE 254 of 8 October 1996 et modified by Decision 2001/596/EC (Decision of the Commission of 8 January 2001, L 209 of 2.8.2001, p. 33)¹, the systems of AVCP given in the following table apply:

Product	Intended use	System
Kit VEC	Types II	1
	Types I	2+

The system has been described in the Regulation 305/2011 Annex V.

Tasks and responsibilities are described in annex 1.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at the CSTB.

The control plan is given in Annex 2.

Issued in Marne-la-Vallée on 16th September 2019

The original French version is signed by

Stéphane GILLIOT

Head of section Façades, Coverings and Roofings
Department Envelope, Insulation and Flooring

¹ Decisions are published in the *Official Journal of the European Union (OJEU)*, see www.new.eu-lex.europa.eu/oj/direct-access.html.

Responsibilities

In the framework of this ETA for the structural sealant glazing frame, the facade makers are identified as being facade makers type B or type C (see below). Two or three manufacturing actors are involved:

- **The kit designer:** responsible for the design of the kit and its components. He is the ETA-holder.
- **Facade manufacturers:** several manufacturers who are responsible for assembling the kit components, produced by one or more suppliers (generally the kit designer, but possibly others (glass, sealant, etc), in accordance with the specifications of the kit designer. The facade makers put products on the market and have to obtain an EC certificate of conformity.

The facade makers produce the metal frames, using the profiles supplied by the kit designer.

The facade manufacturers type B have bonding equipment to perform the bonding work between the glazing product and the structural sealant support frame.

The façade manufacturers type C has no bonding facilities. A third actor is involved in the manufacturing process: the bonding workshop.

- **The bonding workshops (structural sealant appliers):** subcontractors of the facade makers performing the bonding works. The bonding workshop's FPC system is an important part of the FPC system that is under the responsibility of the EC Certificate holder (the facade makers). The bonding workshop cannot be EC certificate holder by itself. To make easier the acquisition of the EC certificate by the facade maker easier, the bonding workshops can obtain a specific certificate of the conformity of their FPC systems with ETAG 002 § 8.3.2.4. from a notified body.

1. Tasks of the manufacturer

The ETA holder of the kit is responsible for setting up suitable rules and instructions for facade makers and the bonding workshops (quality manual for kit assembling and bonding). The different actors are bound via contractual links* with the ETA holder to respect the kit holder rules and instructions which are an integral part of the FPC system.

The manufacturers (ETA holder, facade maker and bonding workshop) have a factory production control system in their plant and exercise permanent internal control of production. All the elements and provisions adopted by the manufacturer are documented in a systematic manner in the form of written policies and procedures. The production control systems ensure that the product is in conformity with the ETA.

***Note:** Those contractual links and their contents are described in the GNB-CPD SG05 document "Route to CE marking" August 2003.

UNIVERS 54 mm system	ANNEX 1 (1/3) of ETA-08/0032
Tasks and responsibilities	

1.1. Tasks of the ETA holder

The controls performed by the ETA holder include at least:

- Check on incoming materials:
 - Control of the profiles and accessories with the specifications.
 - Control of the suitability of each batch of anodized support profiles with all the structural sealants claimed in the ETA.

1.2. Tasks of the façade maker

The controls performed by the facade maker include at least :

- Check on incoming materials (framing profiles, glass products with control file from IGU supplier, sealants, gaskets, hardware).
- Control of the production in accordance to the ETA specification and the kit designer instructions.

The facade maker gives all the necessary information to the bonding workshop.

1.3. Task of the bonding workshop

The factory production control includes at least the controls defined in Table 10 – ETAG 002.

2. Task of the ETA holder or the assessment body: Initial Type Testing

For initial type testing, the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases, the necessary initial type testing has to be agreed between the Centre Scientifique et Technique du Bâtiment and the notified body involved.

For System 1, this work is validated by the assessment body for Certification of Conformity purposes.

For System 2+, the work should be taken over by the ETA holder for Declaration of Performance purposes.

UNIVERS 54 mm system	ANNEX 1 (2/3) of ETA-08/0032
Tasks and responsibilities	

3. Tasks of the Technical Assessment Body

3.1 Identifying the manufacturing routes and the manufacturing plans

The notified body shall verify and assess that:

- All the manufacturing actors in annex 1 § Responsibilities are identified for each manufacturing steps.
- Their respective responsibilities are determined in the required contractual links.
- The identification allows the traceability of all productions covered by the present ETA.

The Certificate holder is responsible for enabling the notified body to keep its information up to date.

3.2 Assessment of the factory production control system-initial inspection only or initial inspection and continuous surveillance

Assessment of the FPC is the responsibility of an assessment body.

An assessment must be carried out on the required manufacturing steps of each manufacturing plant to demonstrate that the factory production control is in conformity with the ETA and any subsidiary information. This assessment is based on an initial inspection and/or on analysis of the relevant document of the different manufacturing actors' plants (Kit designer; facadier (-s) and bonding workshops).

Subsequently continuous surveillance of factory production control is necessary to ensure continuing conformity with the ETA. This continuous surveillance is to be in conformity with to ETAG 002 chapter 8.3 at each identified manufacturing plant.

3.3 Certification

The assessment body will issue Certificate(s) of Conformity of the product (for System 1) and Certificate (-s) of the Factory Production Control System (for System 2+).

4. CE marking

4.1 General

The CE marking shall be affixed on each structural seal support frame or on accompanying document. The symbol "CE" shall be accompanied by the following information:

- Identification number of the certification body.
- Name of identifying mark of the facadier and manufacturing plant.
- The last two digits of the year in which the CE marking was affixed.
- "ETAG 002 Structural sealant glazing system".
- Number of European Technical Assessment.
- Number of the EC certificate of conformity.
- Indication of the type.

UNIVERS 54 mm system	ANNEX 1 (3/3) of ETA-08/0032
Tasks and responsibilities	

1. Manufacturing

1.1. Structural sealant support frames

The structural sealant support frame is manufactured by the façade makers according to the ETA designer rules and instructions.

The profiles are assembled by corners to screw and/or to crimp to form the structural sealant support frame:

- The dimensional tolerances on the structural sealant support frame are ± 1 mm.
- Principal operation is the assembling of the structural sealant support frame profile.

The opening lights are realized with the frame profile: 8556.

1.2. Bonding of the glazing

This work is performed in a workshop heated and maintained free from dust.

This work is performed in a workshop heated and maintained free from dust.

The maximum storage duration of the sealants are:

DOWSIL 3362 DOWSIL 993 DOWSIL 895	]	12 months after the manufacturing date in its unopened packaging, when stored below 30° C
TREMCO SG 90	]	18 months
TREMCO SG 99	]	Base: 18 months – Catalyzer: 12 months
IG 25 HM Plus	]	12 months stored below 25°C

Principal stage of assembling:

- Cleaning of the structural sealant adhesion surfaces with the relevant cleaning agent and eventual application of primer as determined by the structural sealant manufacturer.
- Setting in place of the spacers.
- Setting in place of the glazing.
- Setting in place of the setting blocks.
- Extrusion of the structural sealant.
- Smoothing the sealants beads.
- Setting of the mechanical self-weight support in conformity with the manufacturer.

UNIVERS 54 mm system	ANNEX 2 (1/3) of ETA-08/0032
Assumptions under which the fitness of the product(s) for the intended use was favourably assessed	

The frame is immediately set on a rack. The sealant curing is then allowed without any movement between the glass and the structural support frame during the time prescribed § 1.1.1 (Table 1).

Nevertheless earlier transportation on work site is possible if the following two conditions are respected (see ETAG Table 10 checks during the production): the tested H – samples give the following result: 100% cohesive rupture and breaking stress $\geq 0,7$ MPa.

2. Installation and design rules

2.1. Design rules

Structural seals design

The structural seal is to be calculated according to annex 2 of the ETAG 002 and according to national design rules with the design value given in the chapter 2.1.1 respecting the following conditions the minimum dimensions of the structural seal are $e \geq 6$ mm, $h_c \geq 6$ mm, $r \geq 6$ mm.

For the definition of e , h_c , r , see ETAG 002 SSGK, annex 2.

Design rules for the frames

The frames are designed following the specifications of EN 13830 or EN 14351-1+A2 and national provisions.

Drainage

The rebate is drained by interrupting the lip of the seals ref. 8625 and 8626 at the passage of the glazing wedge supports ref. 8649 and 8650.

Waterproofness

The sealing between the frame and the opening is ensured by means of the double barrier composed of gaskets ref. 5566.

Maximum dimensions

Maximum dimensions are determined as following:

- The air and water tightness and wind performance of the structural glazing system, determined case by case following relevant standards.
- The results of tests following regulations of the opened structural sealant support frames according relevant standards.

Installation – Specifications on the façade structure

The facade structure shall comply with the specifications of EN 13830 and national set up rules.

UNIVERS 54 mm system	
Assumptions under which the fitness of the product(s) for the intended use was favourably assessed	ANNEX 2 (2/3) of ETA-08/0032

2.2. Maintenance and repair

Repair

All damages noticed on a structural sealant must be repaired as follows:

- dismantling of the structural sealant support frame,
- replacement by a new unit in reserve or,
- repair of the damaged unit in workshop following the procedure described in § 1.2 after removing of the structural sealant.

Maintenance

- Glass

Current maintenance: cleaning up the glazing with clear water follow by wiping with chamois leather.

Dirt cleaning: when necessary, the cleaning product R40 or MIBC can be used.

For any other cleaning product, the compatibility with the kit shall be assessed as required by the ETAG 002.

- Aluminum

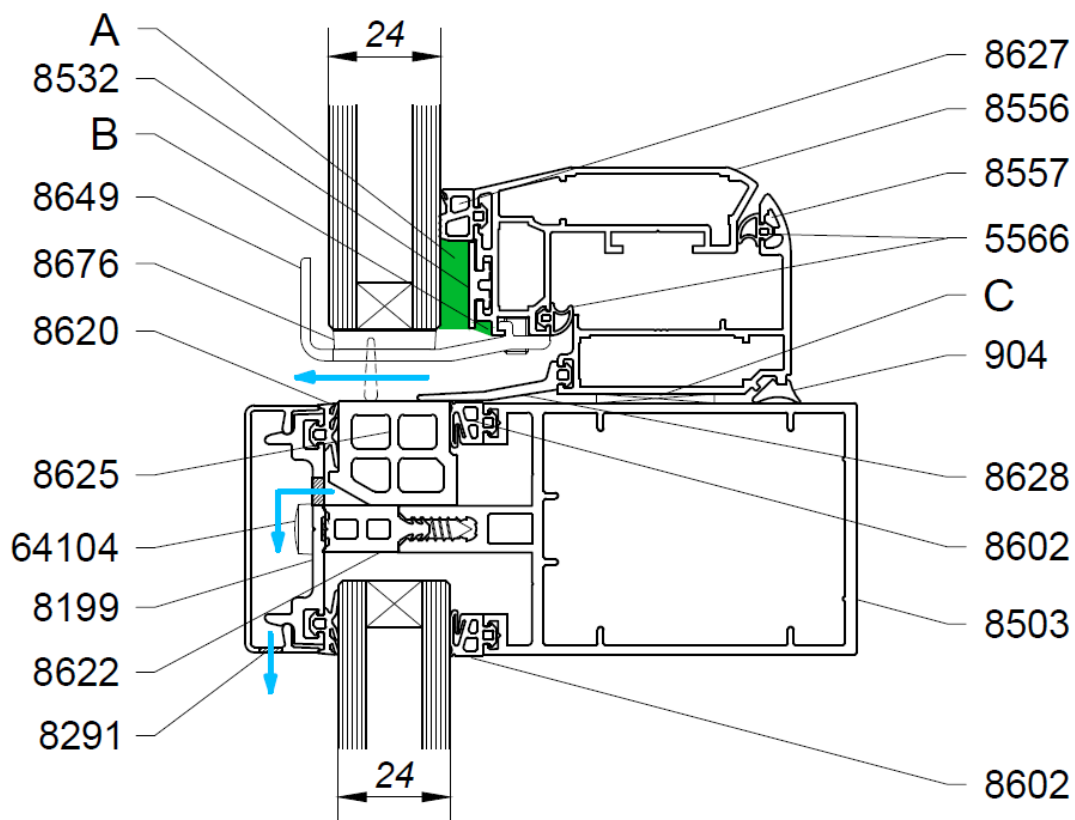
Current maintenance: cleaning up the aluminum profile with wet sponge or with soapy water follow by rinsing with clear water.

Dirt cleaning: cleaning up the aluminum profile with water add to wet agent; follow by rinsing with clear water and wiping with soft and absorbent duster.

2.3. Responsibilities

It is the responsibility of the facade maker to conform to the here above-mentioned requirements and to affix the CE marking on their production.

UNIVERS 54 mm system	
Assumptions under which the fitness of the product(s) for the intended use was favourably assessed	ANNEX 2 (3/3) of ETA-08/0032

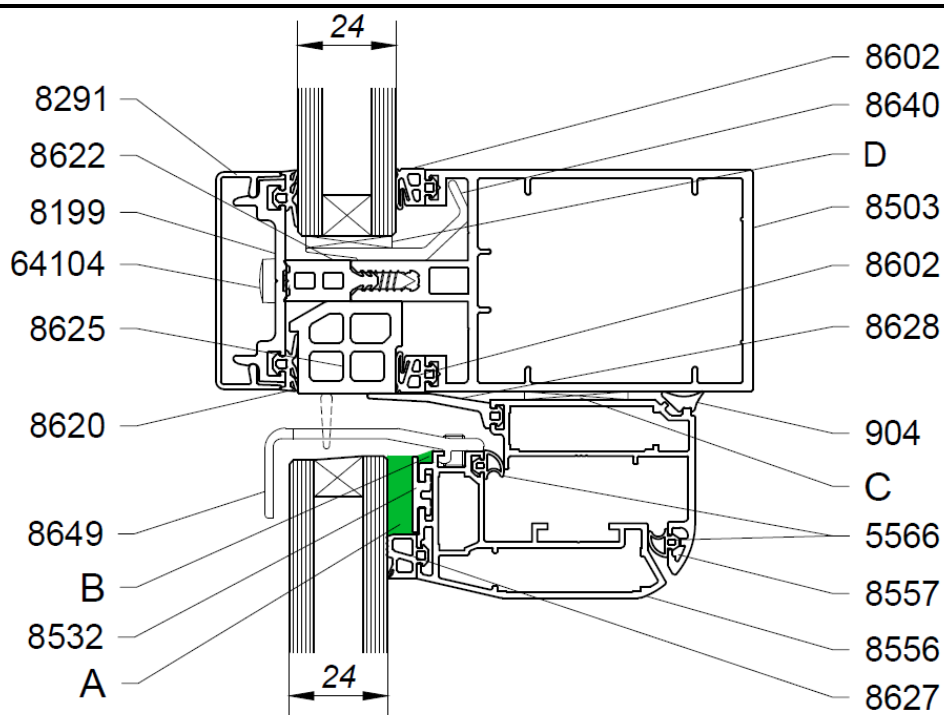


C	2-mm wooden wedge
B	Watertightness with silicone
A	Structural silicone sealant
64104	TCB 12 x 32
8676	Glazing block
8649	Glazing support for italian opening with safety device glass = 24 mm
8628	Cover gasket
8627	Structural glazing gasket
8625	24-mm spacer gasket
8622	16-mm thermal break gasket
8620	3-mm outer gasket
8602	7-mm mullion gasket
8557	Design fixed frame for italian window
8556	Design opening frame for italian window
8532	Gluing support
8503	Mullion 98 mm
8291	Cover cap
8199	Pressure plate
5566	Rabbit gasket
904	4-mm inner gasket
No.	Designation

UNIVERS 54 MM

Low section – For Italian window – 24 mm glass

**ANNEXE 3 (1/11)
de l'ETA-08/0032**

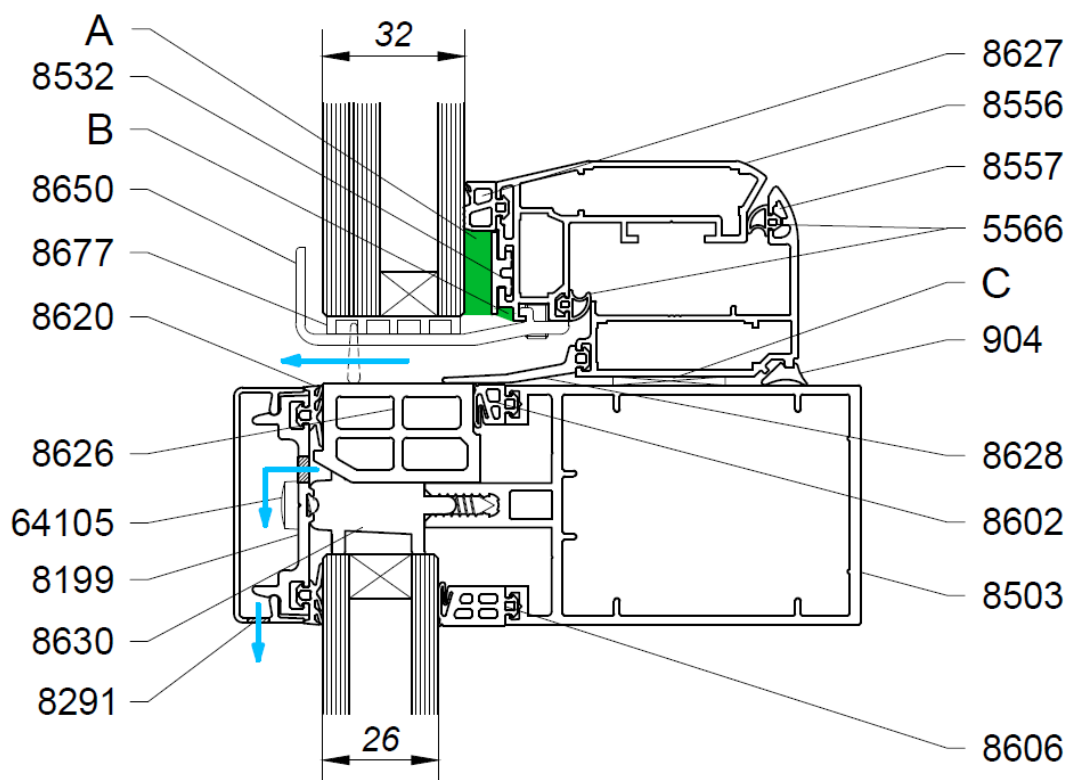


D	3-mm wooden wedge
C	2-mm wooden wedge
B	Watertightness with silicone
A	Structural silicone sealant
64104	TCB 12 x 32
8649	Glazing support for italian opening with safety device glass = 24 mm
8640	Glazing support for mullion
8628	Cover gasket
8627	Structural glazing gasket
8625	24-mm spacer gasket
8622	16-mm thermal break gasket
8620	3-mm outer gasket
8602	7-mm mullion gasket
8557	Design fixed frame for italian window
8556	Design opening frame for italian window
8532	Gluing support
8503	Mullion 98 mm
8291	Cover cap
8199	Pressure plate
5566	Rabbit gasket
904	4-mm inner gasket
No°	Designation

UNIVERS 54 MM

Top section – For Italian window – 24 mm glass

ANNEXE 3 (2/11)
de l'ETA-08/0032

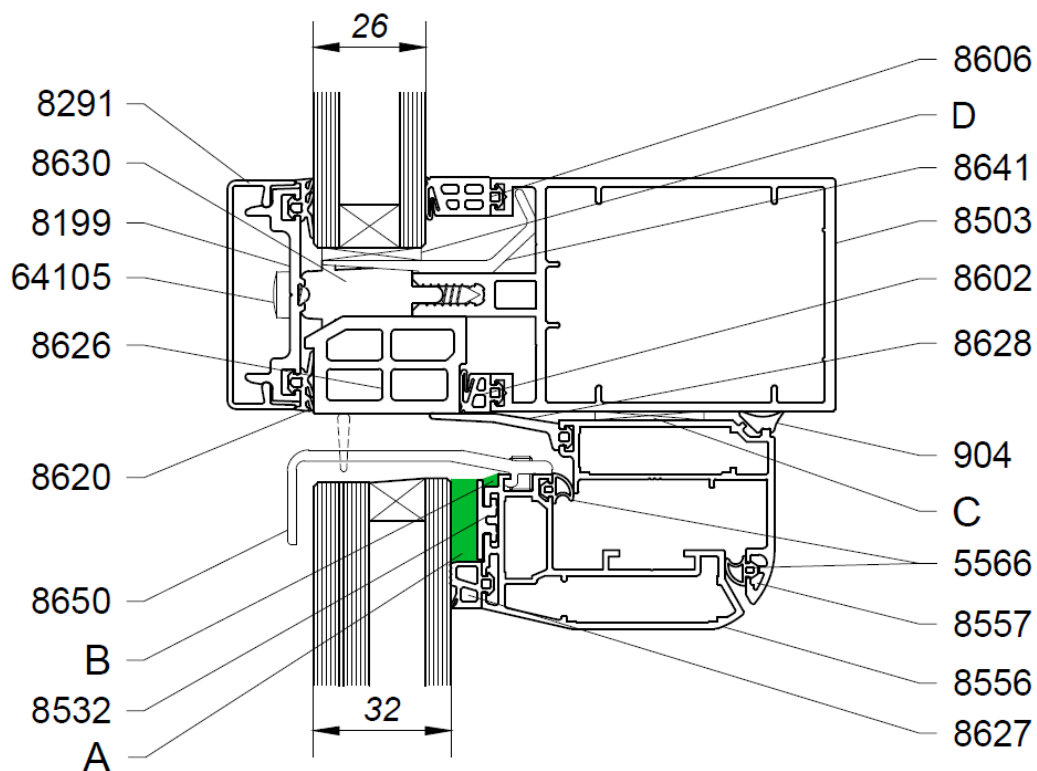


C	2-mm wooden wedge
B	Watertightness with silicone
A	Structural silicone sealant
64105	TCB 12 x 45
8677	Glazing block
8650	Glazing support for italian opening with safety device glass = 32 mm
8628	Cover gasket
8627	Structural glazing gasket
8626	34-mm spacer gasket
8630	26-mm thermal break gasket
8620	3-mm outer gasket
8602	7-mm mullion gasket
8606	15-mm mullion gasket
8557	Design fixed frame for italian window
8556	Design opening frame for italian window
8532	Gluing support
8503	Mullion 98 mm
8291	Cover cap
8199	Pressure plate
5566	Rabbit gasket
904	4-mm inner gasket
No.	Designation

UNIVERS 54 MM

**ANNEXE 3 (3/11)
de l'ETA-08/0032**

Low section – For Italian window – 32 mm glass

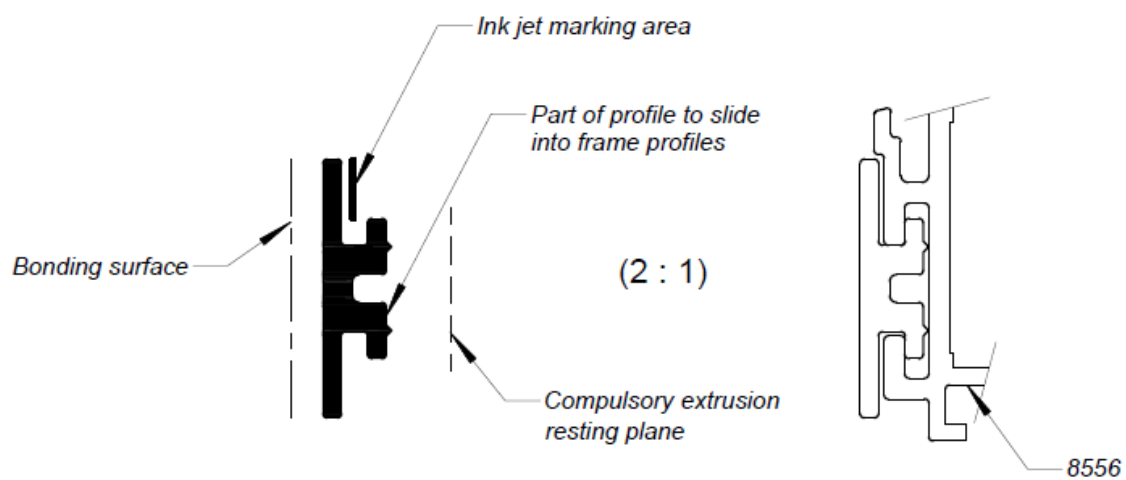
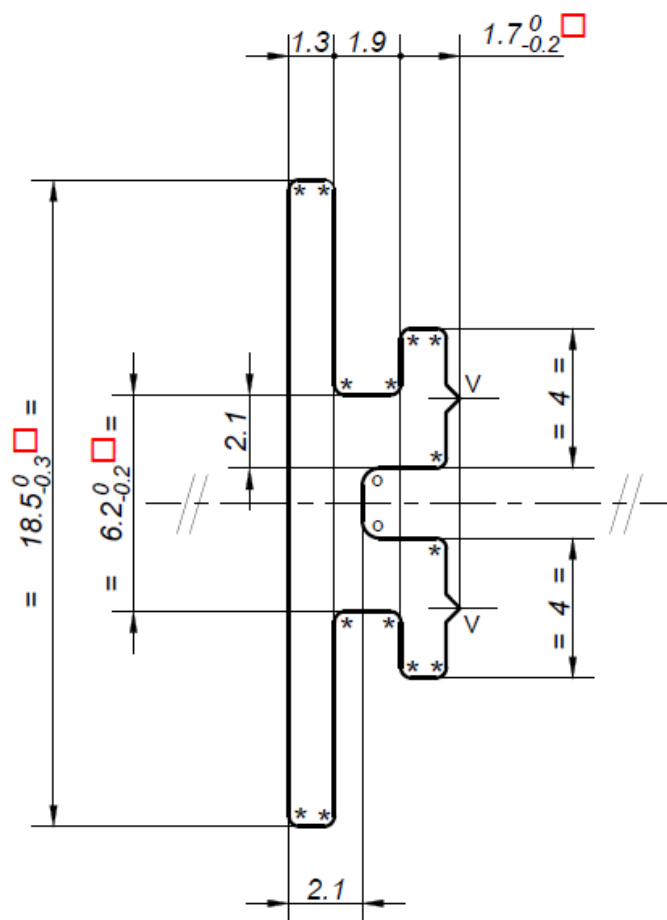


D	3-mm wooden wedge
C	2-mm wooden wedge
B	Watertightness with silicone
A	Structural silicone sealant
64105	TCB 12 x 45
8650	Glazing support for italian opening with safety device glass = 32 mm
8641	Glazing support for mullion
8628	Cover gasket
8627	Structural glazing gasket
8626	34-mm spacer gasket
8630	26-mm thermal break gasket
8620	3-mm outer gasket
8602	7-mm mullion gasket
8602	15-mm mullion gasket
8557	Design fixed frame for italian window
8556	Design opening frame for italian window
8532	Gluing support
8503	Mullion 98 mm
8291	Cover cap
8199	Pressure plate
5566	Rabbet gasket
904	4-mm inner gasket
No°	Designation

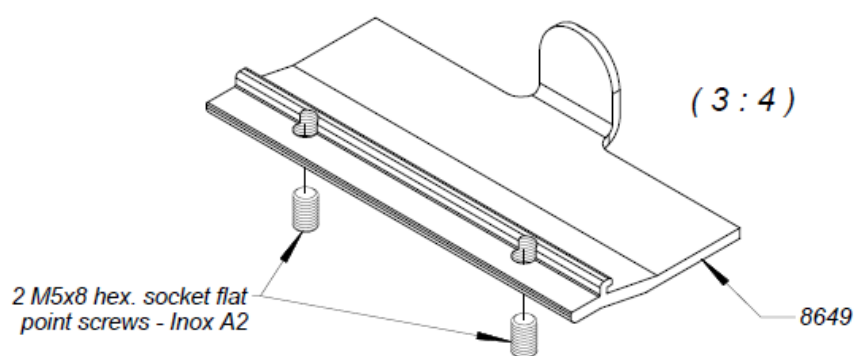
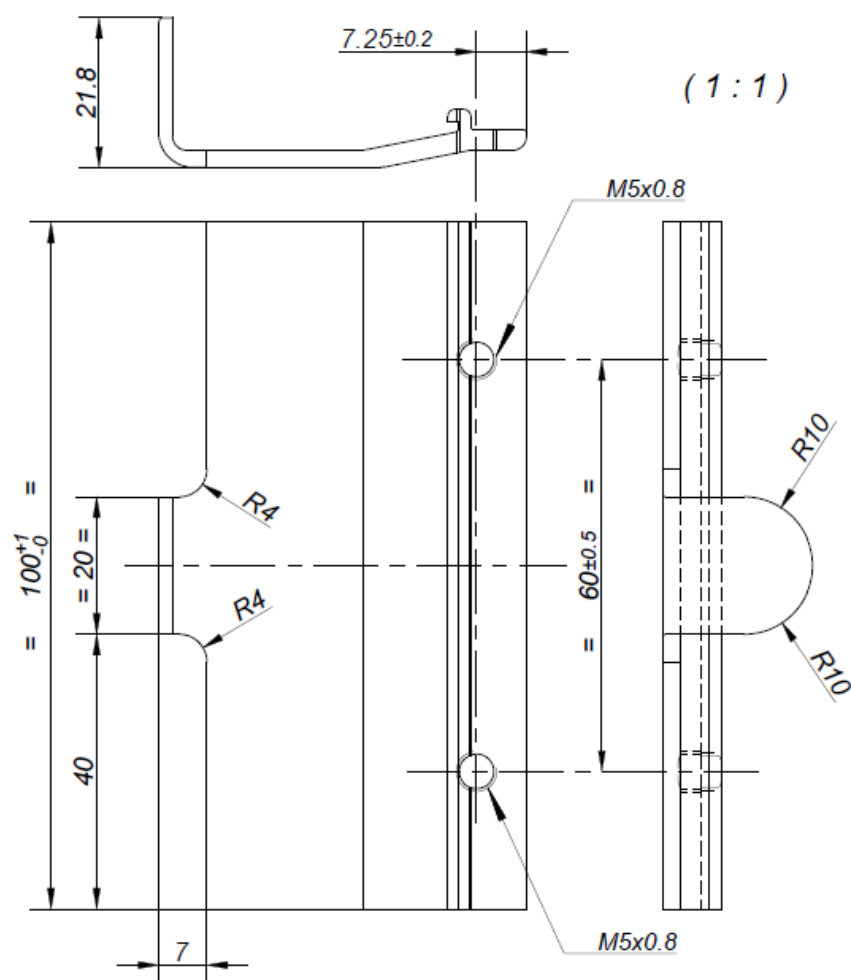
UNIVERS 54 MM

**ANNEXE 3 (4/11)
de l'ETA-08/0032**

Top section – For Italian window – 32 mm glass



UNIVERS 54 MM	ANNEXE 3 (5/11) de l'ETA-08/0032
Sealing Support - 8532	

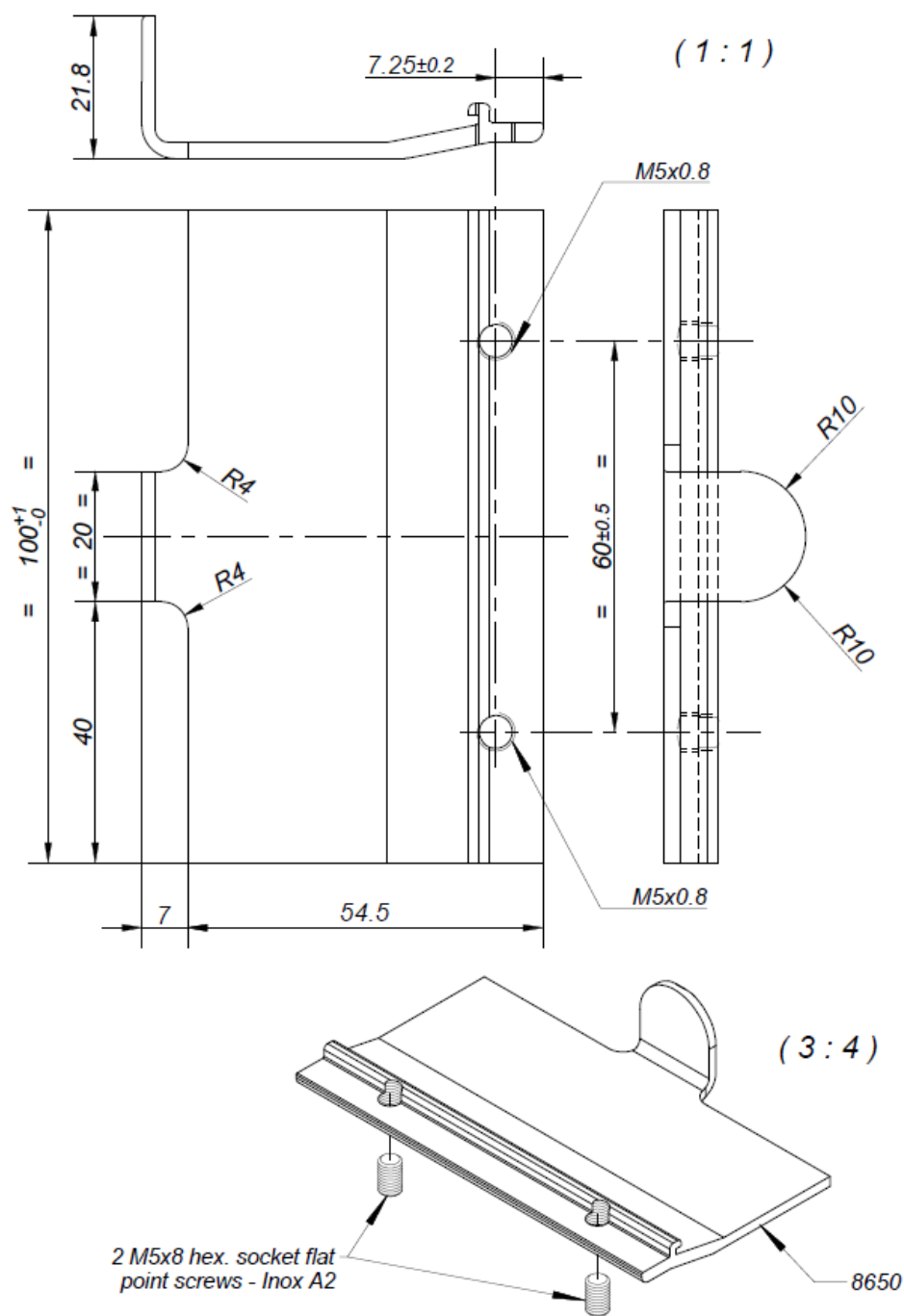


TO CUT AND MACHINE FROM PROFILE NO. 8649-1

UNIVERS 54 MM

ANNEXE 3 (6/11)
de l'ETA-08/0032

Glazing support for Italian opening with safety device – 24 mm glass

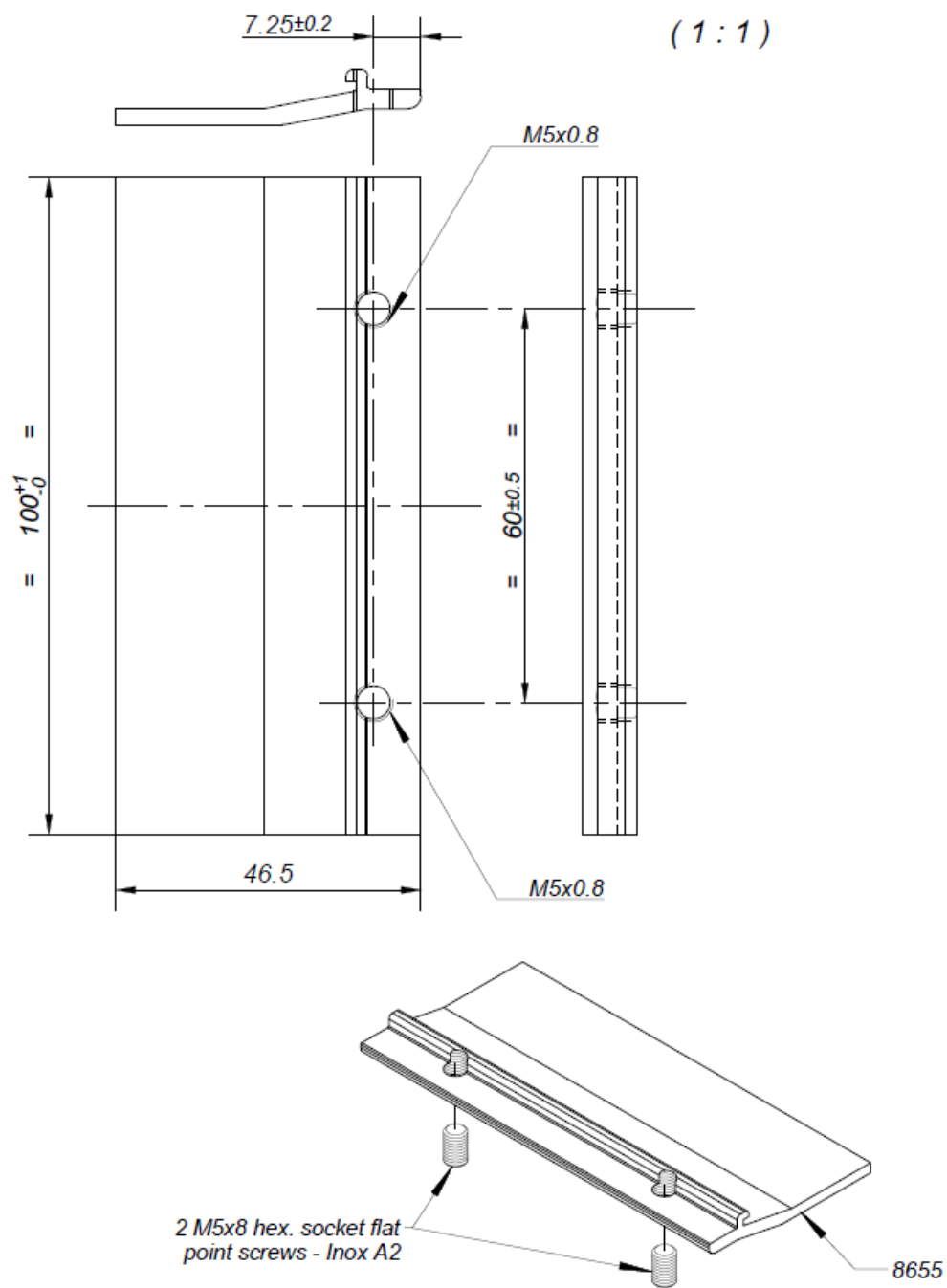


TO CUT AND MACHINE FROM PROFILE NO. 8650-1

UNIVERS 54 MM

Glazing support for Italian opening with safety device – 32 mm glass

ANNEXE 3 (7/11)
de l'ETA-08/0032

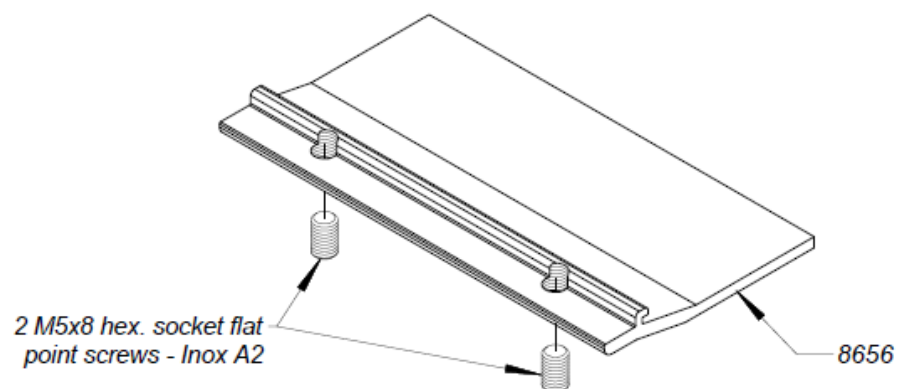
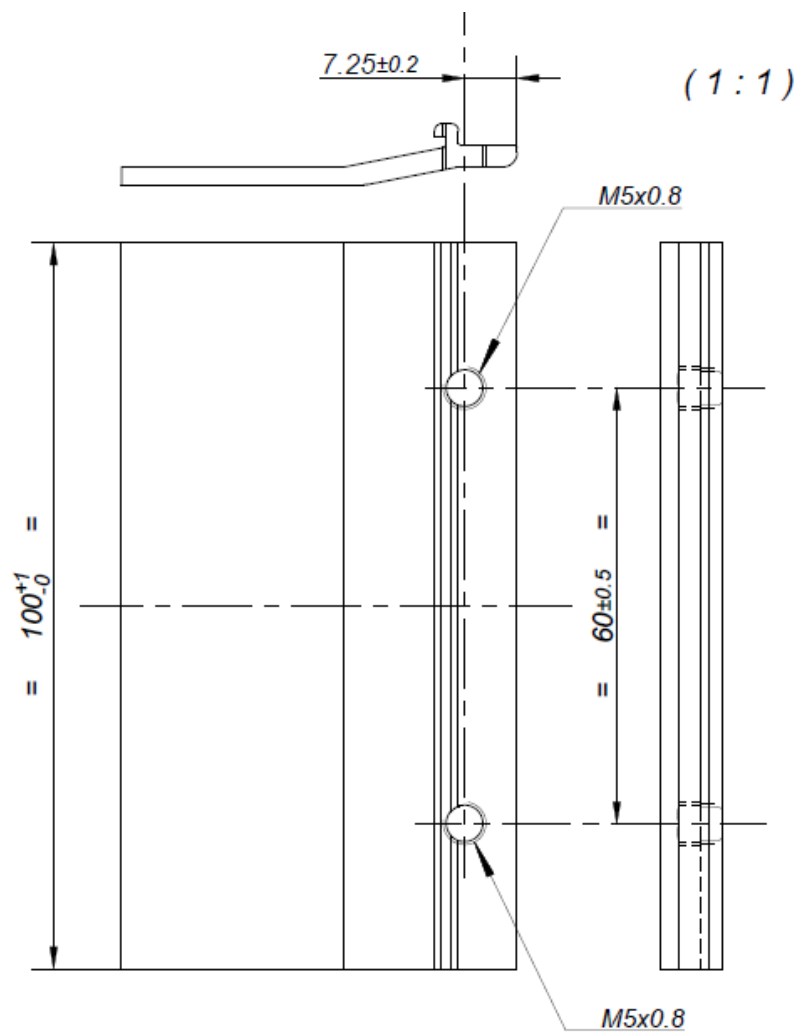


TO CUT AND MACHINE FROM PROFILE NO. 8649-1 OR 8655-1

UNIVERS 54 MM

Glazing support for italian opening – 24 mm glass

ANNEXE 3 (8/11)
de l'ETA-08/0032

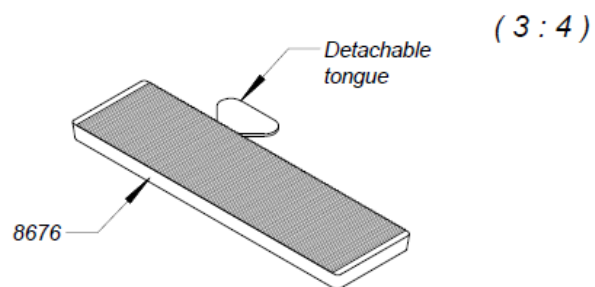
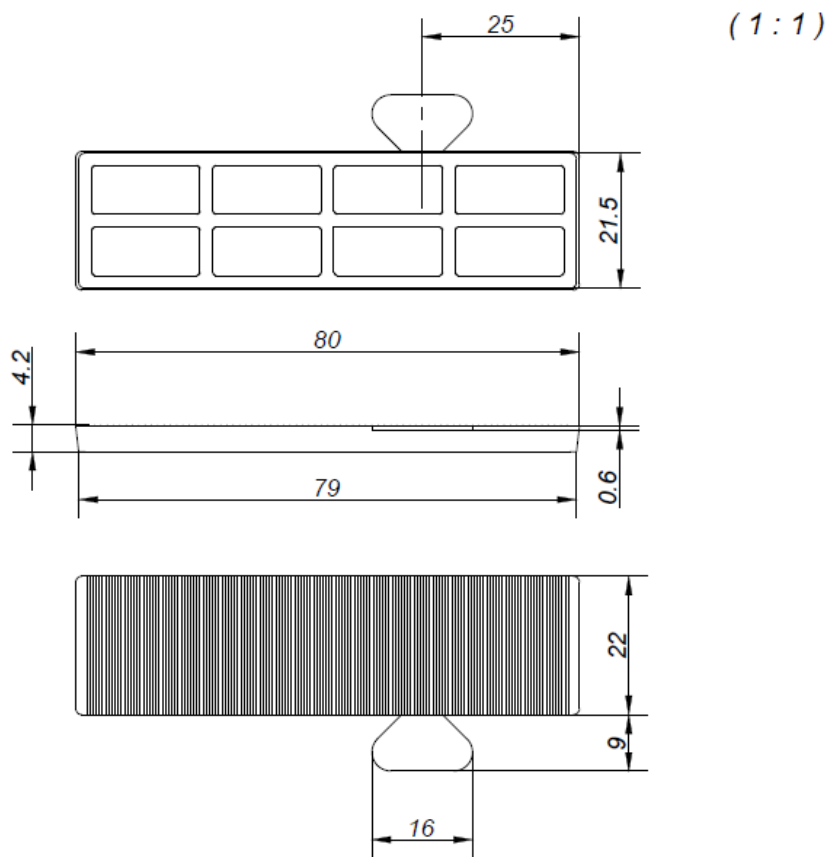


TO CUT AND MACHINE FROM PROFILE NO. 8650-1

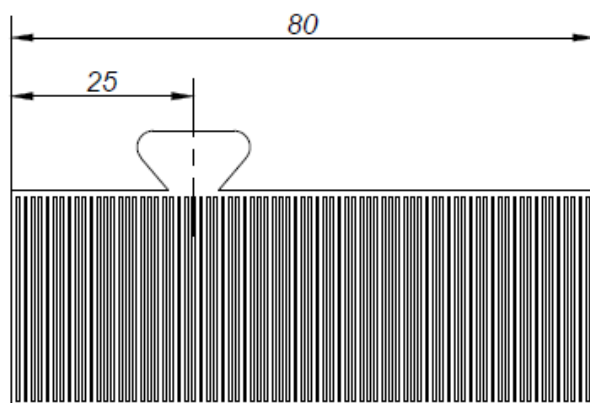
UNIVERS 54 MM

Glazing support for Italian opening – 32 mm glass

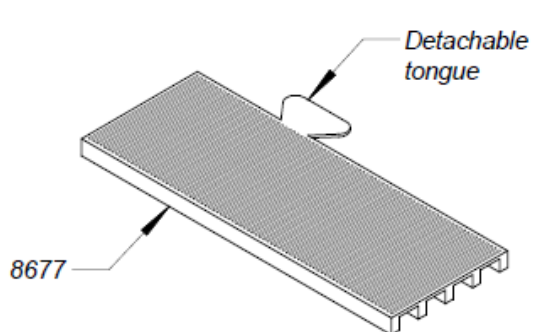
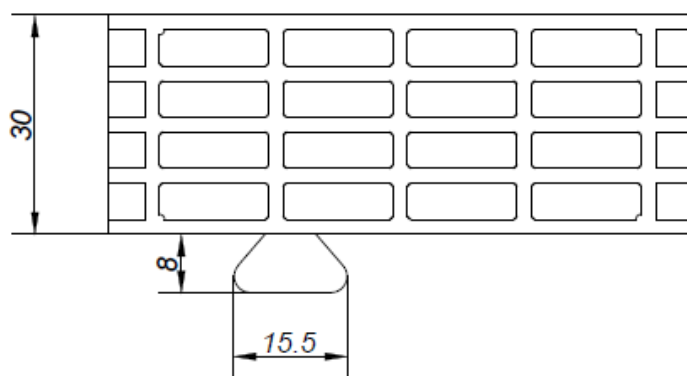
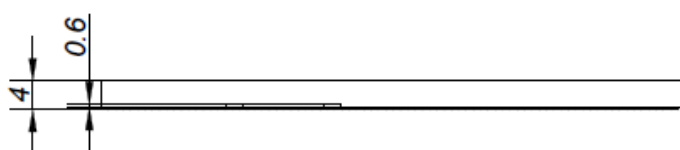
ANNEXE 3 (9/11)
de l'ETA-08/0032



UNIVERS 54 MM	ANNEXE 3 (10/11) de l'ETA-08/0032
8676 – Separating bloc	



(1 : 1)



(3 : 4)

UNIVERS 54 MM

ANNEXE 3 (11/11)
de l'ETA-08/0032

8677 – Separating bloc