
CERTIFICATE OF APPROVAL

No CF 5139

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

ALUPROF S.A.

Ul. Warszawska 153, 43-300 Bielsko-Biala, Poland
Tel: +48 33 891 53 00

Have been assessed against the requirements of the Technical Schedule(s)
denoted below and are approved for use subject to the conditions
appended hereto:

CERTIFIED PRODUCT

Aluminium Curtain Walling
SystemsType:
MB[®] SR50 EI
MB[®] SR50N EI
MB[®] SR50N EI EFEKT
for Glazed Curtain Walls, Screens
and Roof Glazing including internal
and external single and double leaf
MB 78EI fire rated doors and single
and double leaf sliding automatic MB
78EI DPA fire rated doors

TECHNICAL SCHEDULE

TS25 Fire Resistant Glass,
Glazing Systems and Materials

Signed and sealed for and on behalf of CERTIFIRE



Sir Ken Knight
Chairman - Management Council
Page 1 of 29

Issued: 15th January 2014
Valid to: 14th January 2019



CERTIFICATE No CF 5139 ALUPROF S.A.

ALUPROF[®] Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT for glazed no load-bearing internal and external fire walls and roof glazing, including internal and external single leaf and double leaf MB 78EI fire rated doors and single leaf and double leaf sliding automatic MB 78EI DPA fire rated doors

This Certificate of Approval relates to the contribution to fire resistance of the ALUPROF aluminium framing systems type Aluprof MB[®]-78 EI when used in the above applications as defined in BS 476: Part 22: 1987, EN 1364-1, and EN 1634-1: subject to the undermentioned conditions.

Application	Fire Resistance Performance Integrity & insulation (minutes)	Page No.
Configurations for Aluminium Framing Systems Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT	N/A	8
Aluminium Framing Systems Type MB [®] SR50 EI and MB [®] SR50N EI showing cross sections of transoms and mullions	30 and 60	9
Aluminium Framing Systems sections Type MB [®] SR50N EI EFEKT showing cross sections of transoms and mullions	60	10
Aluminium Framing Systems sections Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT showing cross sections of fold in/fold out joints	30	11
Aluminium Framing Systems sections Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT showing cross sections of fold in/fold out joints	60	12
Aluminium Framing Systems sections Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT showing cross sections of i) in a fire rated curtain wall, ii) sloped glazing and iii) fire and non-fire rated curtain wall joints	N/A	13
Non Transparent Panels for Glazing into Aluminium Framing Systems Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT	30 and 60	14
System Parts for Aluminium Framing Systems Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT	N/A	15-22
Sealants, Glues and Cleaning Agents for Aluminium Framing Systems Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT	N/A	23
Bracket cross sections for Aluminium Framing Systems Type MB [®] SR50 EI, MB [®] SR50N EI and MB [®] SR50N EI EFEKT	N/A	24-26
List of Approved System Suppliers	N/A	27

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ALUPROF[®] Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT for glazed no load-bearing internal and external fire walls and roof glazing, including internal and external single leaf and double leaf MB 78EI fire rated doors and single leaf and double leaf sliding automatic MB 78EI DPA fire rated doors

These products are approved on the basis of:

- a) Initial type testing
- b) A design appraisal against Technical Schedule TS25
- b) Inspection and surveillance of factory production control
- c) Product surveillance under BS EN ISO 9001: 2008
- d) Audit Testing in accordance with Technical Schedule TS25

Note 1: This Certificate of Approval must be read in conjunction with CERTIFIRE Technical Schedule TS25, Fire Resistant Glass, Glazing Systems and materials.

Note 2: The Aluprof MB[®]-78 EI system for internal or external doors can be installed in internal or external Aluprof MB[®]-SR50EI curtain wall system of at least the same fire. The doors can be externally hinged, single and double leafed, and be glazed with fire resistant glass or opaque infill panels.

Note 3: The Aluprof MB[®] SR50 EI system can be used within or form the entire fire resistant internal or external walls. They are made up from a kit of products covering aluminium profiles, thermal barriers, aluminium pressure plates and caps, connectors, gaskets, expanding and fire protection inserts, stainless aluminium elements, sealing element, materials and glues, silicate cement boards and spacers, plasterboards, pane pads, glass panes and opaque infill panels to provide the necessary fire resistance. In all cases the screens can be installed either upright or at an angle of $\pm 15^{\circ}$ from the vertical without compromising the fire resistance performance.

Note 4: The technical properties of the curtain walls and screens such as values of static loading, wind loading, shock, soft and hard body impact, thermal resistance the wide ranging possibilities for interchangeability and connections of the various parts of the screens can also be confirmed directly with **ALUPROF S.A.**

This approval relates to ongoing production. Product and/or its immediate packaging is identified with the manufacturer's name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application when appropriate.

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Other Information

The design appraisal for ALUPROF aluminium framing systems type ALUPROF MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT has been made on the basis of Technical Schedule TS25 and therefore this Certificate of Approval relates to the contribution to fire resistance for ALUPROF aluminium framing systems type ALUPROF MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT when used in applications as defined in BS 476: Part 22:1987.

However, ALUPROF aluminium framing systems type ALUPROF MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT have been extensively tested against EN 1364-1, and EN 1634-1 when used for:

- Internal and external fire walls as defined in EN 1364-1 and for internal and external fire doors as defined in EN 1634-1. These products have been classified according to EN 13501-2+A1:2010 for fire resistance periods of EI30, EI30(o↔i), EI60 and EI60(o↔i) (dependent on system).
- single leaf and double leaf sliding automatic doors as defined in EN 1634-1. These products have been classified according to according to EN 13501-2+A1:2009 for fire resistance periods of E30-C5, EI30-C5 and EW30-C5 (dependent on system).
- loadbearing floors and roofs as defined in EN 1365-2:2002. These products have been classified according to according to EN 13501-2+A1:2010 for fire resistance periods of REI 20/RE 30

Note: the fire resistance class of doors with insulation performance is designated I₂ according to EN 13501-2+A1:2009. In the case of doors with a threshold and with a rebate gasket or without a threshold but with an automatic threshold seal, they may also meet smoke control classes Sa and Sm according to EN 13501-2+A1:2009.

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Product description

The MB® SR50 EI / MB® SR50N EI mullion-transom system for fire-resistant walls can be used for the construction of internal or external fire walls including single leaf and double leaf doors and for single leaf and double leaf sliding automatic doors for fire resistance performance of up to 60 minutes according to BS 476 Part 22:1987, EN 1364-1, and EN 1634-1, as well as glazed roof coverings for fire resistance performance of 30 minutes according to BS 476 Part 21:1987 and EN 1365-2. The system has also been determined as 'non-fire propagating' and may be used for the purpose of building smoke-proof constructions.

The construction of the system is based on a load-bearing grid structure composed of vertical profiles (mullions) and horizontal profiles (transoms) constructed from box-shape sections with a characteristic width 50 mm. The profiles of mullions and transoms are suitably connected with each other and form an aluminium grid, which is installed to the building structure with suitable brackets.

In order to obtain fire resisting aluminium profiles, mullions and transoms have been equipped with special fire resistant inserts. A fire resistant insert consists of a special-shape aluminium profile, fulfilling the function of reinforcement, and covered with insulation made from fire resisting materials. This design of the construction makes it possible to use standard mullion and transom profiles in the MB® SR50 / MB®SR50N system. This allows significantly enhanced cost efficiency of the whole construction and ensures identical appearance to the profiles of the MB® SR50 / MB® SR50N system.

The MB® SR50N EI construction utilizes mullions ranging from 85-225 mm in depth and transoms ranging between 69.5-189.5 mm. The system provides for the possibility of overlapping connections between transoms and mullions, which enables efficient water deflection and proper ventilation of the inter-pane space. In order to achieve optimal thermal and acoustic insulation performance the system contains a continuous thermal break (insulator) constructed from "HPVC" material and profiled EPDM glazing gaskets.

Glass panes or glazing panels are fitted in glazing grooves, shaped from mullion and transom profiles and containing a clamping strip. Additionally, a special expanding tape has been applied in the glazing grooves of the mullions and transoms. A clamping strip is fixed to the load-bearing sections with a metric screw and a stainless steel washer. Such a system of glazing protects fire resistant glass panes or other glazed infills from falling out of the frame during fire. In the case of an angular wall, special gaskets are also applied.

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The wall of the MB[®] SR50 EI / MB[®] SR50N EI system should be constructed in accordance with working design, prepared individually for each project. Subject to the system documentation and structural analysis, the design should specify aluminium profiles for mullions and transoms, accessories to fasten mullions to the structure of the building and transoms to mullions and a layout of points where the construction of the wall is to be fixed to the building construction.

The design should also take into account all other materials and elements of the wall, details of connections and sealing between wall elements and the building construction, ventilating method and drainage of the wall.

While taking into account requirements connected with the function and location and geometry of the building, the wall should be designed in accordance with applicable standards.

Allowable height of a curtain wall is a derivative of resistance-related parameters, ensuing from the structural analysis. However, at every floor the structure should be divided with vertical thermal expansion joints. Allowable spacing and span of load-bearing profiles, based on assumed structural analysis diagram, can be determined from the structural analysis of construction and dimensions of glazed panes and glazed infills. The curtain wall is not restricted in its length, providing the horizontal expansion joint has been applied.



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Fire Resisting Glass Panes

The aluminium framing systems type ALUPROF MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT are approved for the inclusion of glazed apertures.

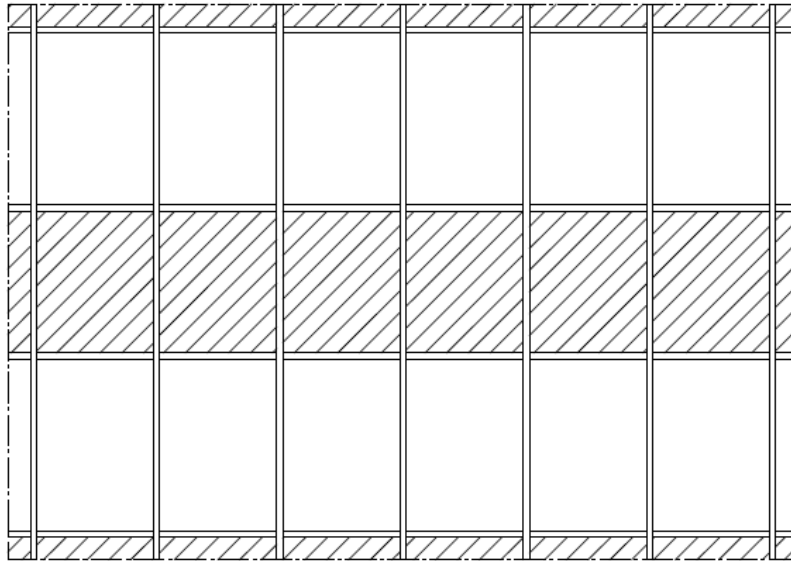
Any CERTIFIRE approved fire resisting glass may be glazed subject to the limitations contained in the appropriate glass Certificate.

Fire resisting glass panes which are not covered by CERTIFIRE Certificates may be glazed into aluminium framing system type ALUPROF MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT as described in official fire test reports held on file by **Aluprof S.A.**

A handwritten signature in black ink, appearing to be "K. Smith".

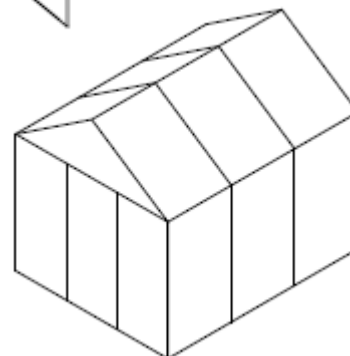
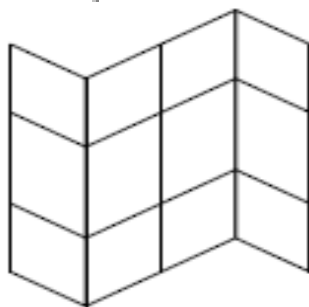
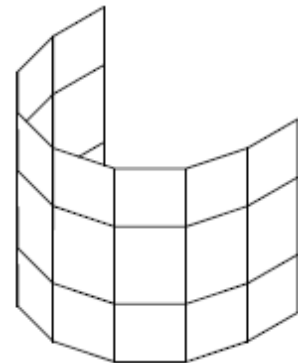
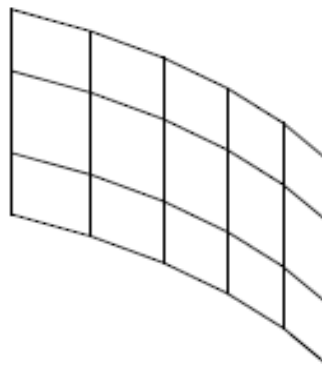
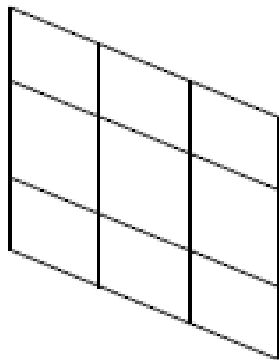
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Configurations for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT



System limitations for mullion-transom standard curtain wall:

1. Maximum glass loading is up to 3kN per transom
2. Standard transom span is up to 2m

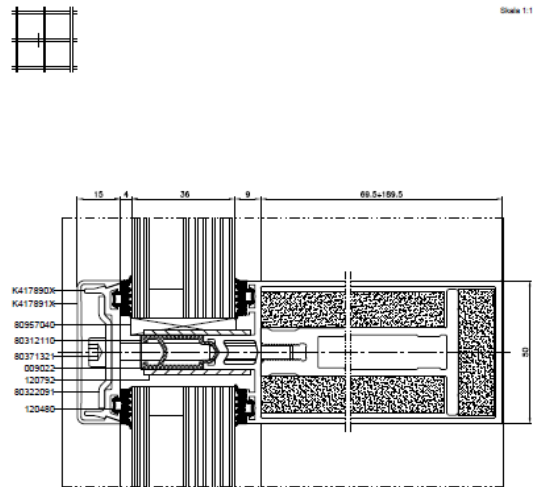
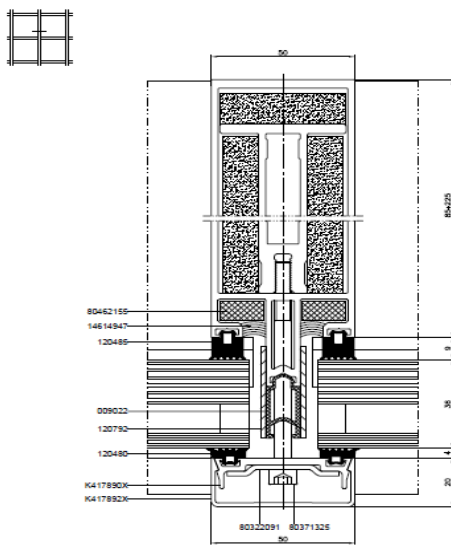


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Sections of Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT - examples

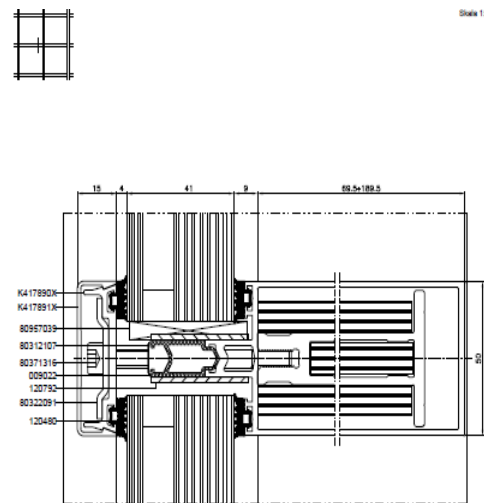
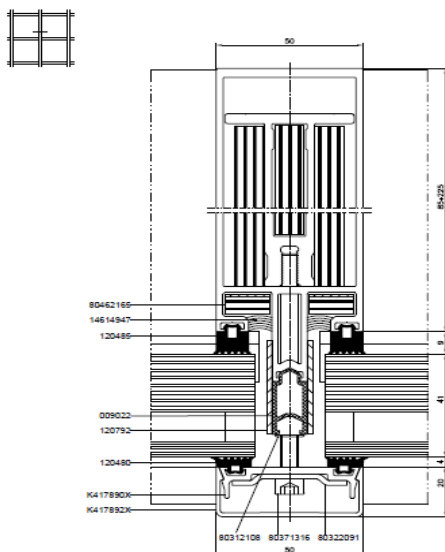
Mullion 30 minute Integrity and Insulation

Transom 30 minute Integrity and Insulation



Mullion 60 minute Integrity and Insulation

Transom 60 minute Integrity and Insulation

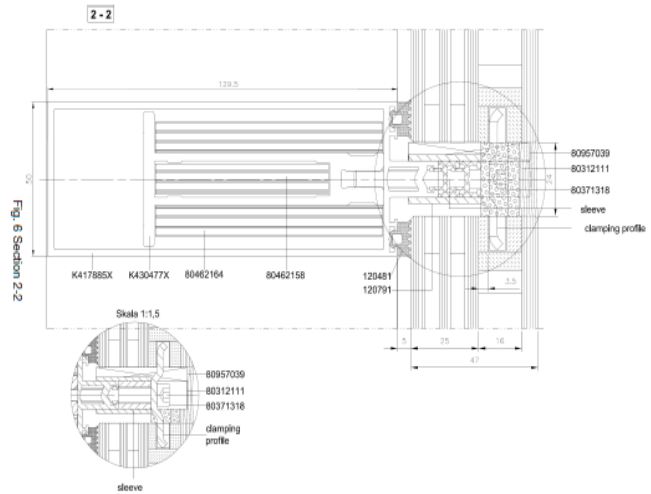
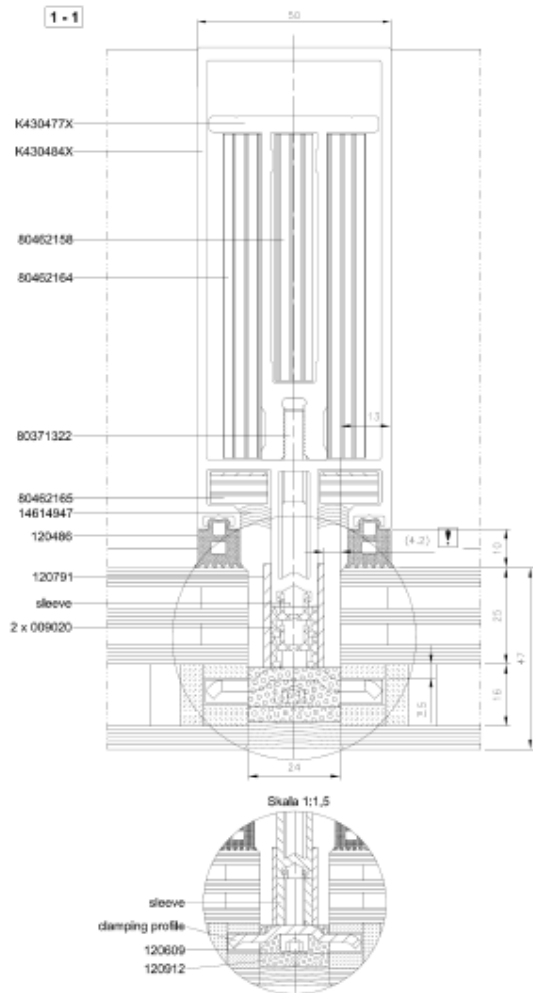



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Sections of Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT – examples (continued)

Mullion - EFEKT
60 minute Integrity and Insulation

Transom - EFEKT
60 minute Integrity and Insulation

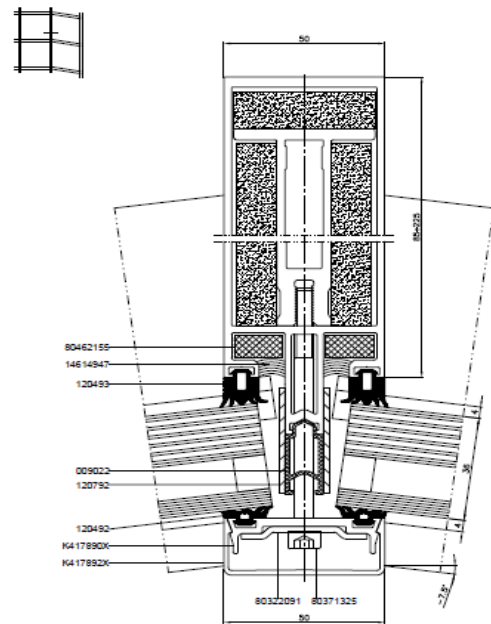
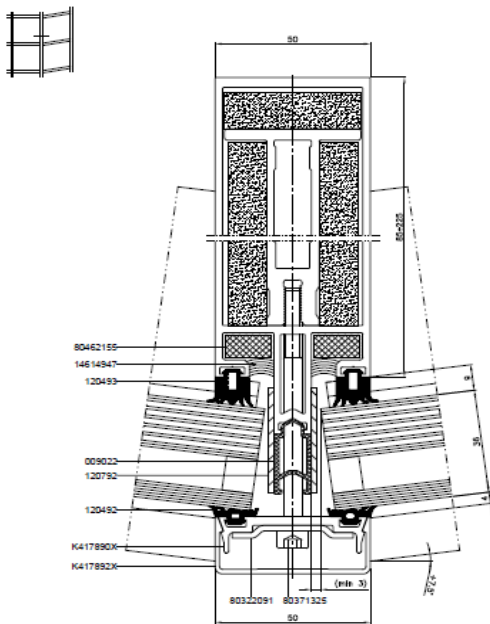


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Sections of Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT – examples (continued)

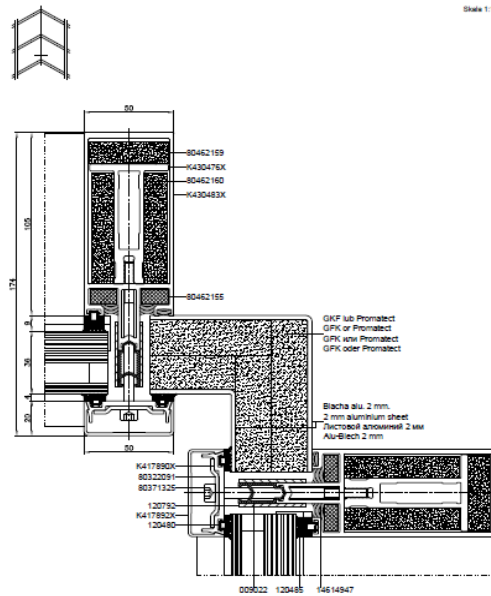
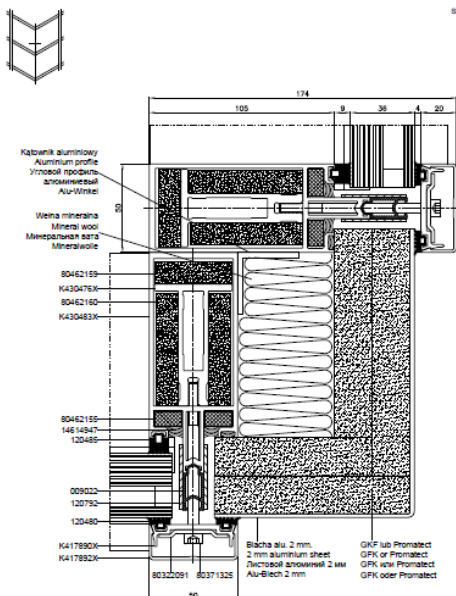
Folding out joint
30 minute Integrity and Insulation

Folding in joint
30 minute Integrity and Insulation



90° folding out joint
30 minute Integrity and Insulation

90° folding in joint EI30
30 minute Integrity and Insulation

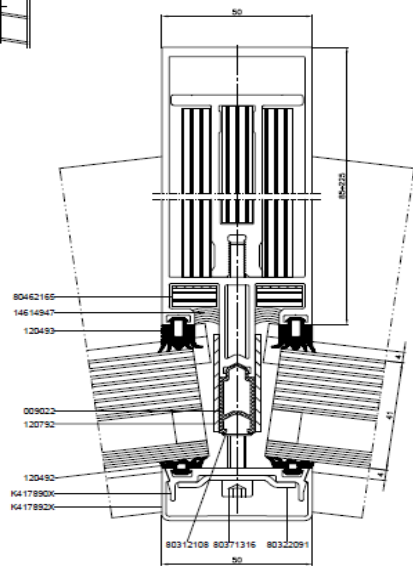
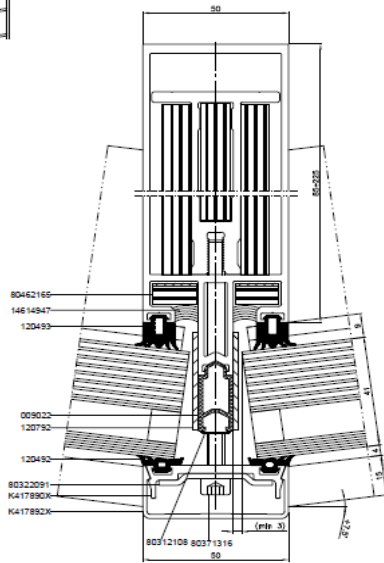



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**Sections of Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI,
MB[®] SR50N EI and MB[®] SR50N EI EFEKT – examples (continued)**

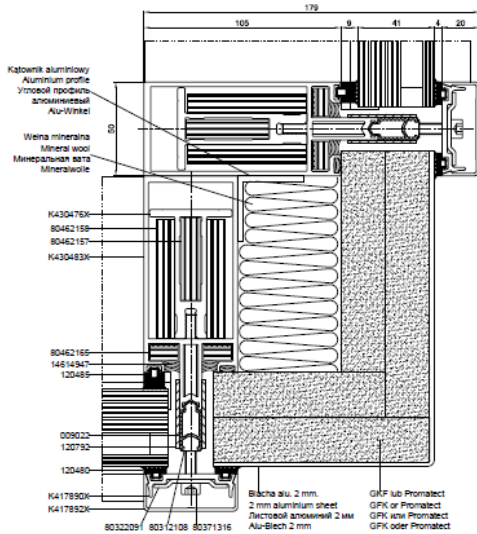
Folding out joint
60 minute Integrity and Insulation

Folding in joint
60 minute Integrity and Insulation

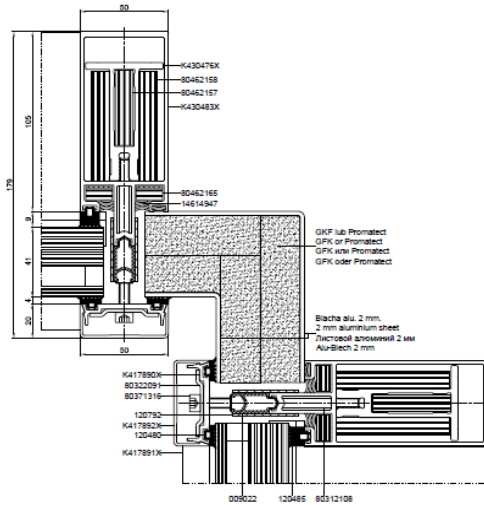


90° folding out joint
60 minute Integrity and Insulation

90° folding out joint
60 minute Integrity and Insulation



Skala



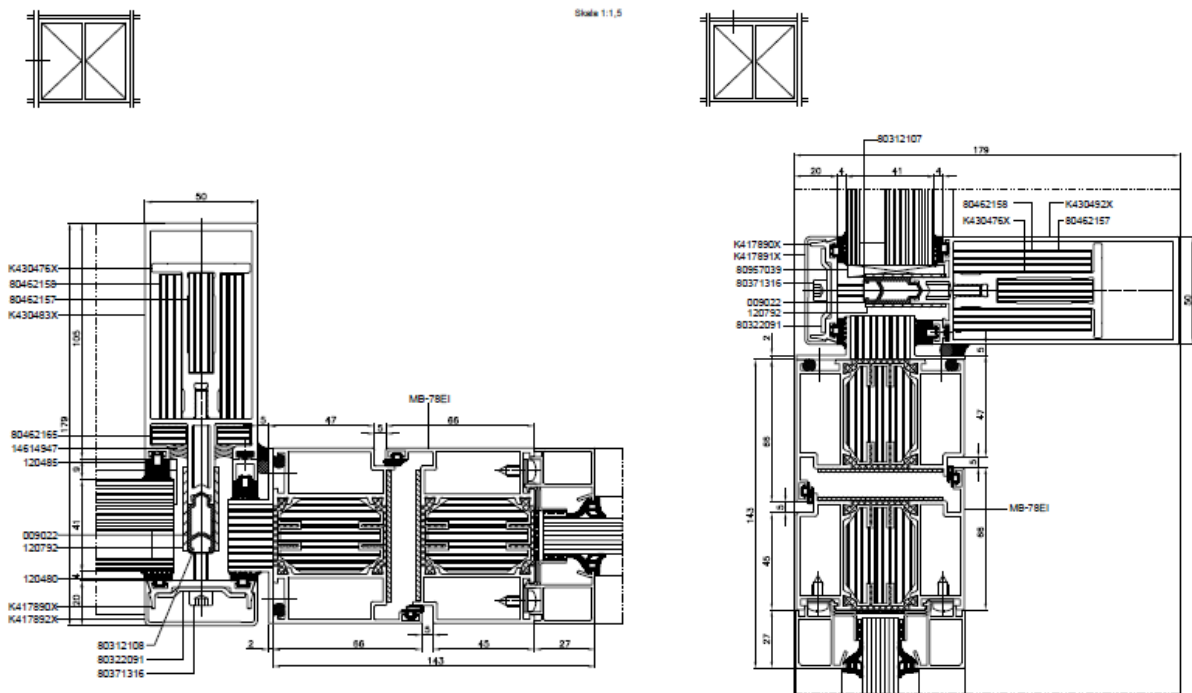
Skala 1:1.5



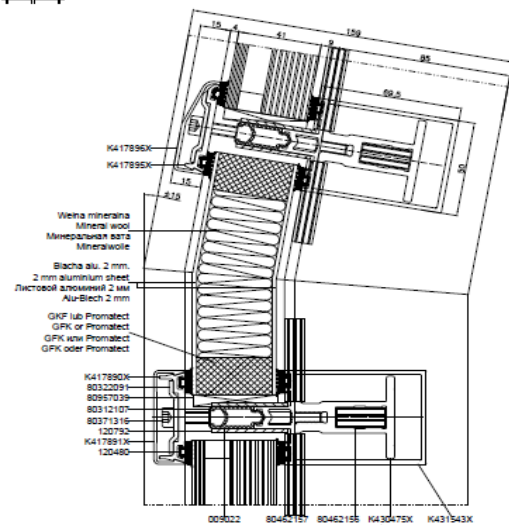
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Sections of Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT – examples

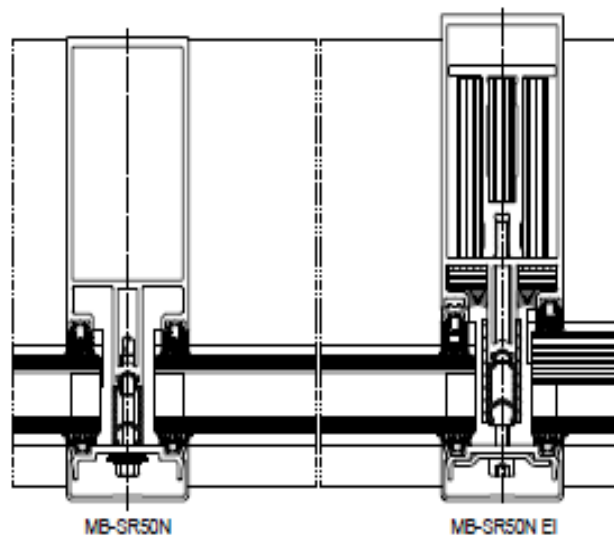
Door in fire rated curtain wall screen – cross sections



Sloped glazing



Fire rated and non-fire rated curtain wall joint




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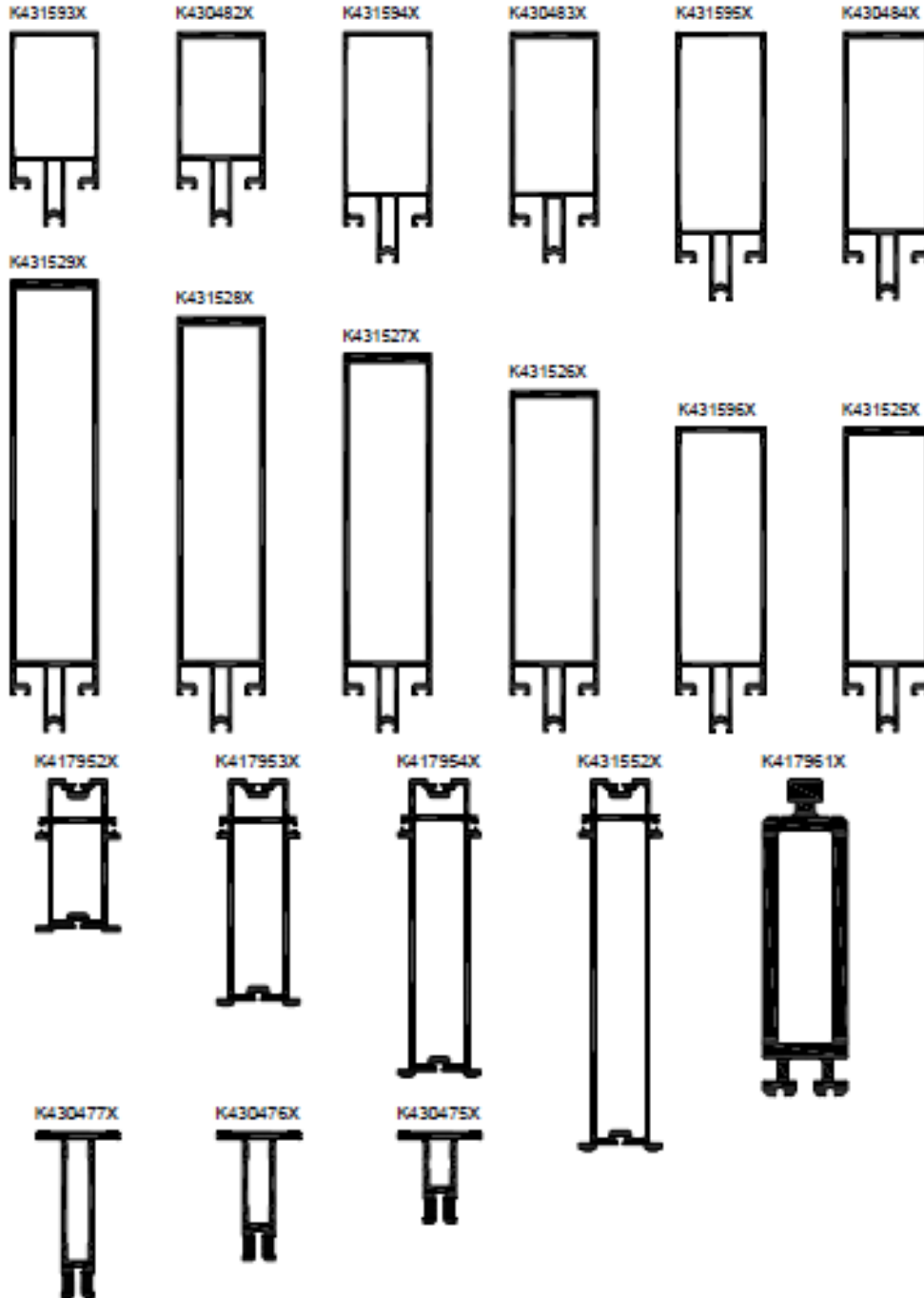
Description of Non Transparent Panels for Glazing into Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT

Panels of opaque sections (lintel and sill belts) are built as sandwiched elements for up to 60 minutes fire resistance in accordance with the constructional documentation of the system and are arranged as follows:

- single glass, air void, plasterboard GKF of thickness 12.5 mm, mineral wool of minimum thickness 100 mm and minimum density 60 kg/m³, steel sheet of thickness 0.5 ÷ 1.25 mm and plasterboard GKF of thickness 12.5 mm;
- glazing unit, mineral wool of minimum thickness 100 mm and minimum density 60 kg/m³, steel sheet of thickness 0.5 ÷ 1.25 mm and plasterboard GKF of thickness 12.5 mm
- steel sheet of thickness 0.5÷1.25 mm (zinc-coated or powder-coated), mineral wool of minimum thickness 100 mm and minimum density 80 kg/m³, steel sheet of thickness 0.5÷1.25 mm and plasterboard GKF of thickness 12,5 mm;
- aluminium sheet (anodised or powder-coated) of thickness 1÷3 mm; mineral wool of minimum thickness 100 mm and minimum density 80 kg/m³, steel sheet of thickness 0.5 ÷ 1.25 mm and plasterboard GKF of thickness 12.5 mm.

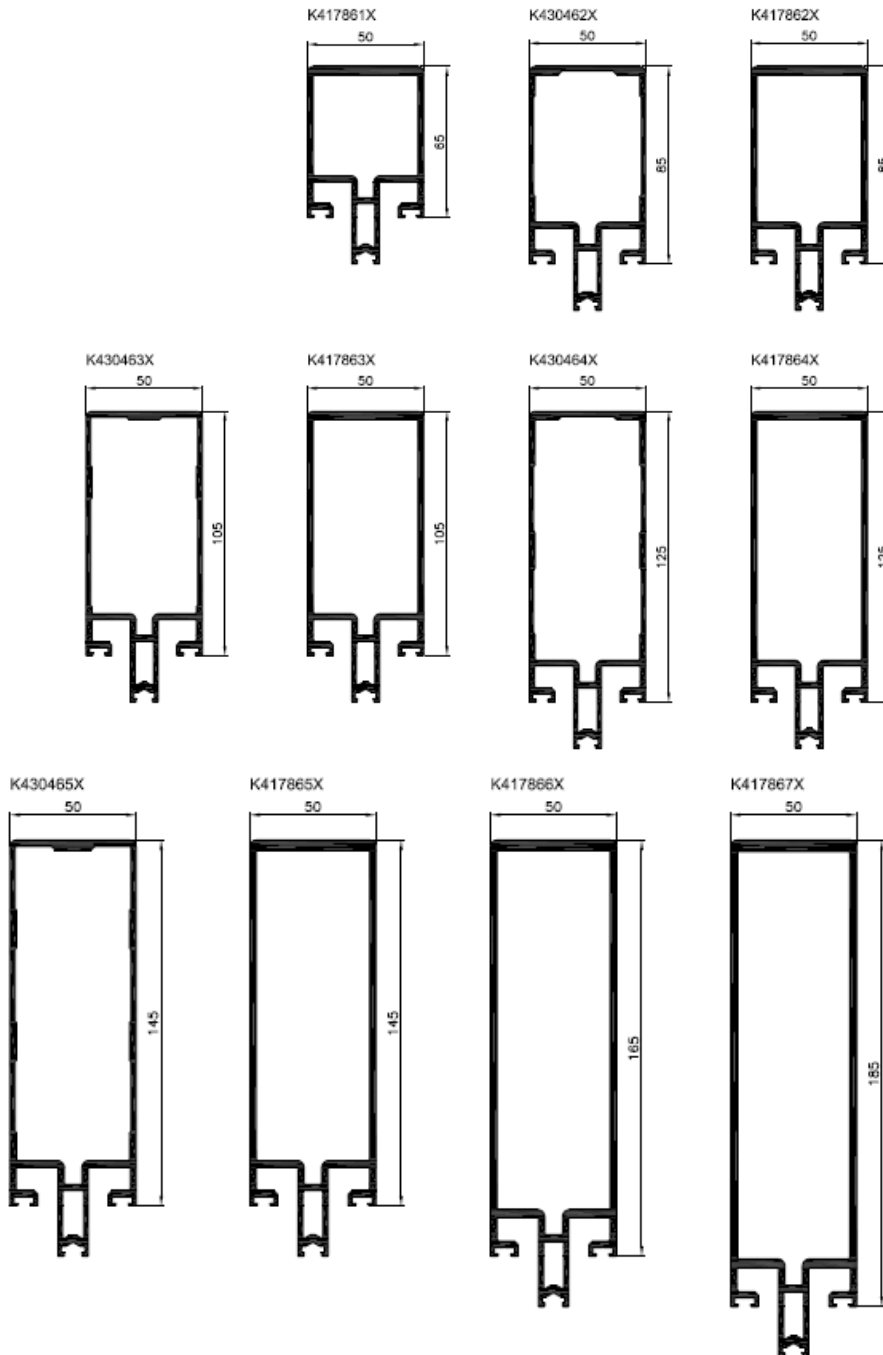
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**System Parts for Approved Aluminium Curtain Walling Systems Type MB[®]
SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT**



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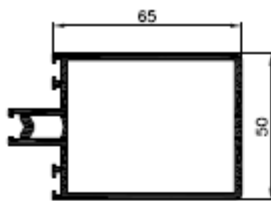
System Parts for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)



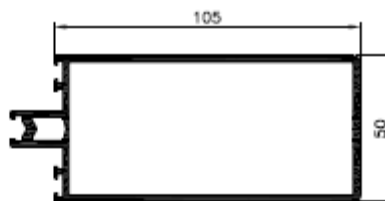

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**System Parts for Approved Aluminium Curtain Walling Systems Type MB[®]
SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)**

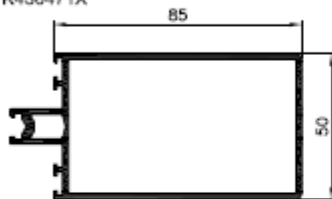
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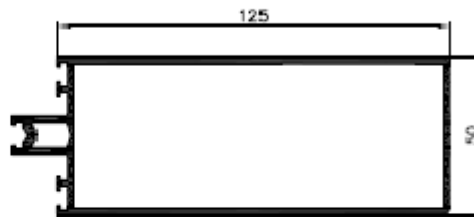
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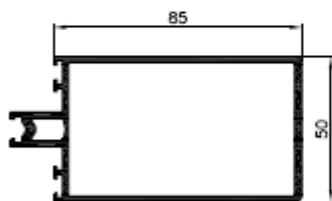
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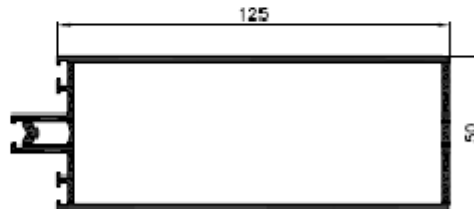
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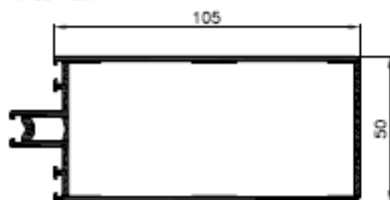
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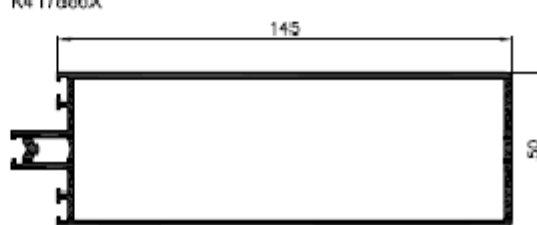
K417885X



K430472X



K417886X



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System Parts for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)

K431543X



K430493X



K430491X



K431531X



K430492X



K431532X



K430400X



K431533X



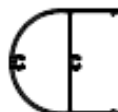
K417889X



K413951X



K417894X



K417893X



K417891X



K417892X



K417925X



K417896X



K417914X



K430418X



K417890X*



K417895X

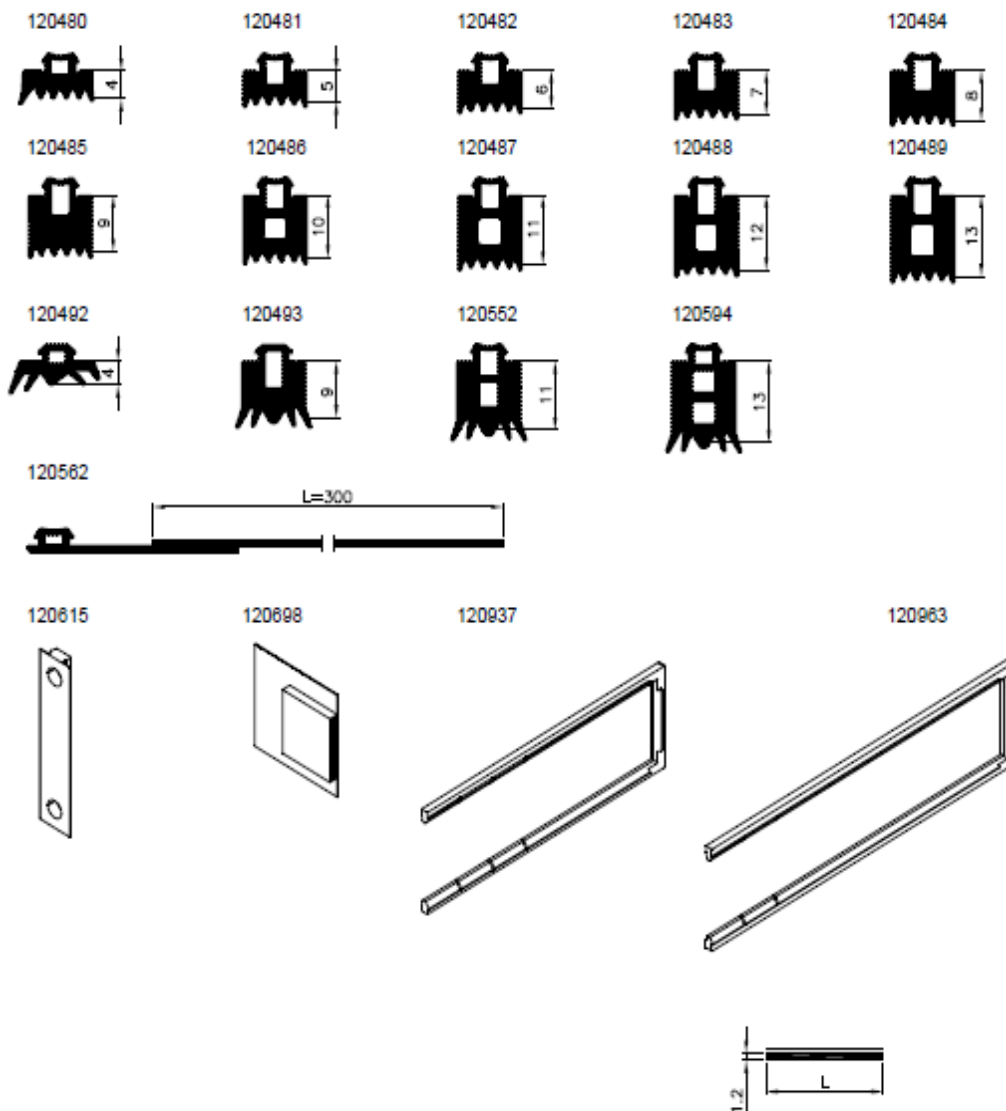


K417915X



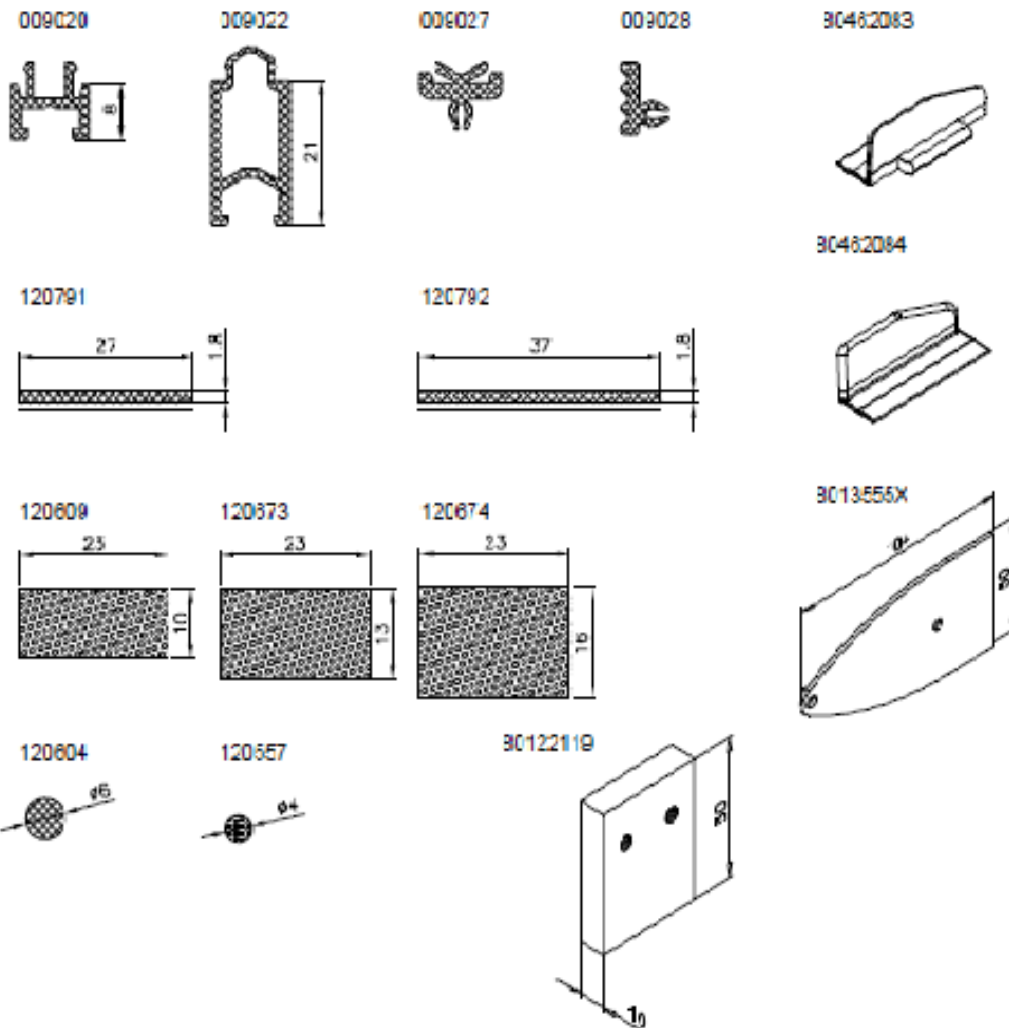
CERTIFICATE No CF 5139
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System Parts for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT(continued)



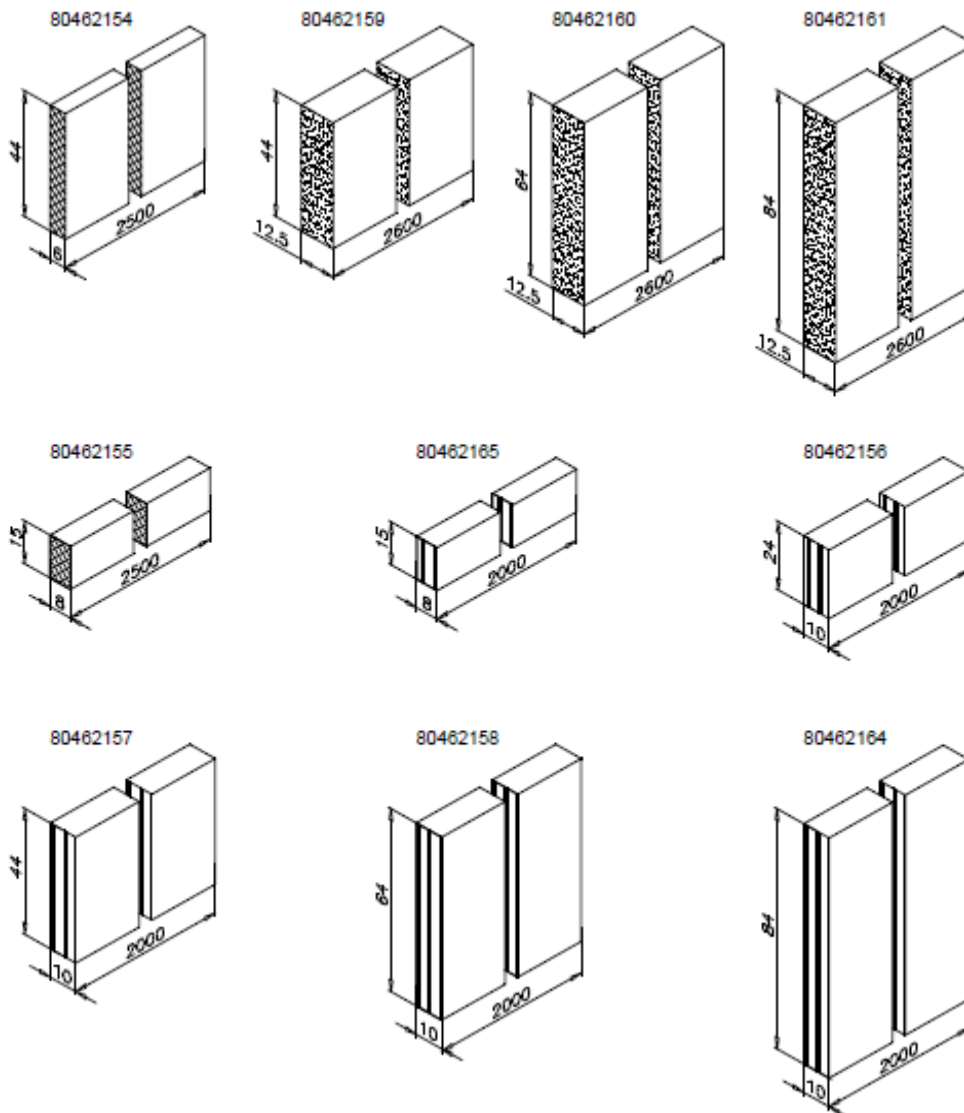
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System Parts for Approved Aluminium Curtain Walling Systems Type MB® SR50 EI, MB® SR50N EI and MB® SR50N EI EFEKT (continued)



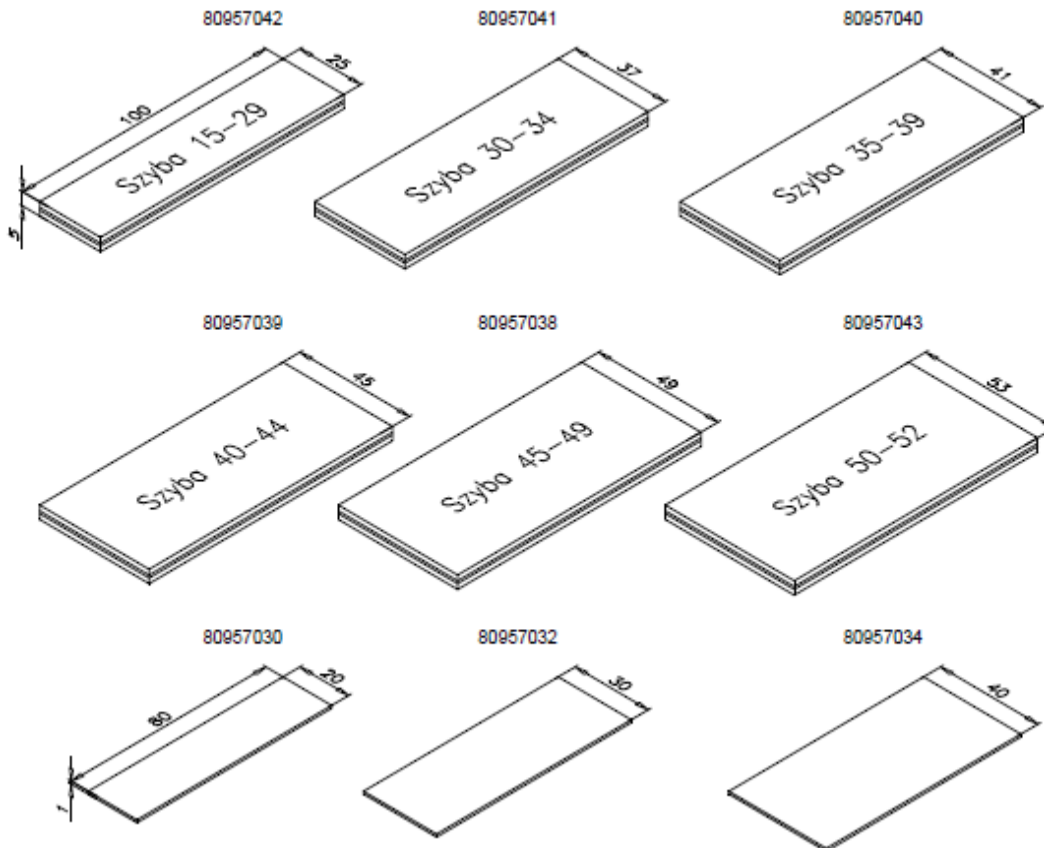
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ALUPROF S.A.

**System Parts for Approved Aluminium Curtain Walling Systems Type MB[®]
SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)**



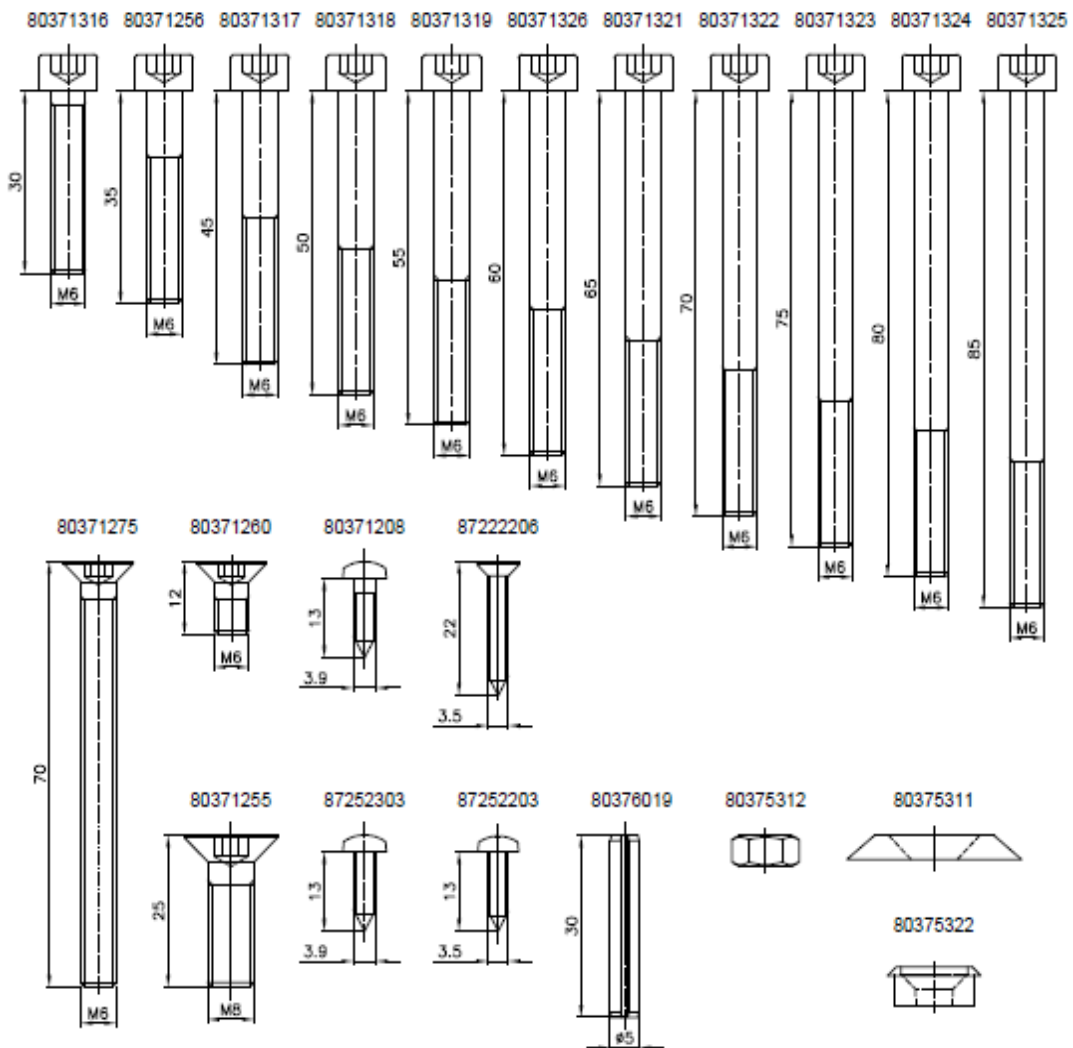
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**System Parts for Approved Aluminium Curtain Walling Systems Type MB[®]
SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)**



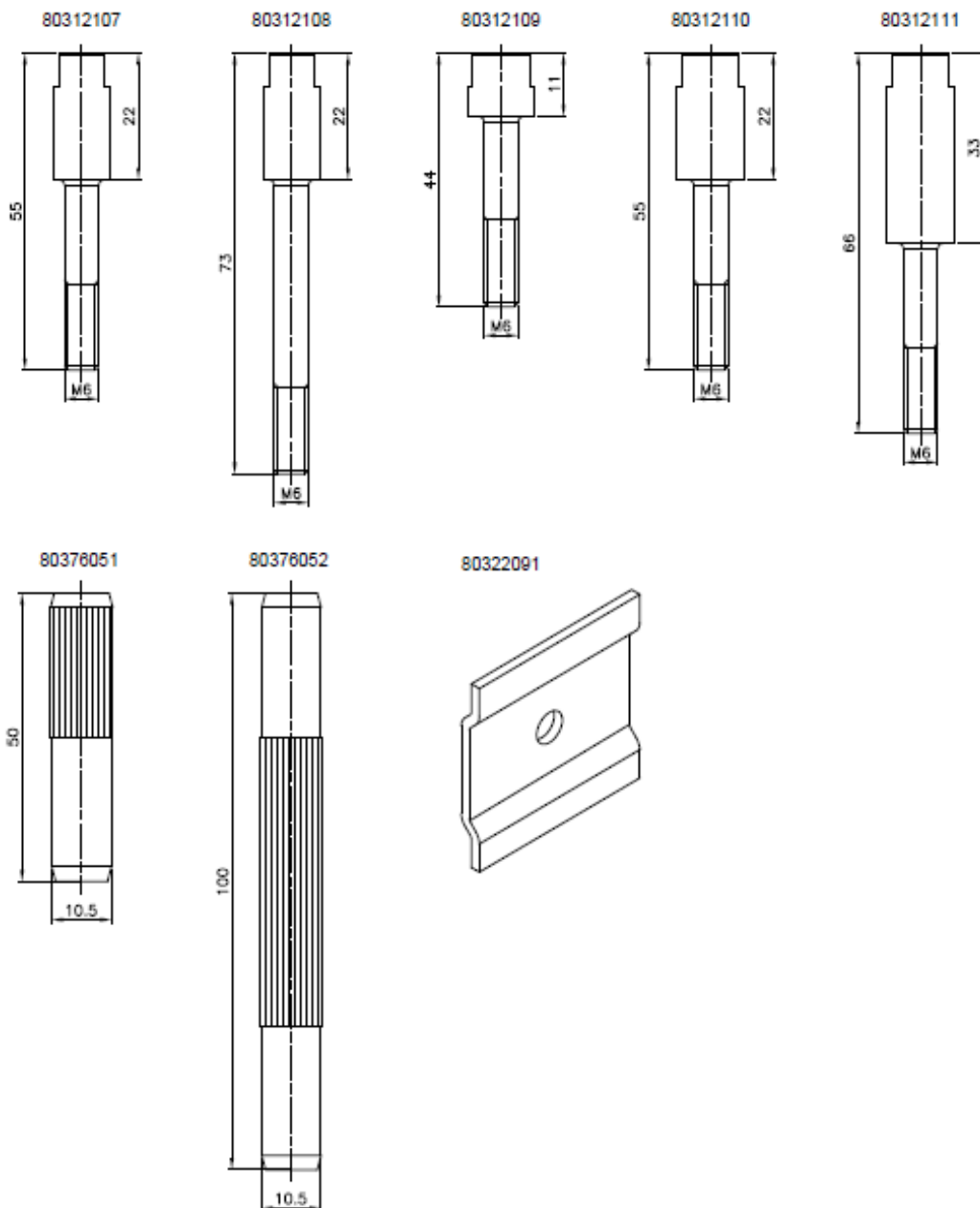
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**System Parts for Approved Aluminium Curtain Walling Systems Type MB[®]
SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)**



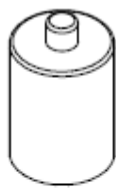
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ALUPROF S.A.

**System Parts for Approved Aluminium Curtain Walling Systems Type MB[®]
SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)**



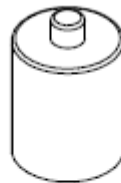
CERTIFICATE No CF 5139
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Sealants, Glues and Cleaning Agents for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)



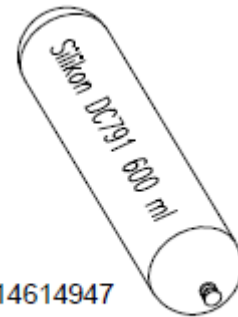
12894900

Cleaning agent Coralclean



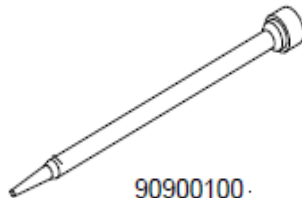
12894920

DC R-40 remover



14614947

Silikon DC791



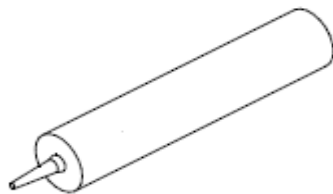
90900100

Mixing nosel



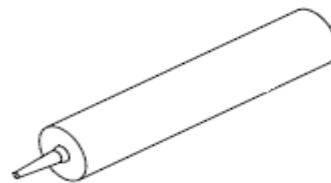
13364617

One-component adhesive utilized to glue gaskets and details. Surfaces may be cleaned with Coralclean. The glue is applied to one side, then the glued surfaces are brought together and clamped firmly until the joint sets (ca. 10 s). Full functional strength is reached after approx. 5-10 min. Minimum application temperature: 5°C



14614959

Fire resistant foam

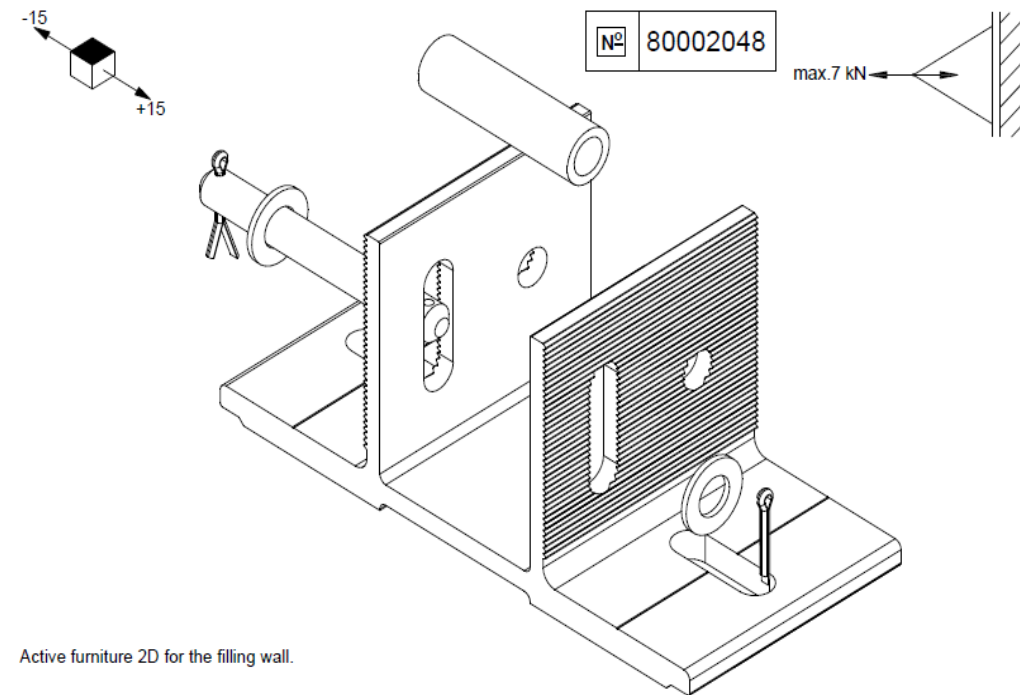
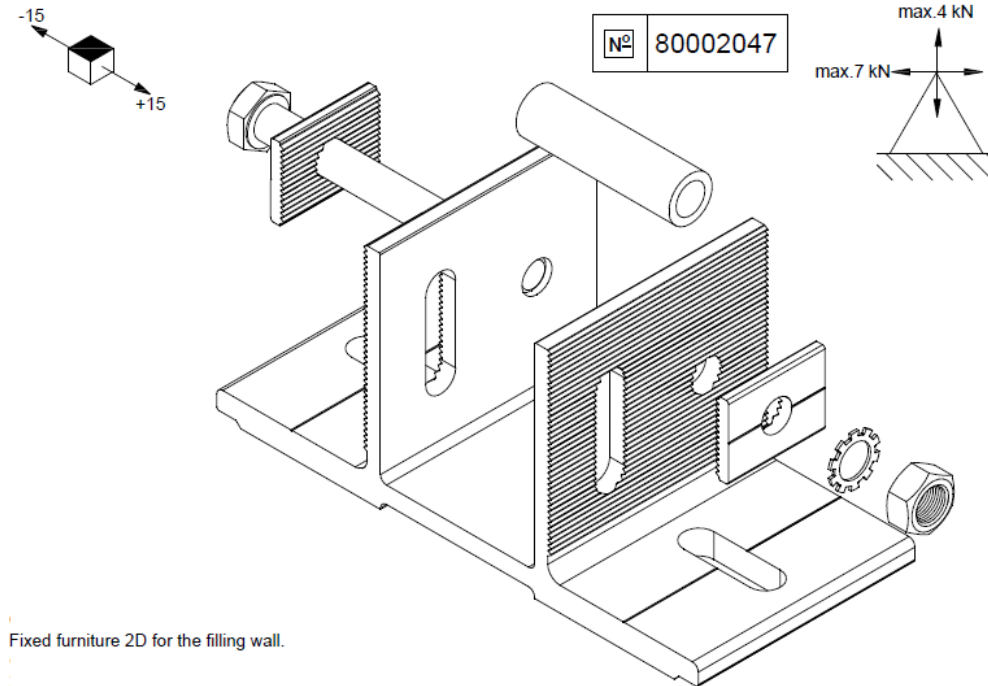


14614967

Fire resistant silicone

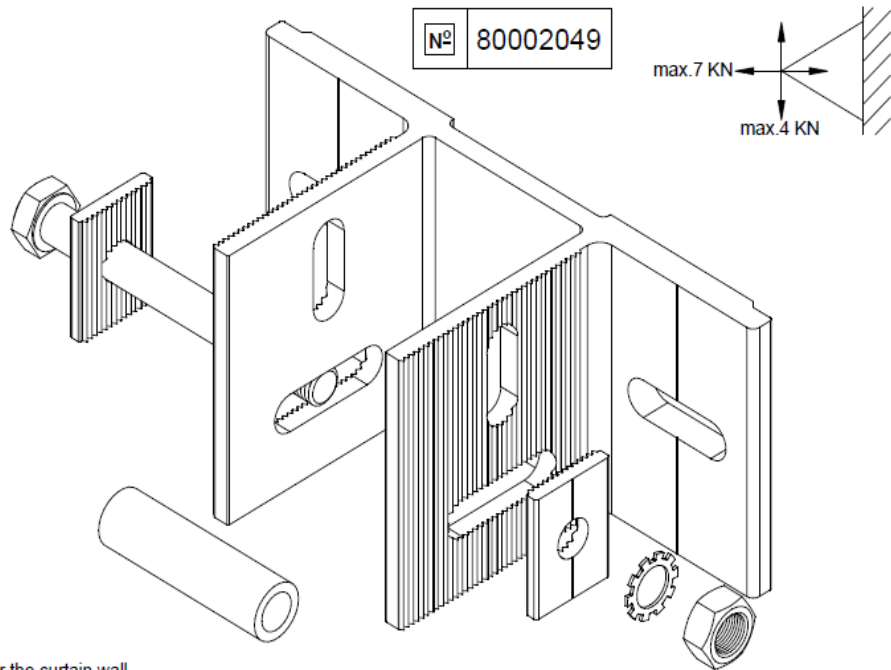
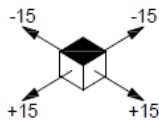
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Brackets for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT

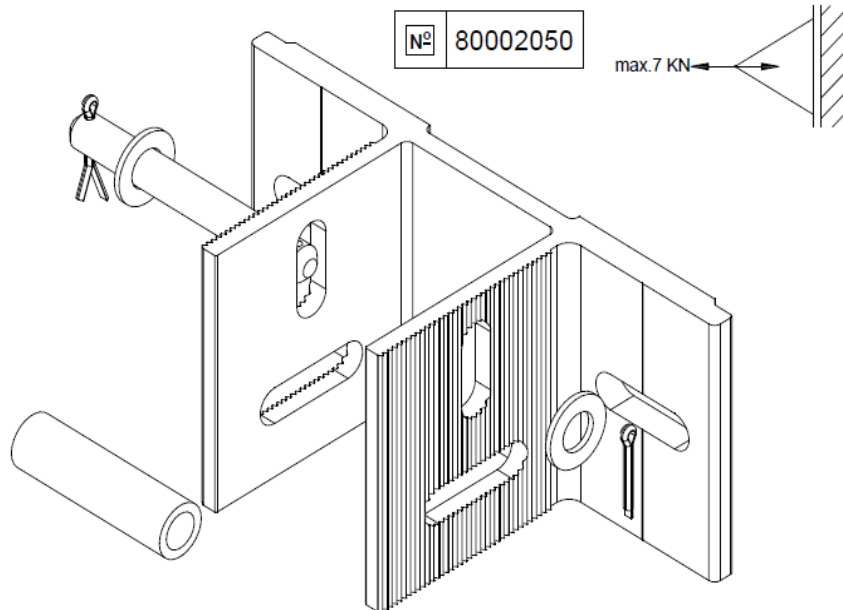
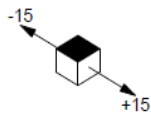


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Brackets for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)



Fixed furniture 2D for the curtain wall.

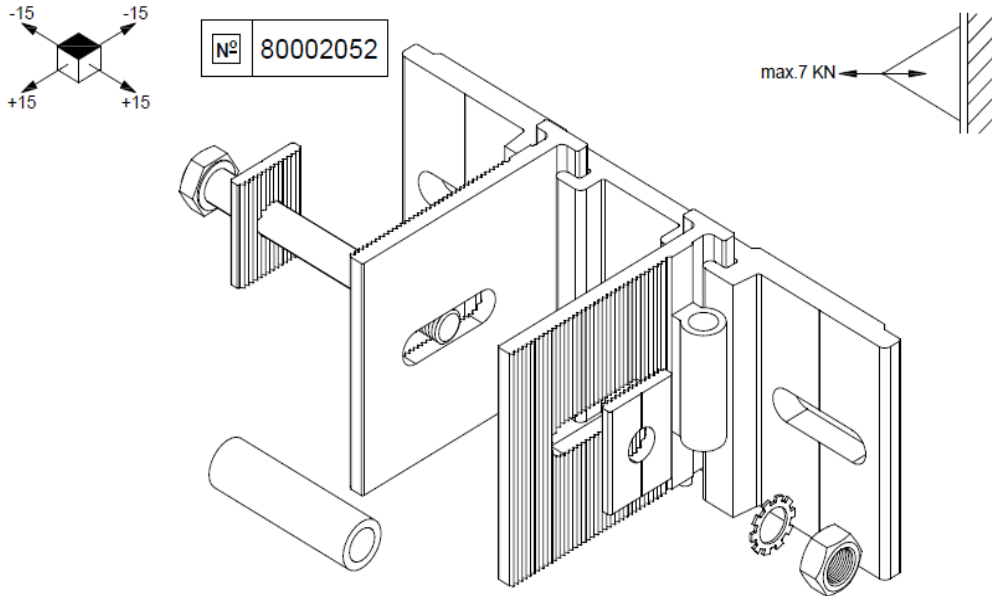


Active furniture 2D for the curtain wall.

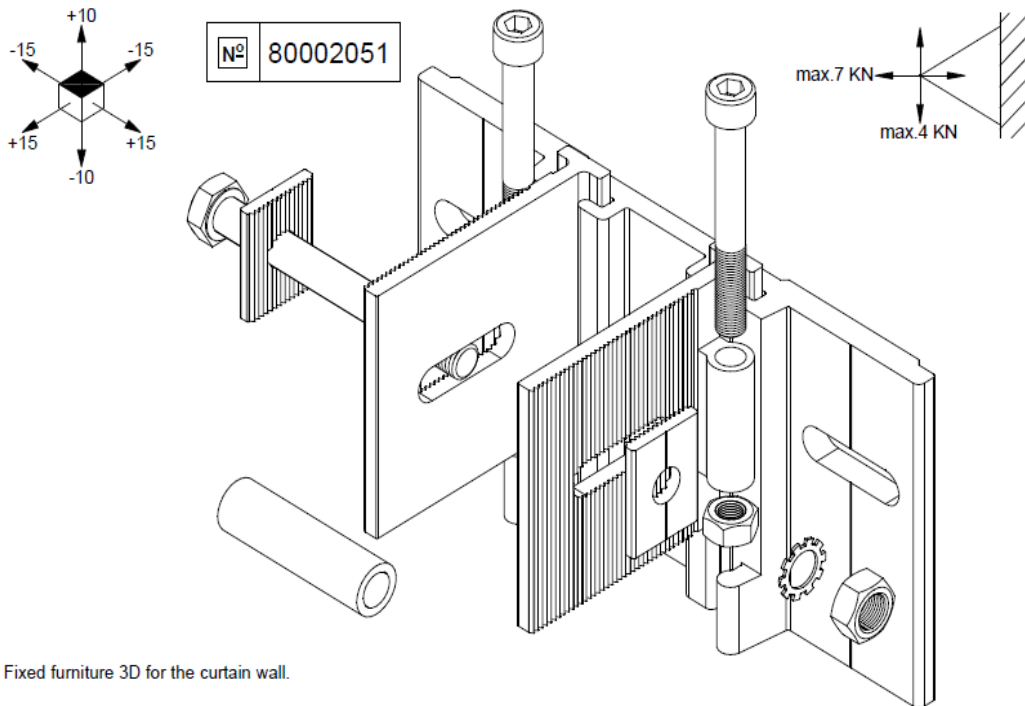


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Brackets for Approved Aluminium Curtain Walling Systems Type MB[®] SR50 EI, MB[®] SR50N EI and MB[®] SR50N EI EFEKT (continued)



Active furniture 3D for the curtain wall.



Fixed furniture 3D for the curtain wall.

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List of Approved System Suppliers

Prime System Manufacturer		
Company Name	Telephone	E mail Address
System Licensees		
Company Name	Telephone	E mail Address



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