SCHÜCO

Schüco Façade System TropTec™ UC 65 SG.NI

General System Information

Contents

Flexible in design, efficient in fabrication
The Schüco TropTec™ UC 65 SG.NI unitized façade has been specifically developed to meet the requirements of markets with tropical climates. This Schüco system combines energy efficiency, stylish design, versatility and efficient fabrication.

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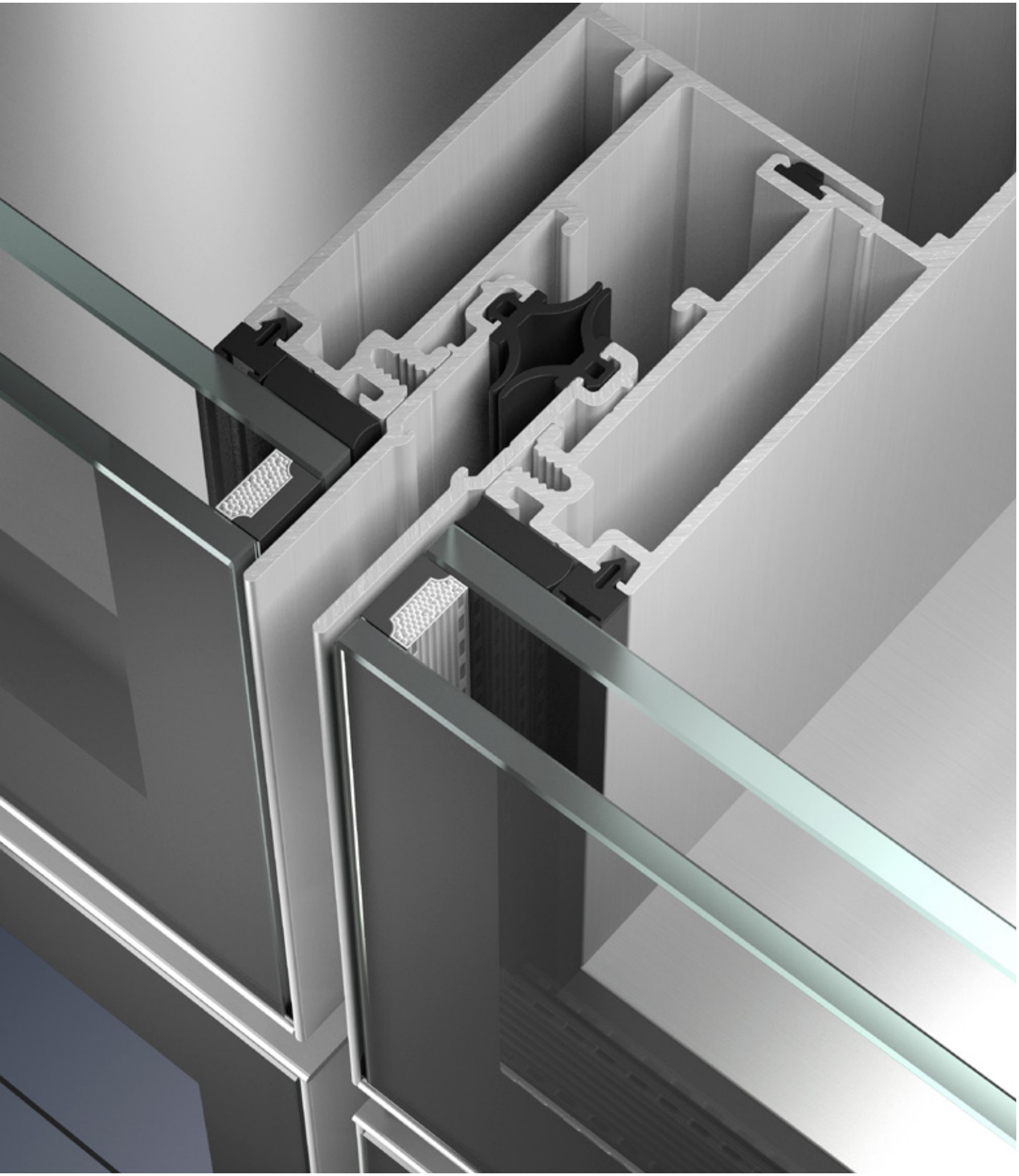
Technical properties



Schüco TropTec™ UC 65 SG.NI with structural glazing

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Features and benefits

Features:

- All-glass unitized curtain wall
- Narrow mullion face width of 65 mm
- Basic depth of 160 mm
- A basis for project solutions
- Unit weights up to 400 kg
- Storey heights up to 3900 mm and field widths up to 1500 mm
- Glass thickness:
  - Insulating glass thickness (22 - 26 mm)
  - Single glazing thickness (6 - 8 mm)
- Easy fabrication and fast assembly with butt joints
- High level of weathertightness due to multi-chamber principle and horizontal saddle gasket throughout
- Stack-joint heights of 10 mm or 20 mm possible
- Available as single field or continuous load-bearing member
- Spandrel units and window insert units can be integrated
- System solution for external solar shading
- Adjustable unit attachments with horizontal and vertical tolerance equalisation

Benefits:

- Proven quality in accordance with system testing and AAMA
- German engineering at local market prices
- Flexible system with attachment detail solutions (building) and interfaces (insert units and external solar shading)
- Large loads and dimensions with narrow face widths
- Step-by-step fabrication, assembly and installation documentation
- Software solutions to faciliate design and calculation
- Complete range of products from a single source
- A high level of prefabrication
  - Improved quality
  - Reliable costing
  - Less glass breakage
- Short construction times on site
  - Few individual components
  - No glazing on site
  - Minimum dependence on the weather

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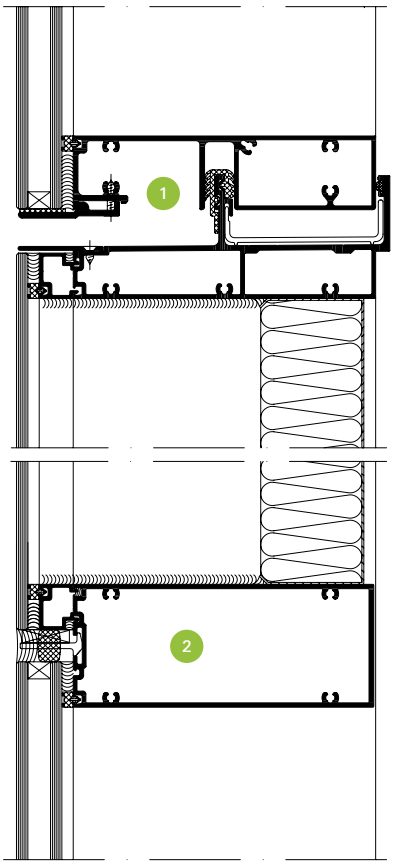
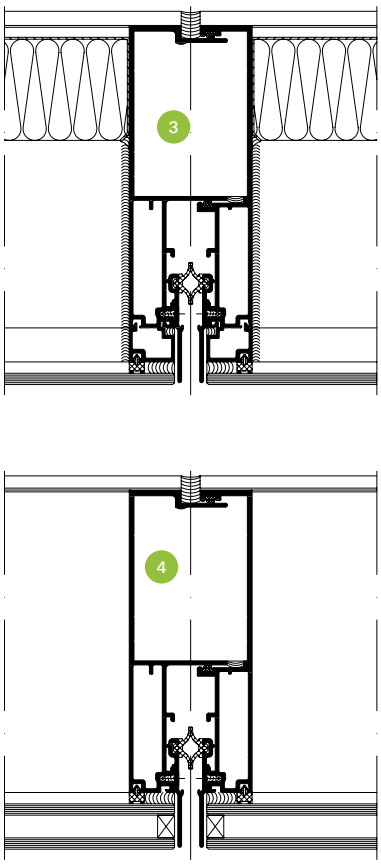
Test certificates for Schüco TropTec™ UC 65 SG.NI

Thermal conduction					
Glass thickness [mm]	Face width [mm]	Depth of mullion [mm]	Unit size [m]	U_{cw} [W/(m²K)]	U_g [W/(m²K)]
6	65	160	1.5 x 3.9	3.3	5.8
24					3.3





Position	Face width [mm]	Depth of mullion [mm]	U_f [W/(m²K)]	Psi (Ψ) [W/(mK)]
1	65	160	5.75	0.53
2			4.21	0.56
3			5.01	0.64
4			6.08	0.27

Test certificates				
Type of test	Basis	Test institute	No. of test certificate / report	Test result
Air, Water, Structural Seismic Interstory Movement	AAMA 501.4-00	IFT Façade India Testing Inc.	11-000756-PR01	See test certificate
Thermal conduction	DIN EN ISO 10077	Schüco		See table below

Test certificates				
Type of test	Test result	Type of glass	$R_w(C;C_{tr})$	
Airborne sound insulation index for glazing composition / R_w, glass	34 dB	6/12/6	Sound transmission horizontal	49 (-1;-2) dB
	34 dB	6/14/6		
	38 dB	8 LSG (4-0.76 PVB-4)/12/6	Sound transmission vertical	51 (0;-3) dB
	39 dB	6 LSG (3-1.52 PVB-3)/12/8		

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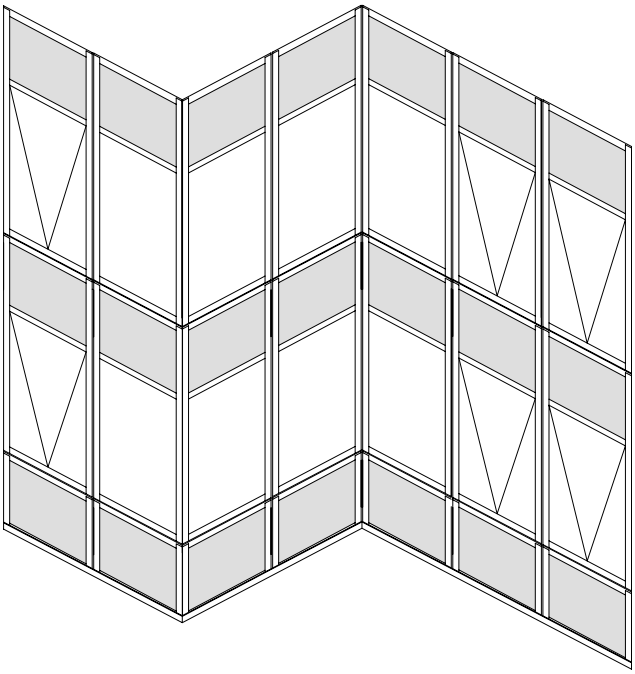
Unit options



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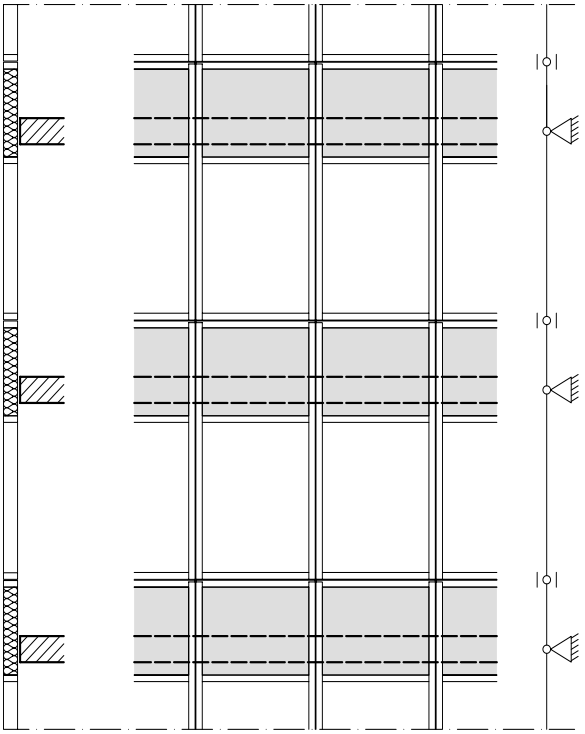

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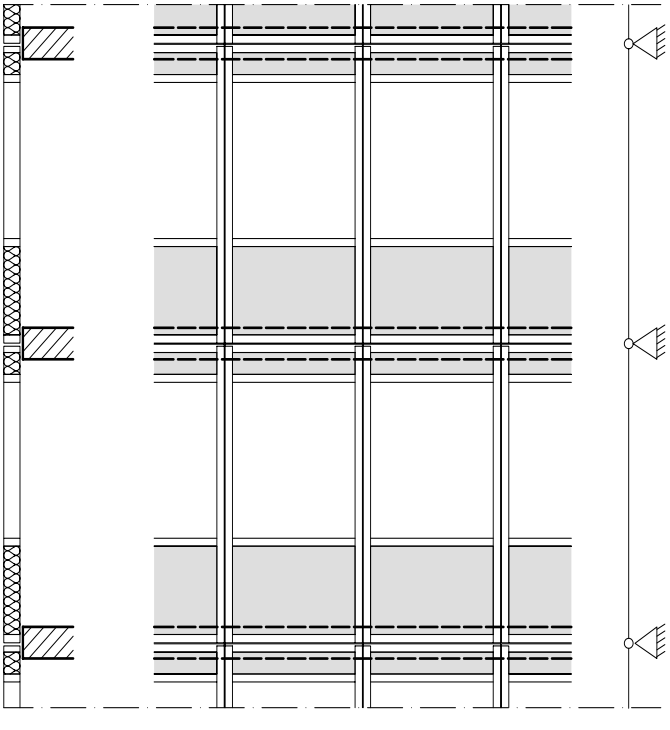

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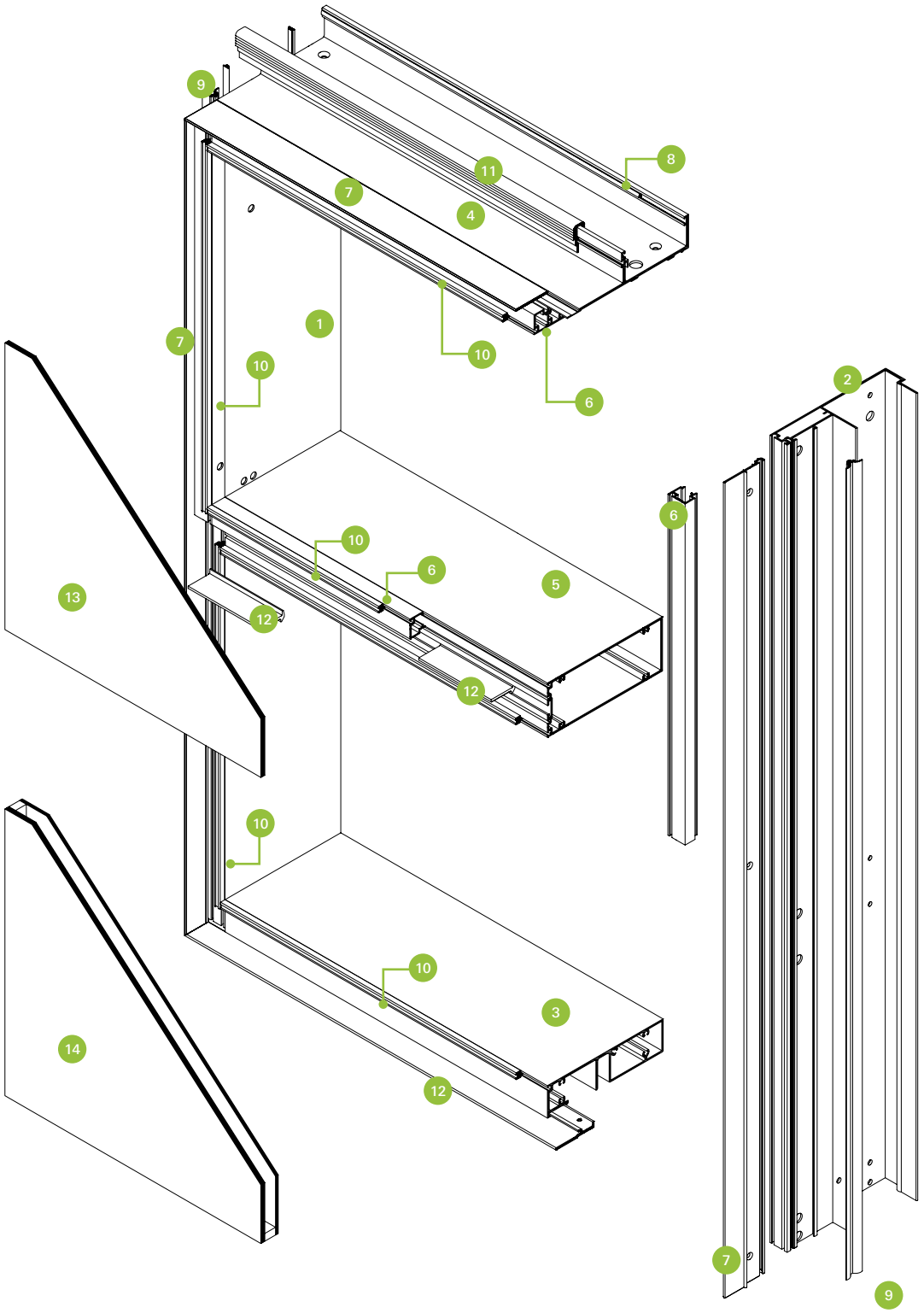
System components

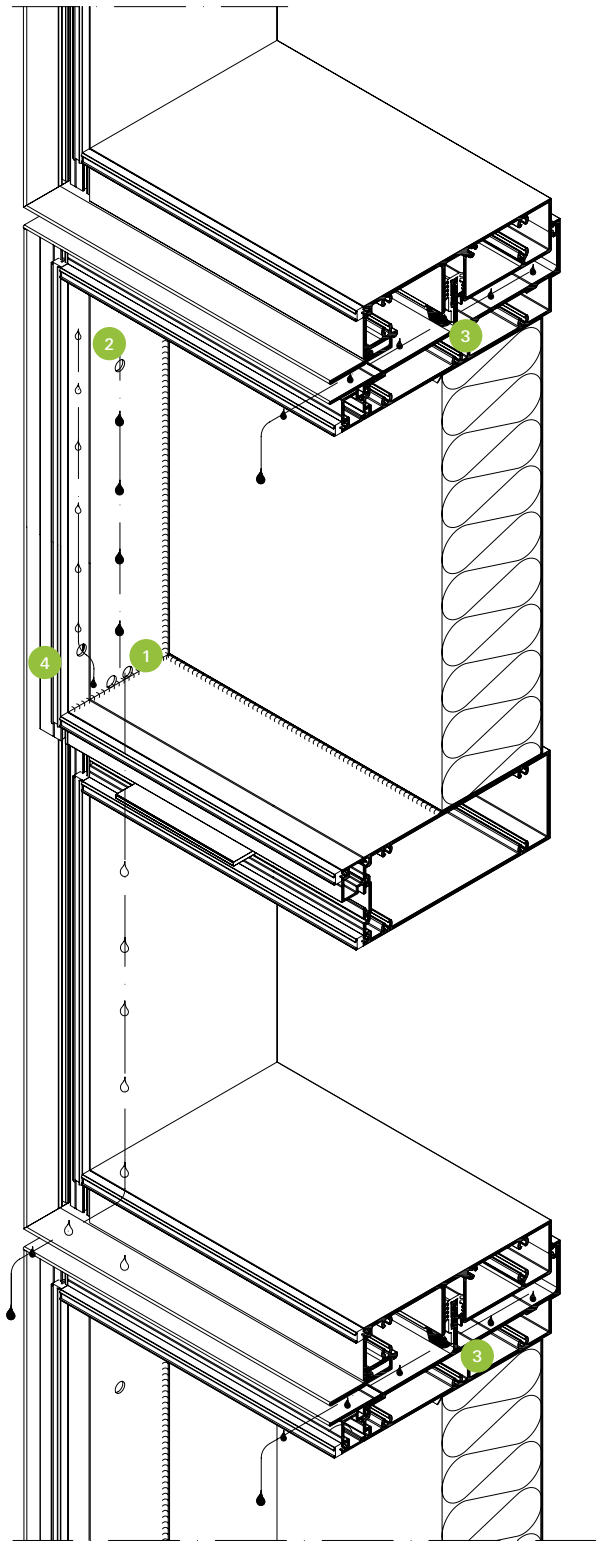
System illustration



1 Mullion female
2 Mullion male
3 Transom female
4 Transom male
5 Sash bar
6 Spandrel profile
7 Glass edge protection
8 Gasket
9 Front chamber gasket
10 Glazing rebate gasket
11 Saddle gasket
12 Glazing support
13 Single glazing
14 Insulating glazing

Design features

Overall ventilation and drainage



1. Any condensation is systematically drained to the outside through drainage slots (8 mm x 50 mm) in the mullion profile through the bottom profile slot.

2. Pressure is equalised in the spandrel area by the ventilation openings (ø 8 mm) in the upper area of the mullion.

3. For each unit, any condensation is systematically channelled to the outside through a drainage slot (10 mm x 20 mm) in the centre bar.

4. Any condensation is channelled to the outside via a drainage slot (Ø 8 mm) in the spandrel profile through the drainage slots in the mullion profile.

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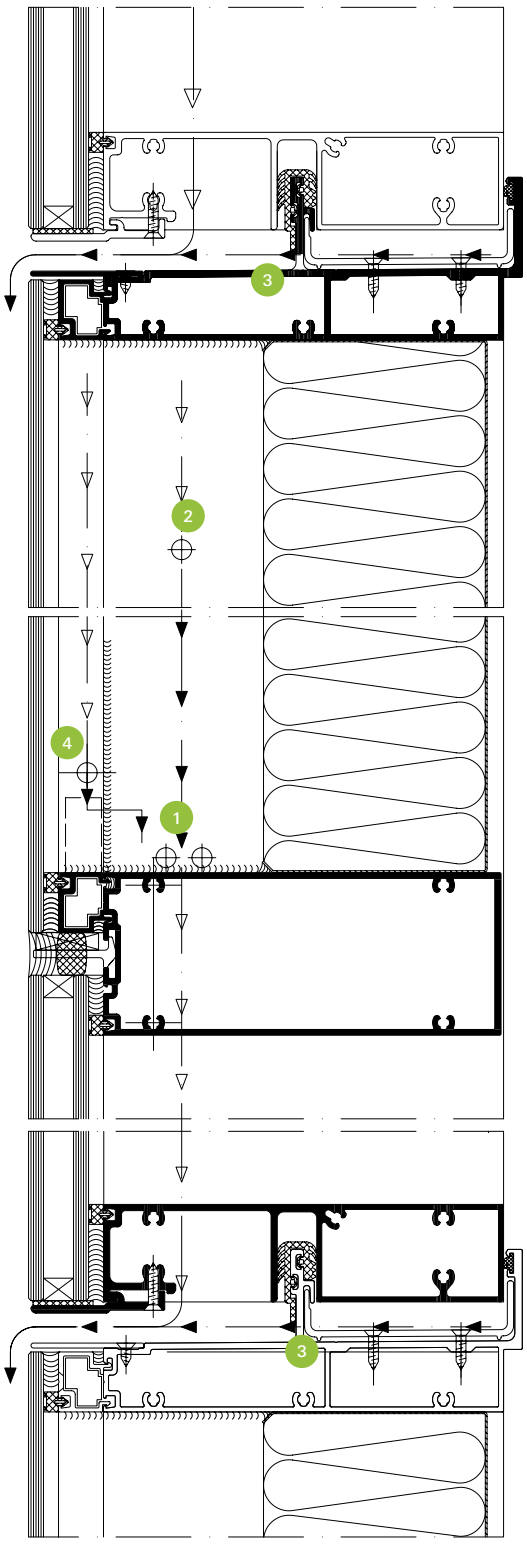
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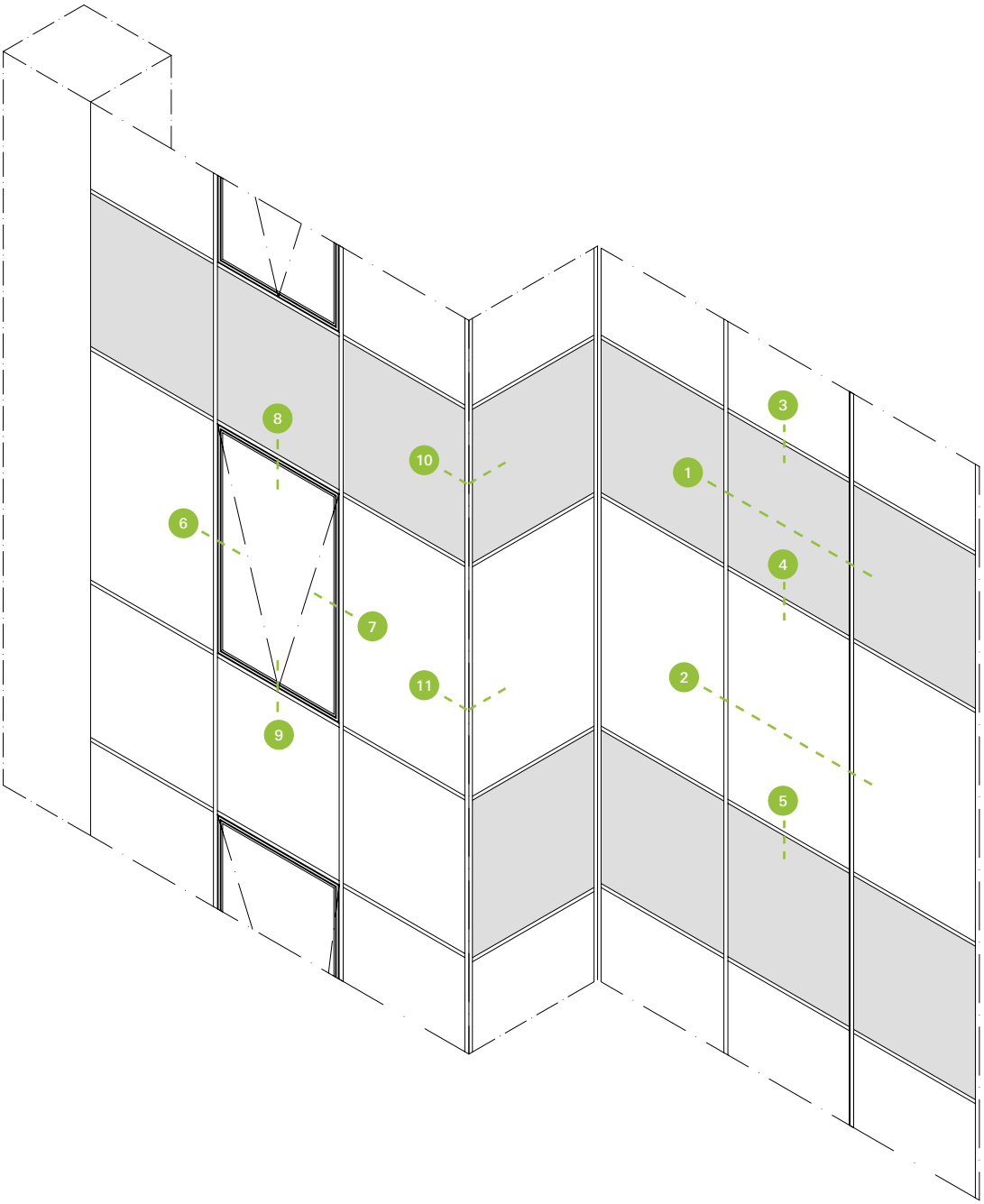
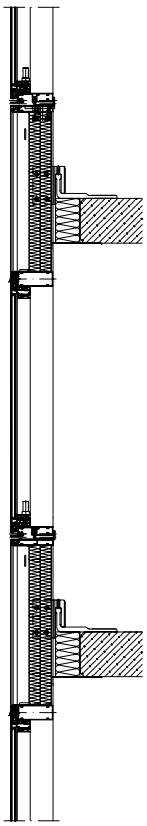
2
4
1
3

Section details





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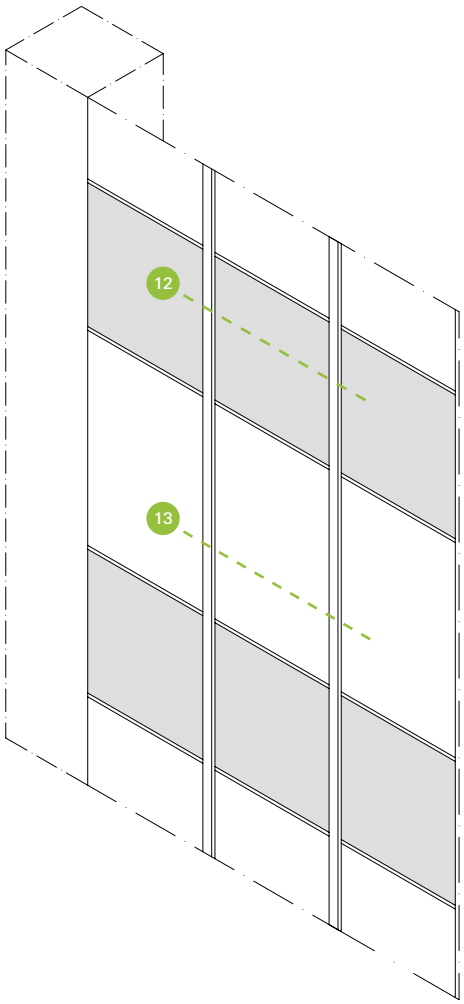
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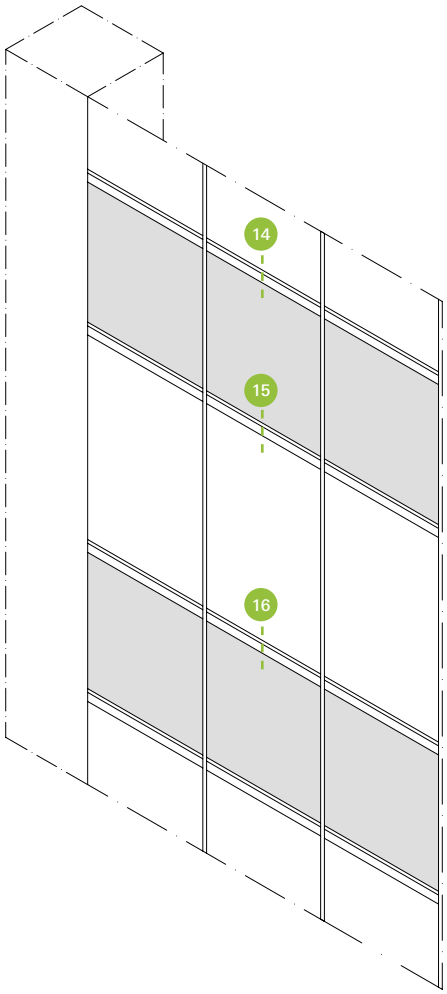
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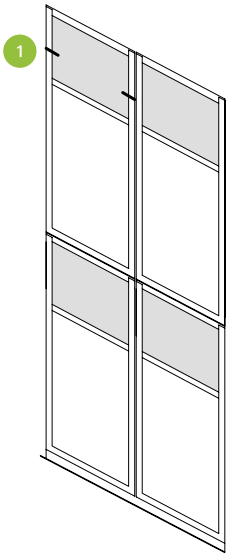
Mullion, spandrel profile with single glazing



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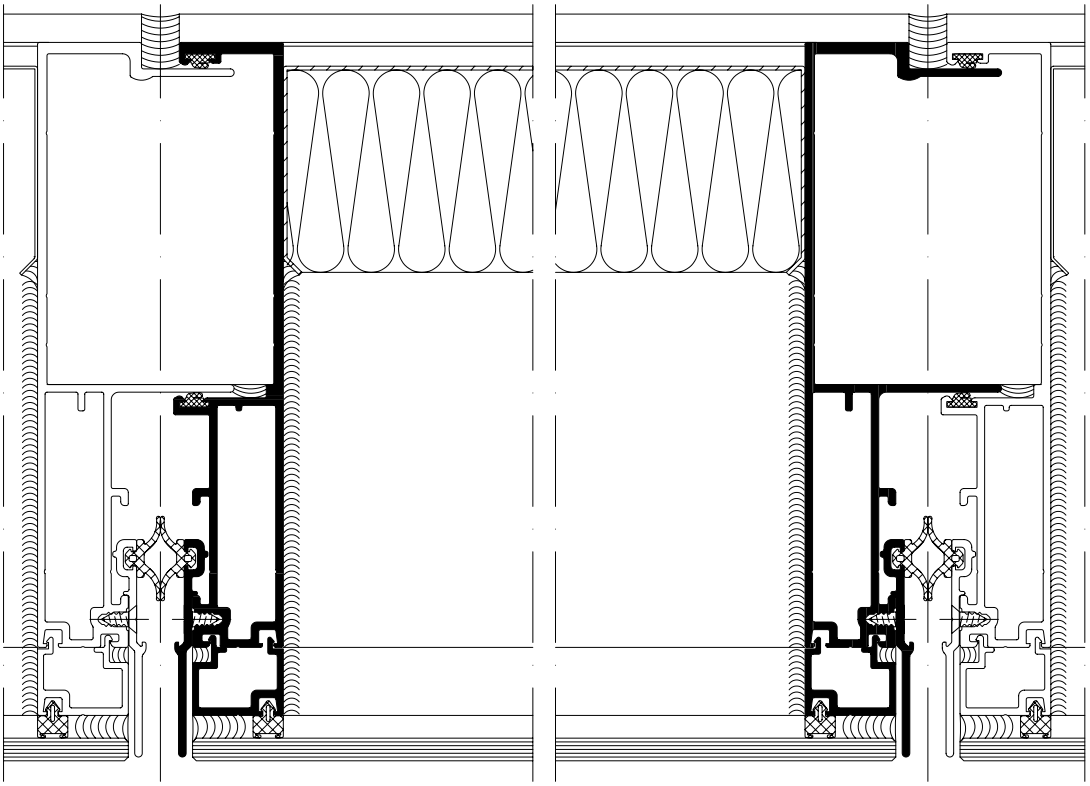

Scale 1:2

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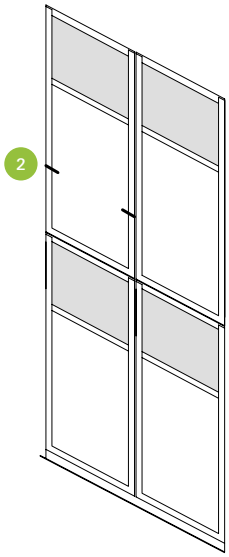
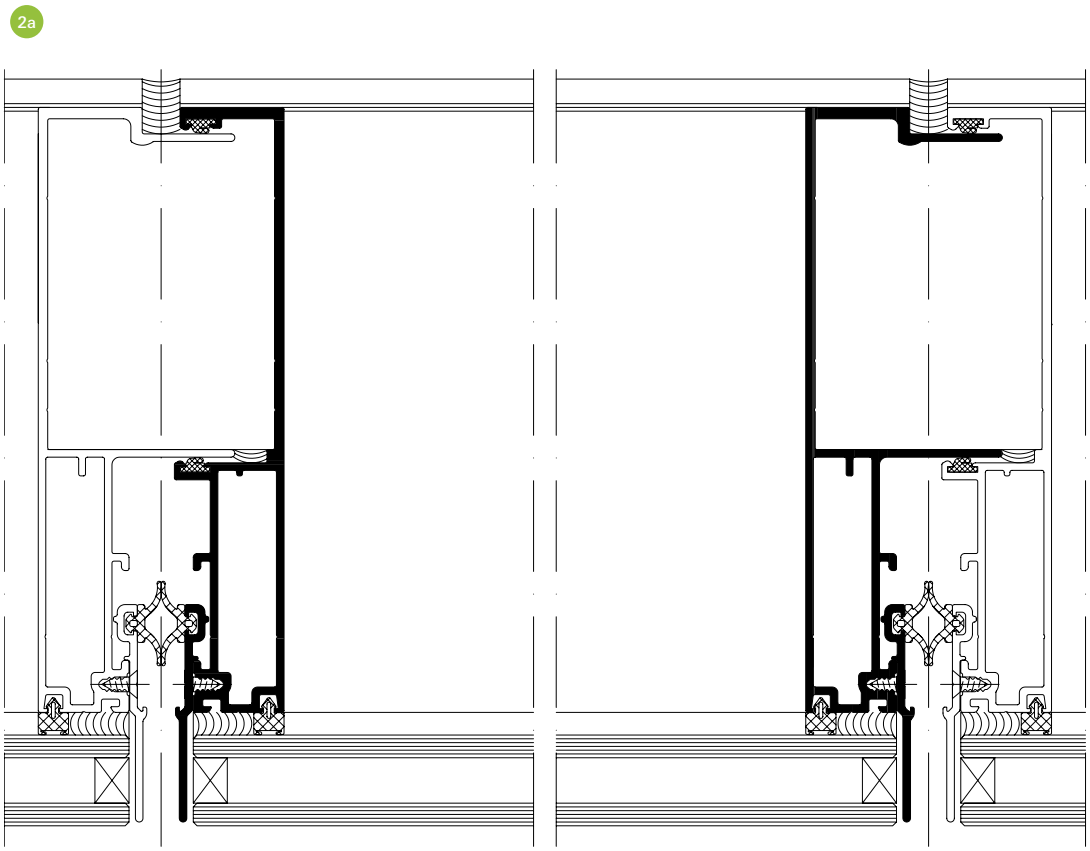
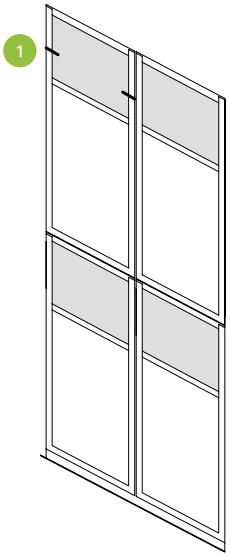
Mullion with insulating glass





Scale 1:2

Mullion, spandrel area with single glazing



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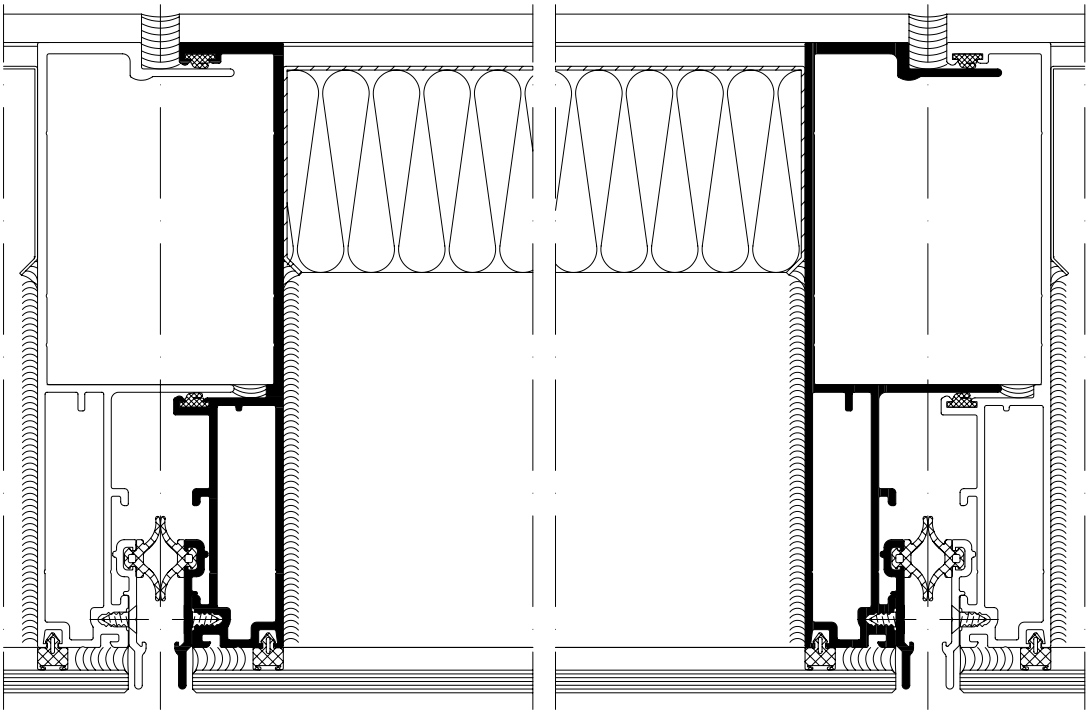

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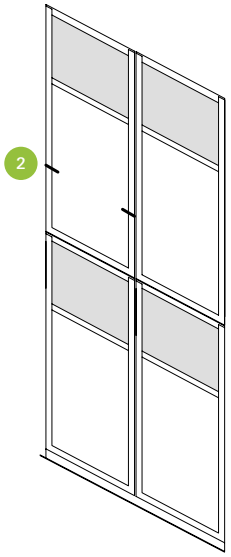
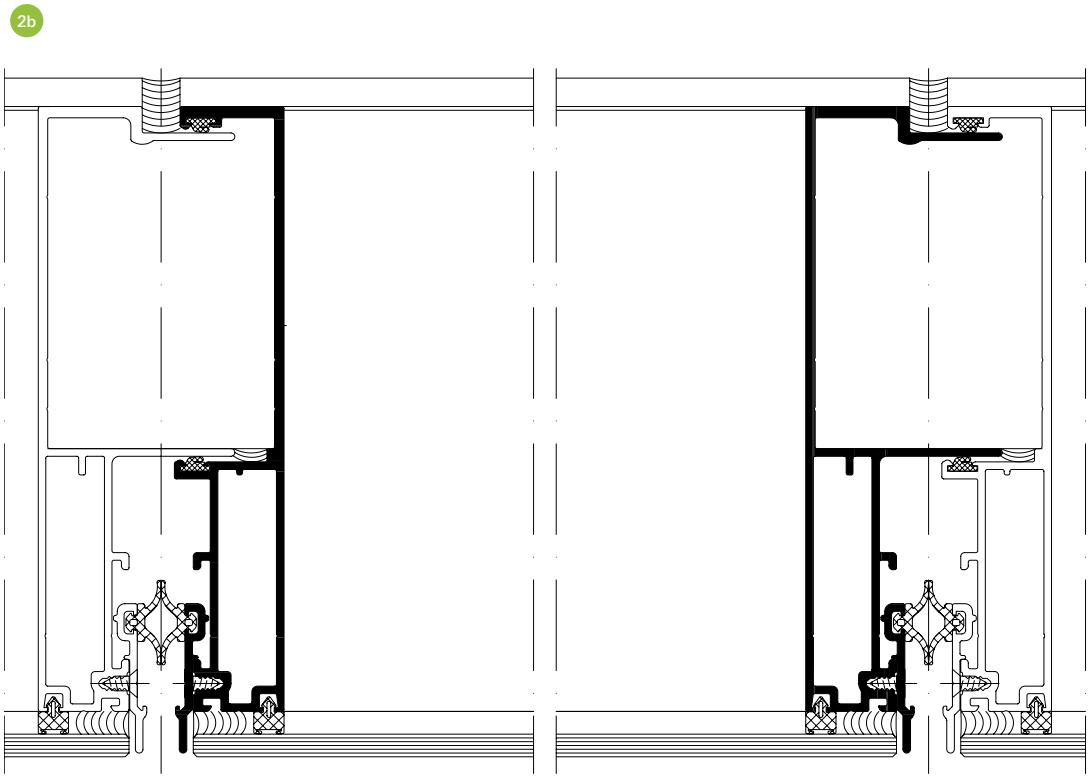
Mullion with single glazing





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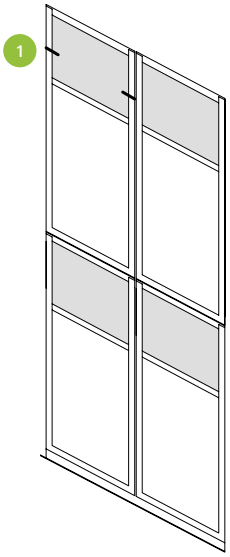
Mullion, spandrel area with insulating glass



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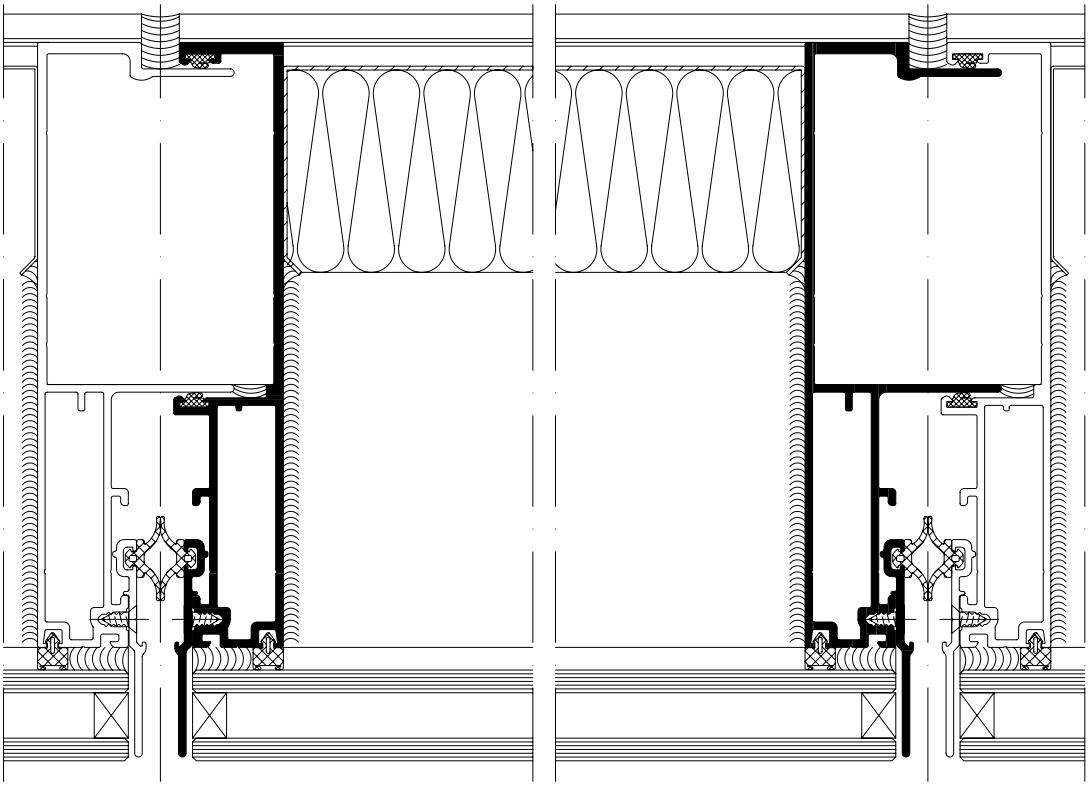

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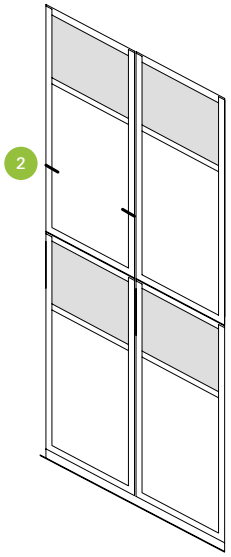
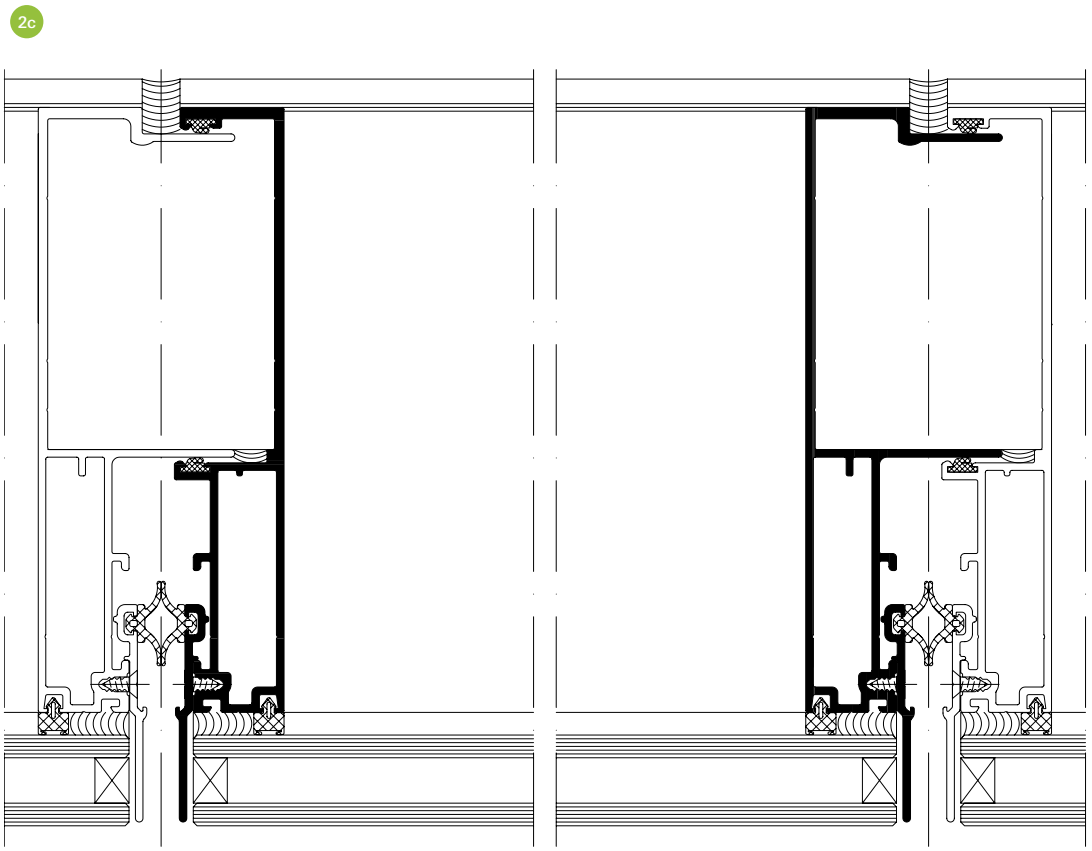
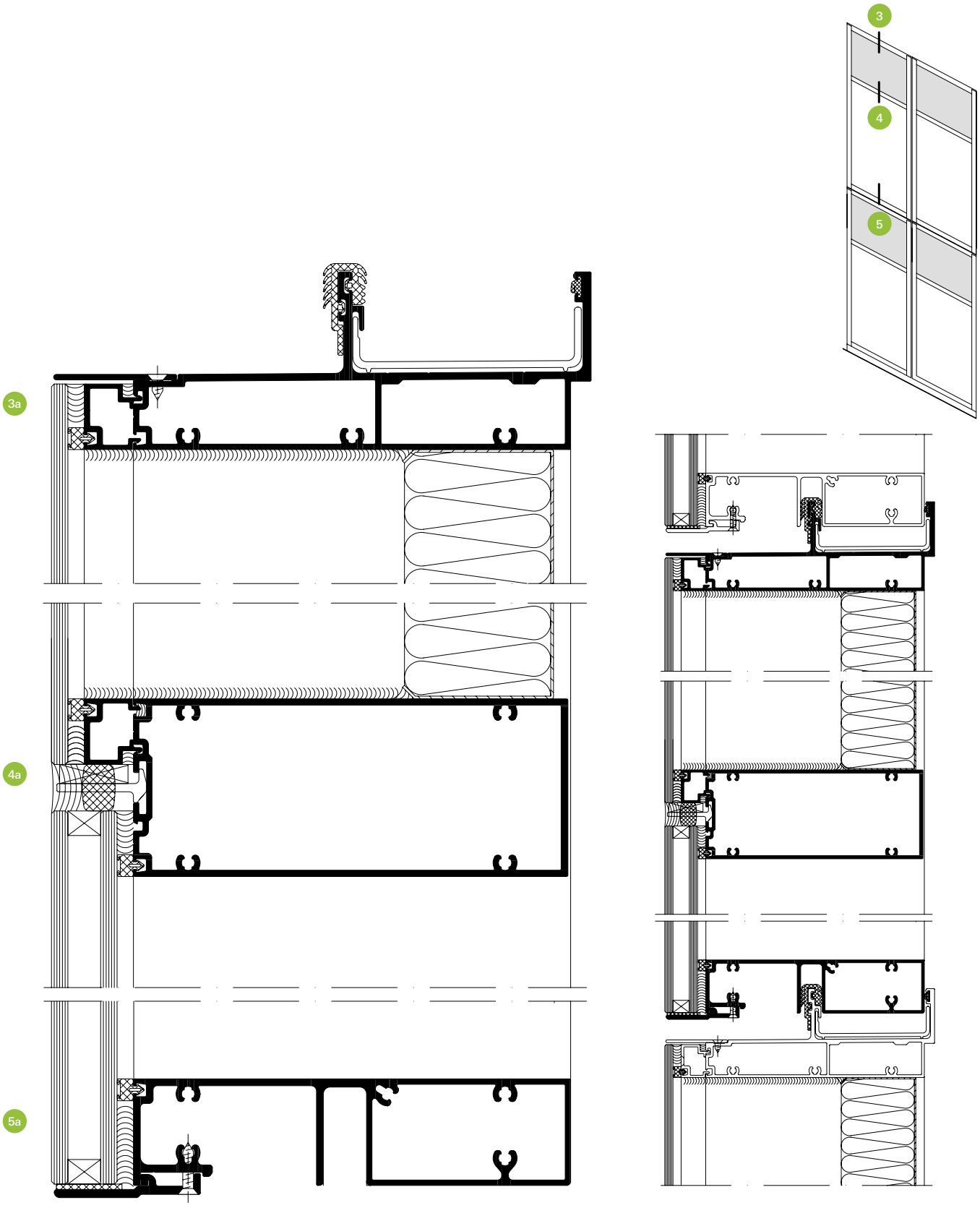
Mullion with insulating glass





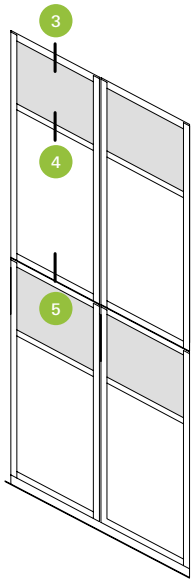
Scale 1:2

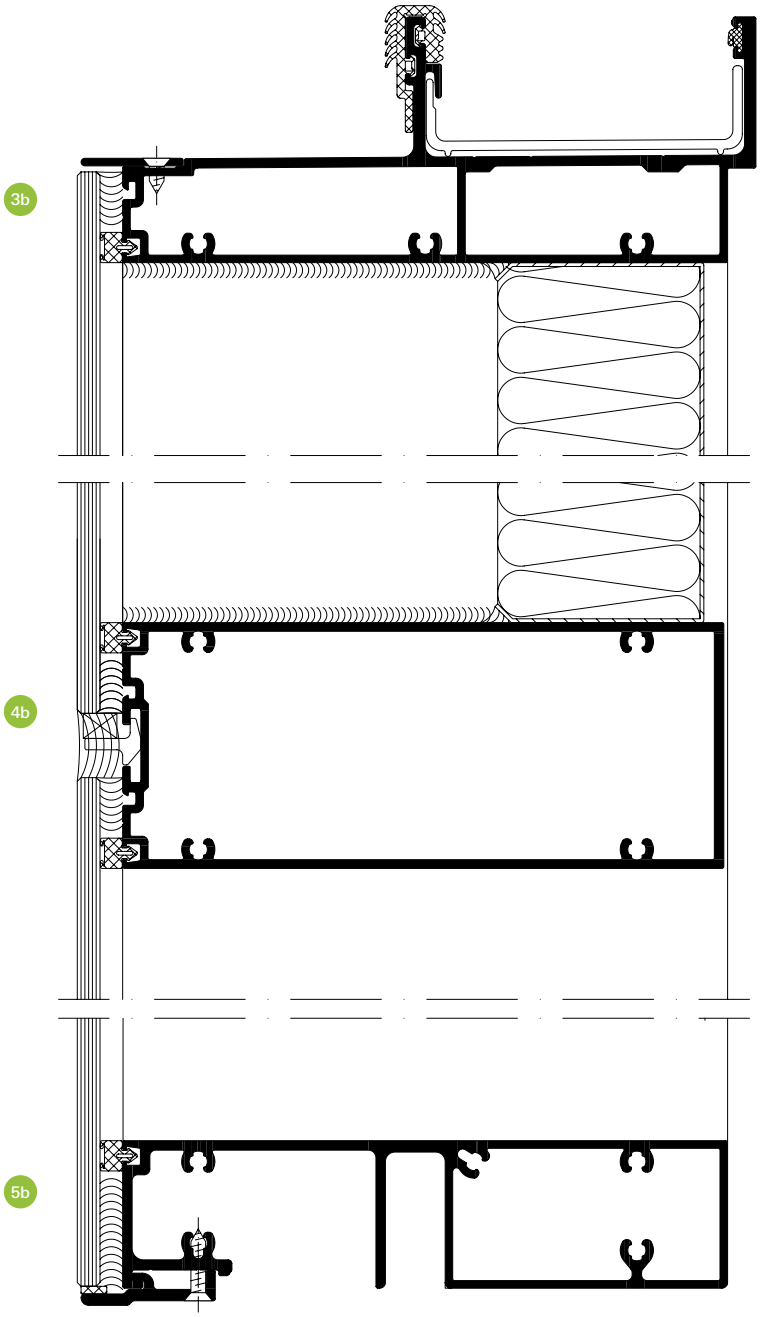
Transom - glazing bar, spandrel area with single glazing

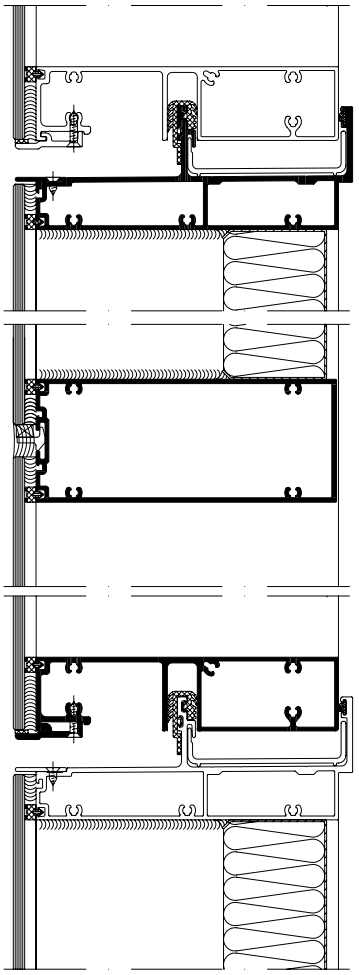


Scale 1:2

Transom - sash bar, with single glazing







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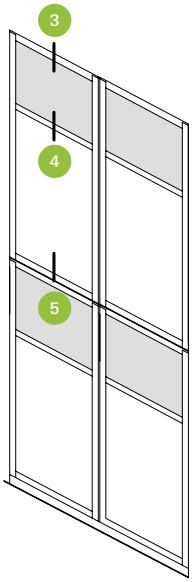
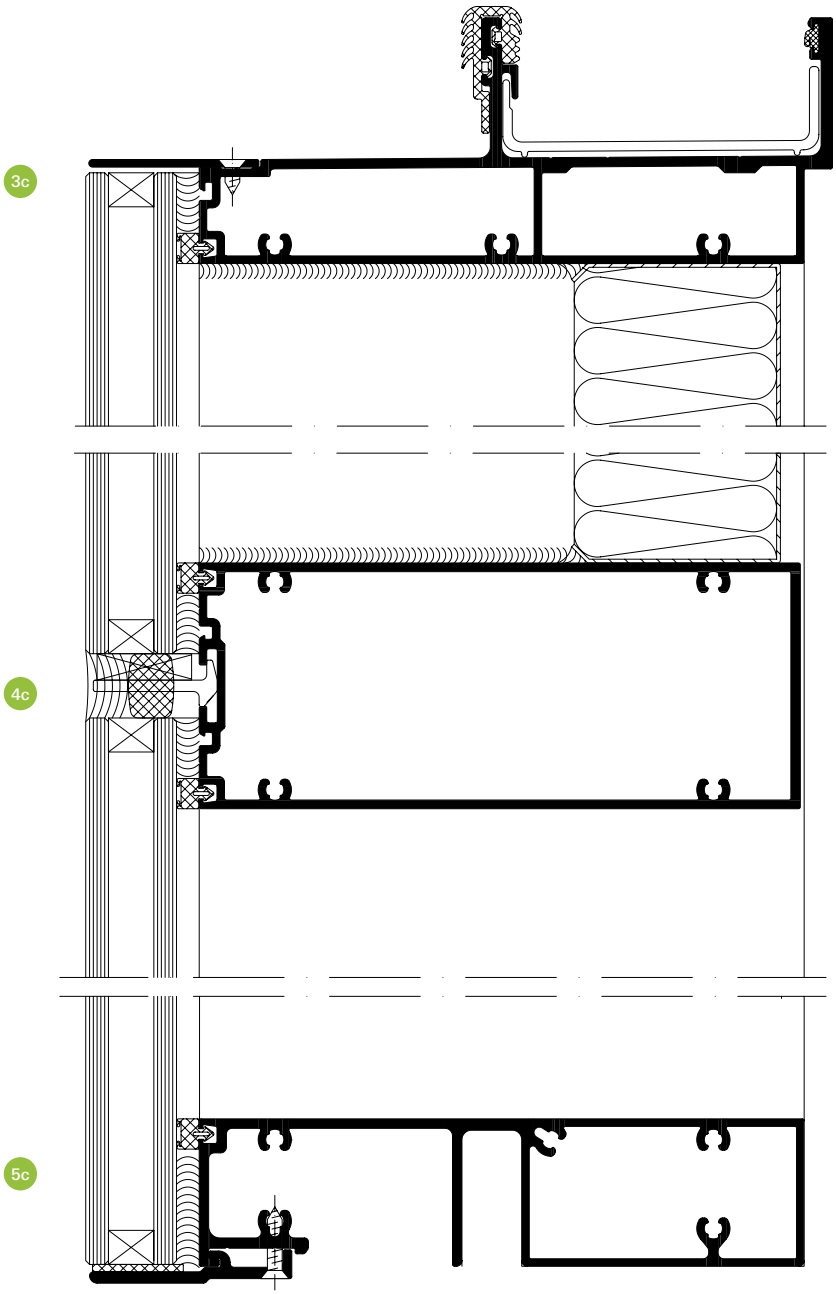
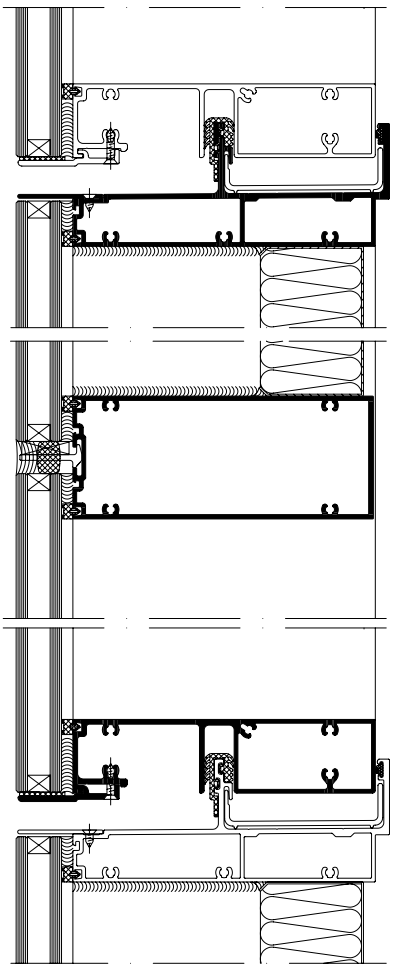
Transom - sash bar, spandrel with insulating glass







Scale 1:2

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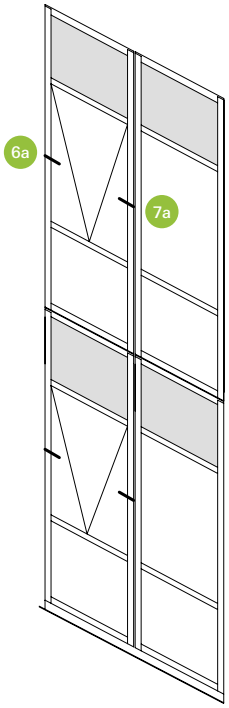
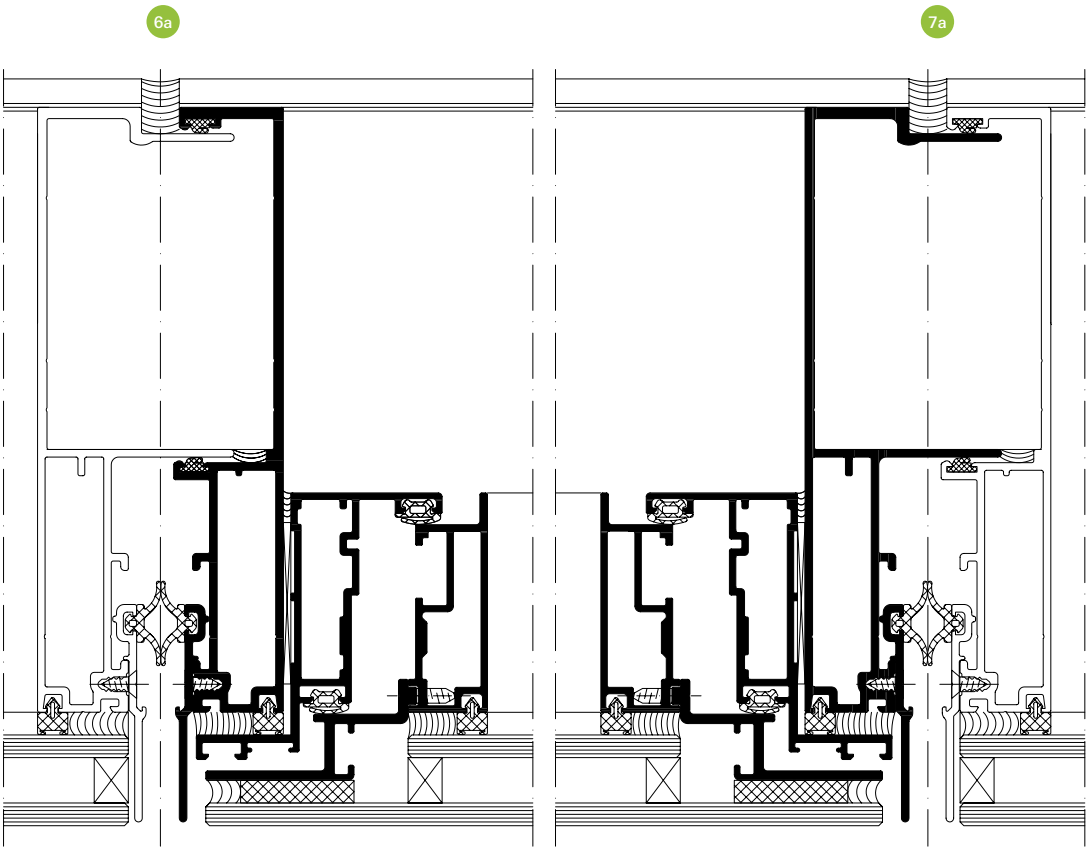
Window insert unit Schüco TropTec™ AW 58.NI with simple glass edge protection





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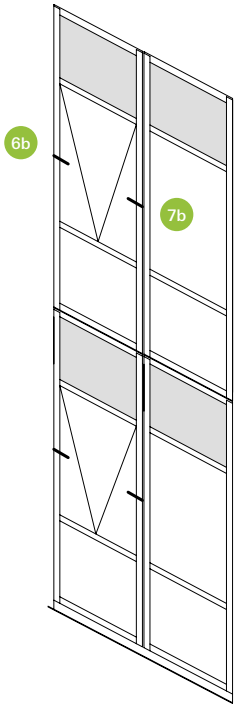
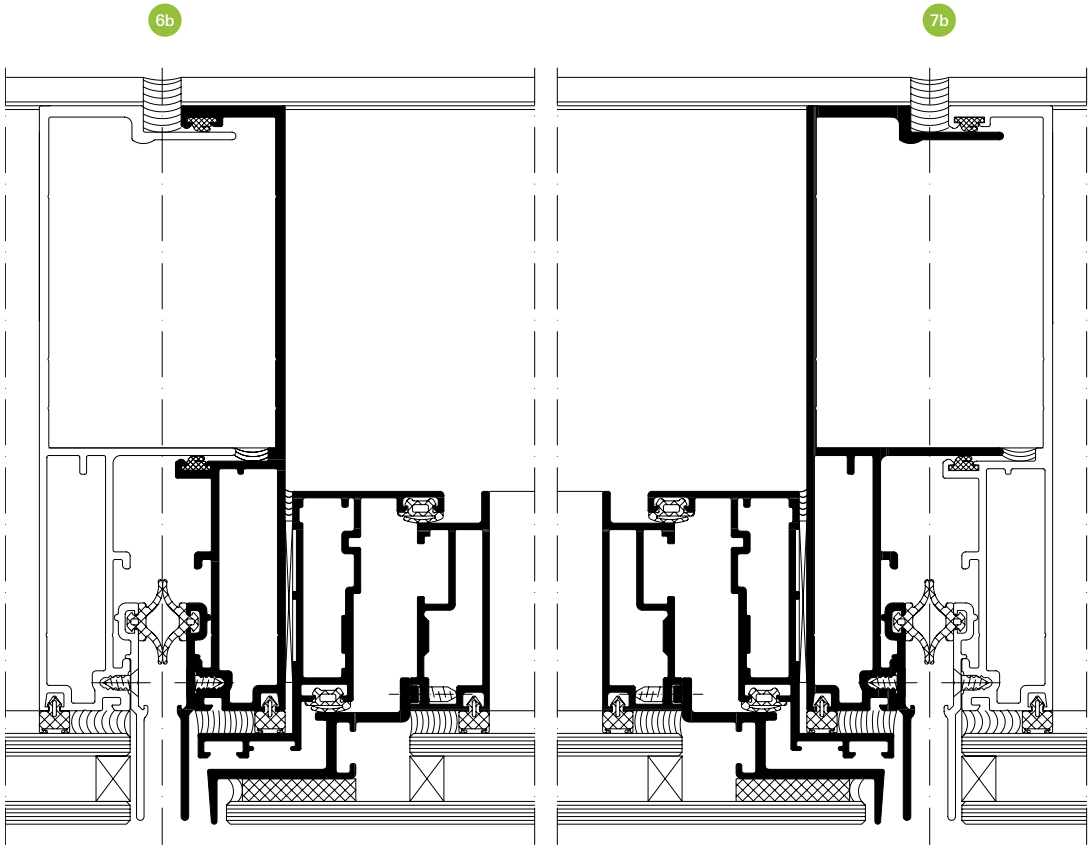
Window insert unit Schüco TropTec™ AW 58.NI with continuous glass edge protection





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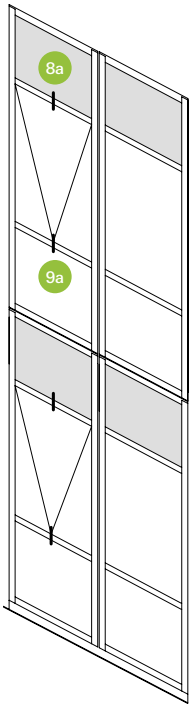
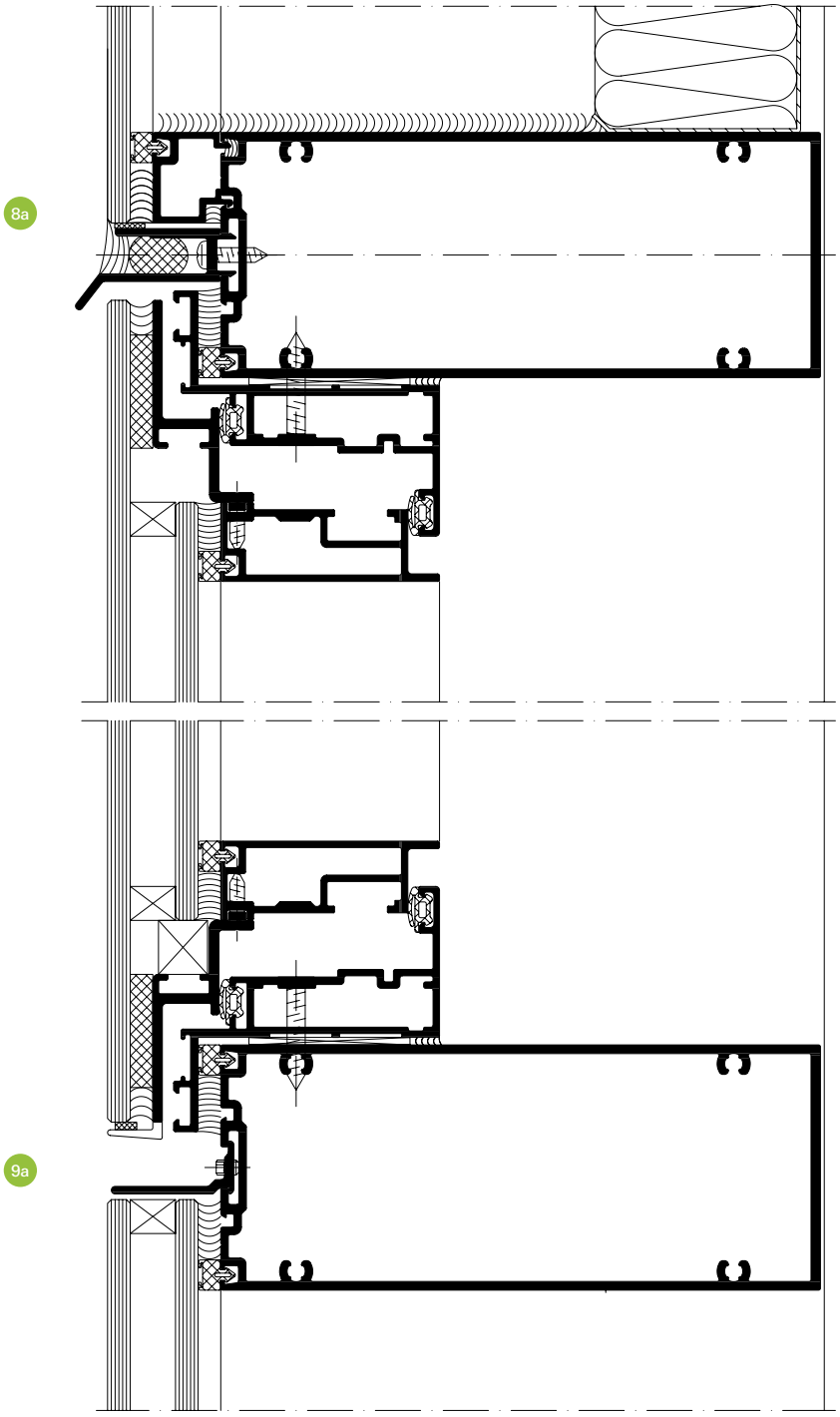
Window insert unit Schüco TropTec™ AW 58.NI with simple glass edge protection





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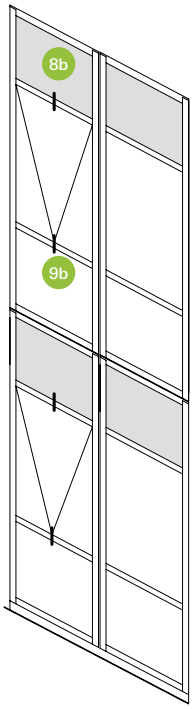
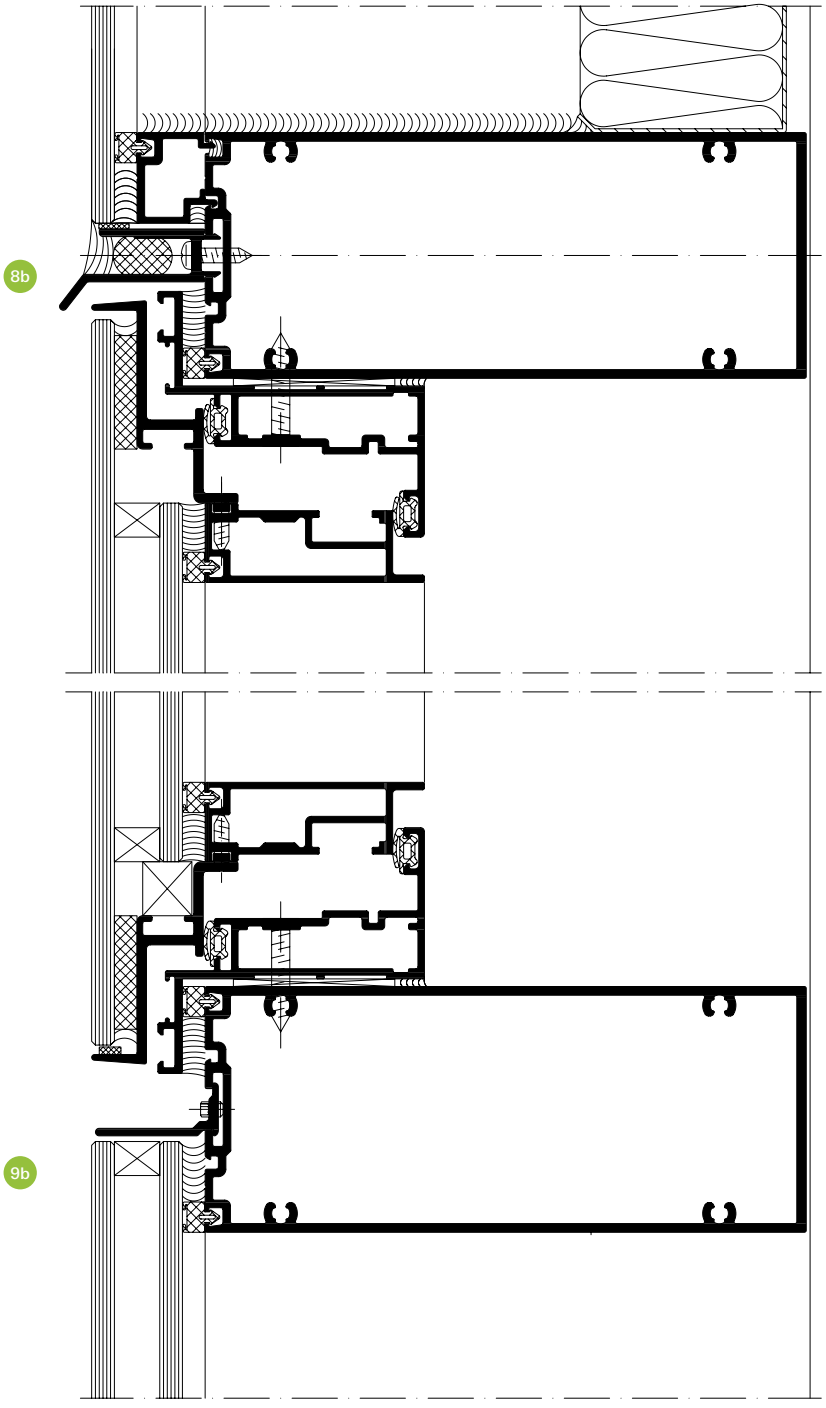
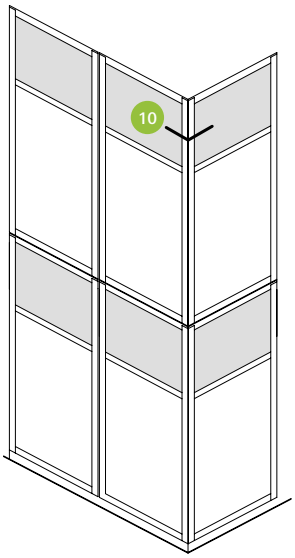
Window insert unit Schüco TropTec™ AW 58.NI with continuous glass edge protection





Scale 1:2

Design proposal: 90° outer corner, spandrel with single glazing



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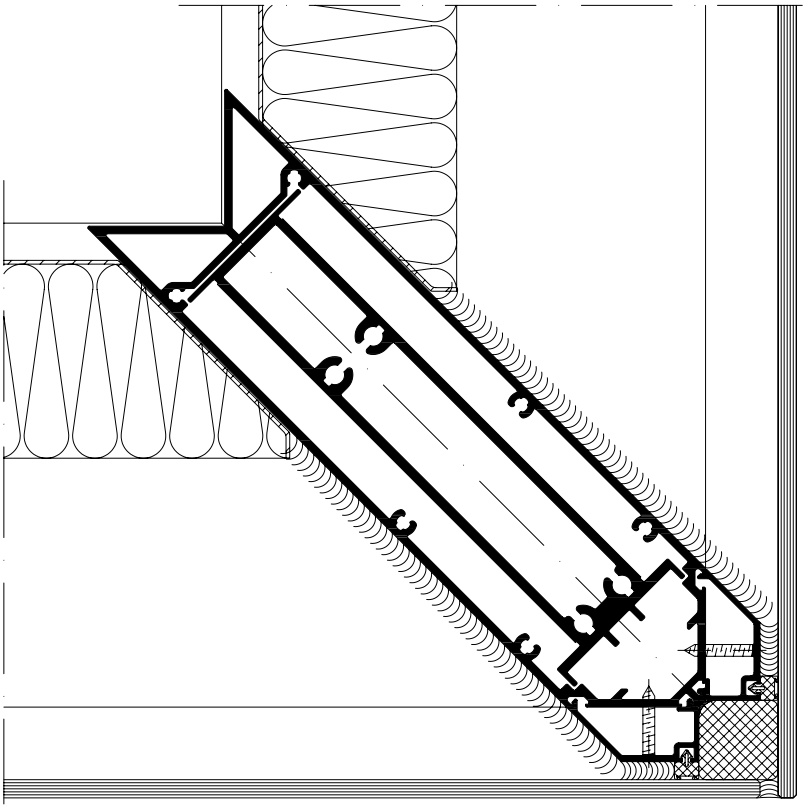

Scale 1:2

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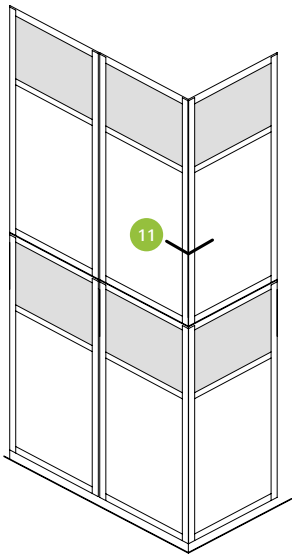
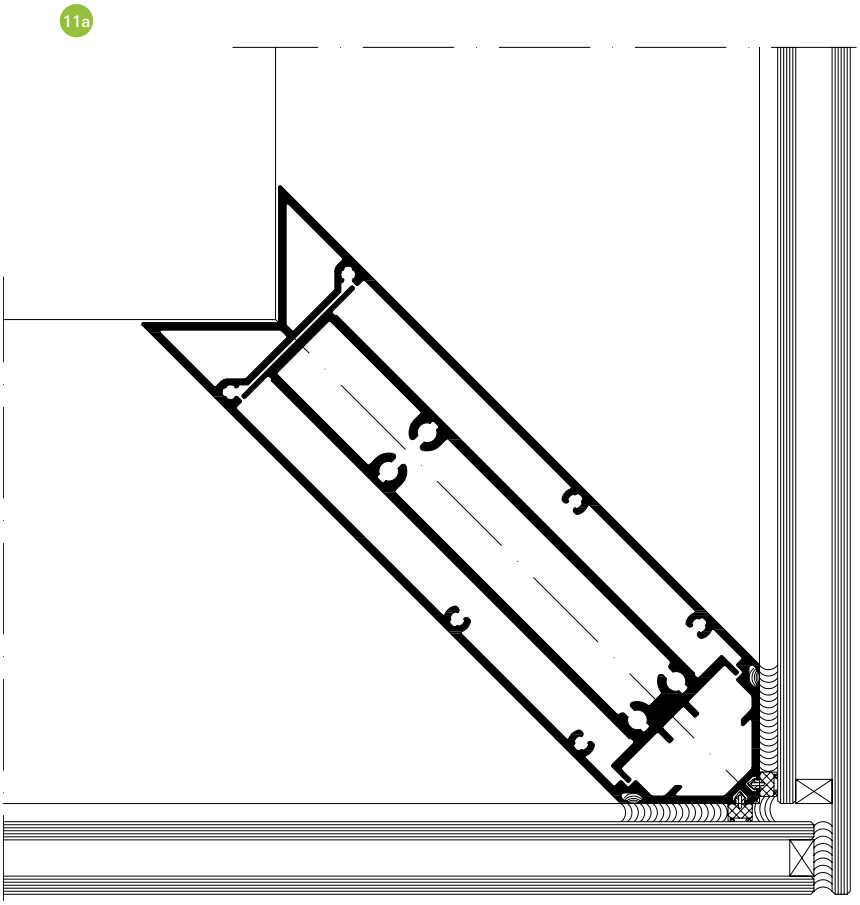
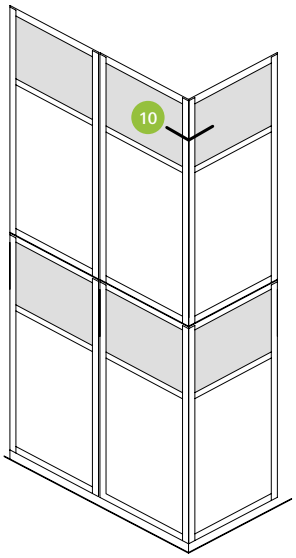
Design proposal: 90° outer corner with insulating glass

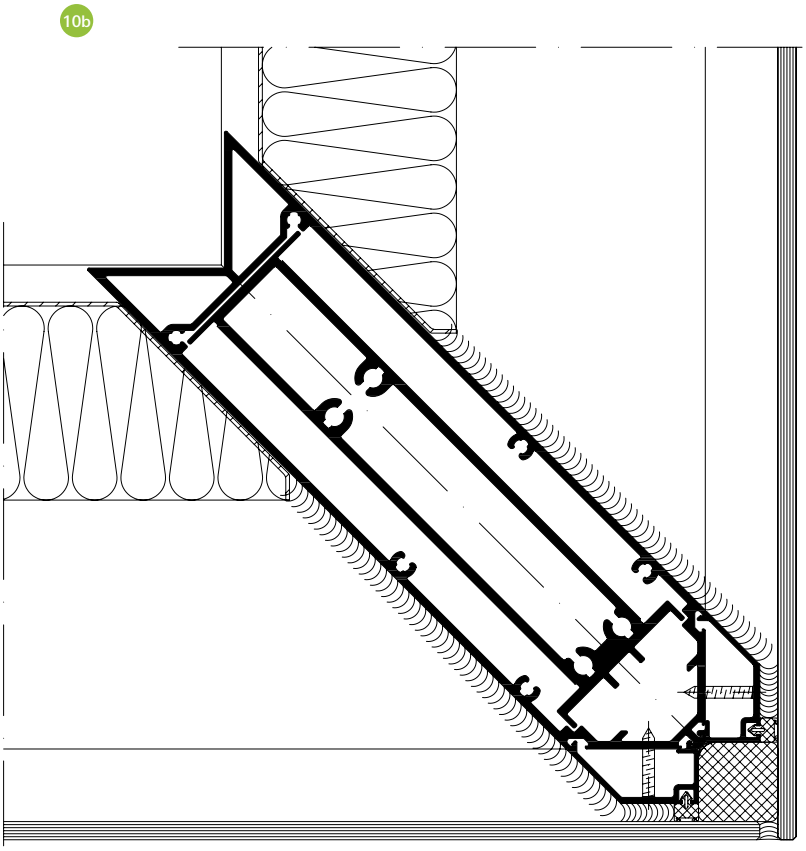




Scale 1:2

Design proposal: 90° outer corner, with single glazing

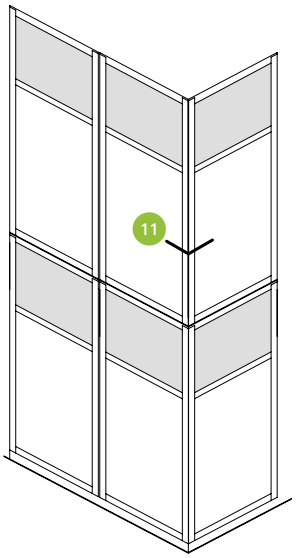


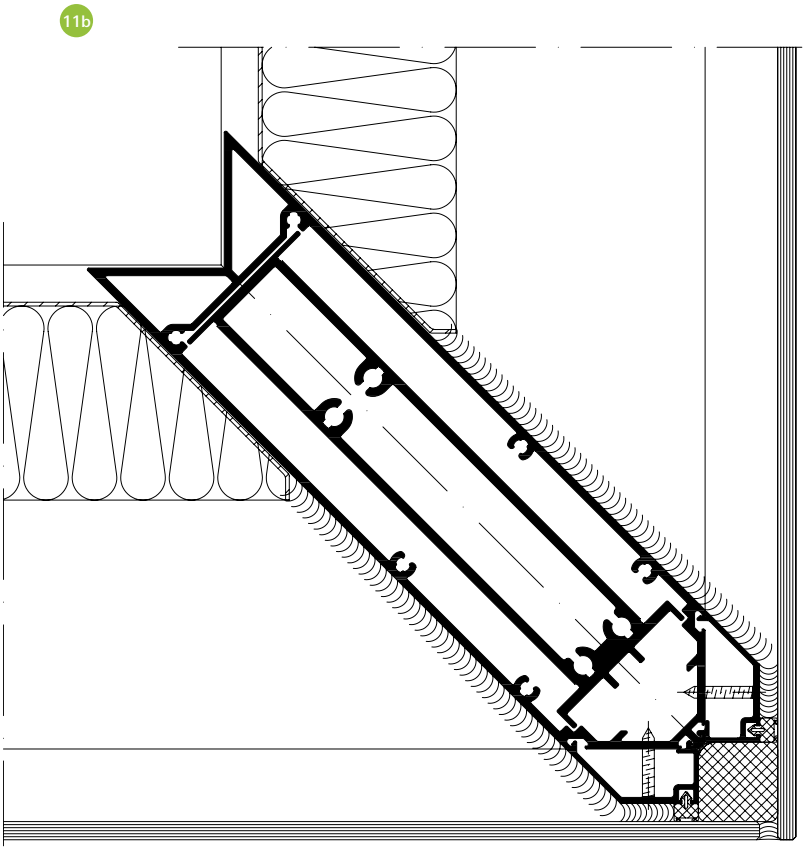


Scale 1:2

10.2014 / GSI / Schüco TropTec™ UC 65 SG.NI

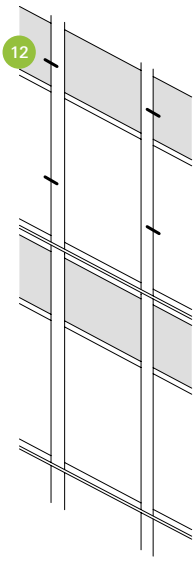
Design proposal: 90° outer corner, with single glazing



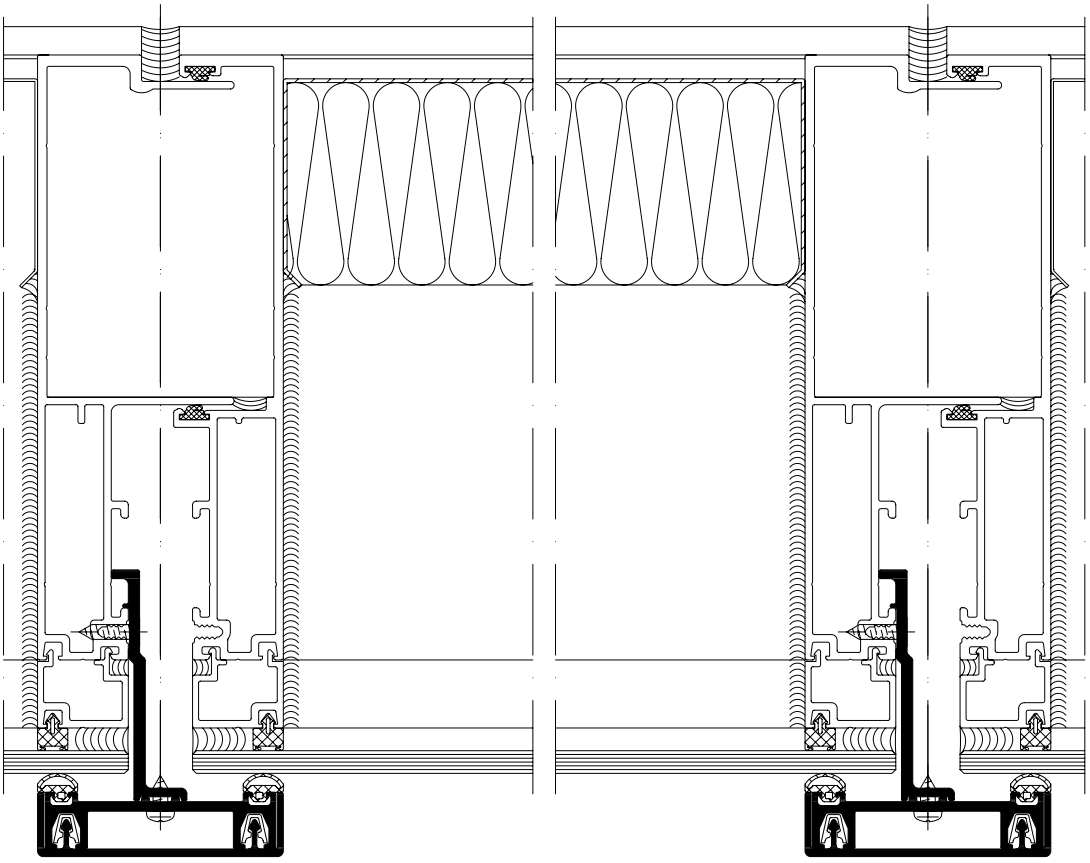


Scale 1:2

Design proposal: vertical emphasis with cover cap - Single glazing

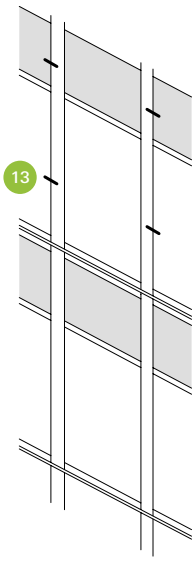


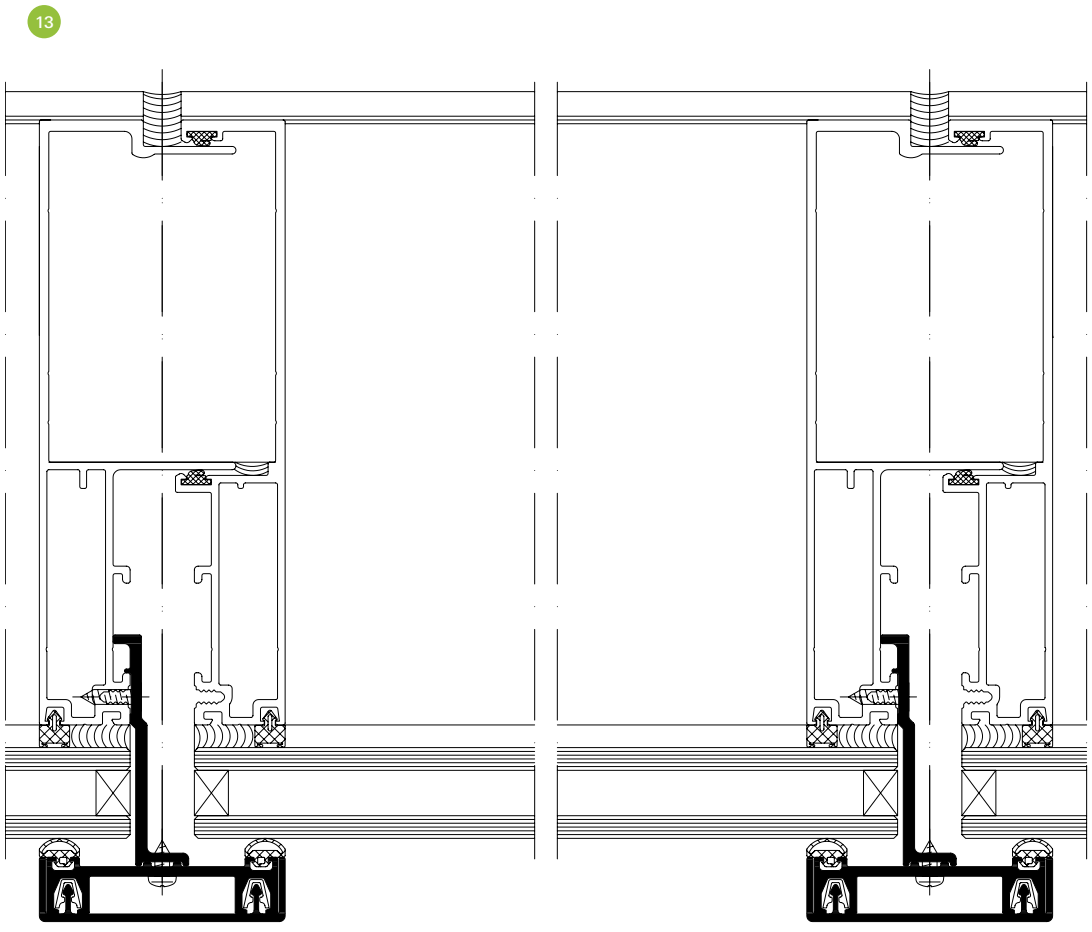
12



Scale 1:2

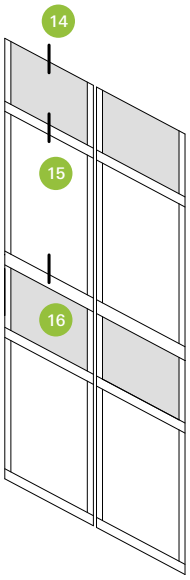
Design proposal: vertical emphasis with cover cap - Insulating glass

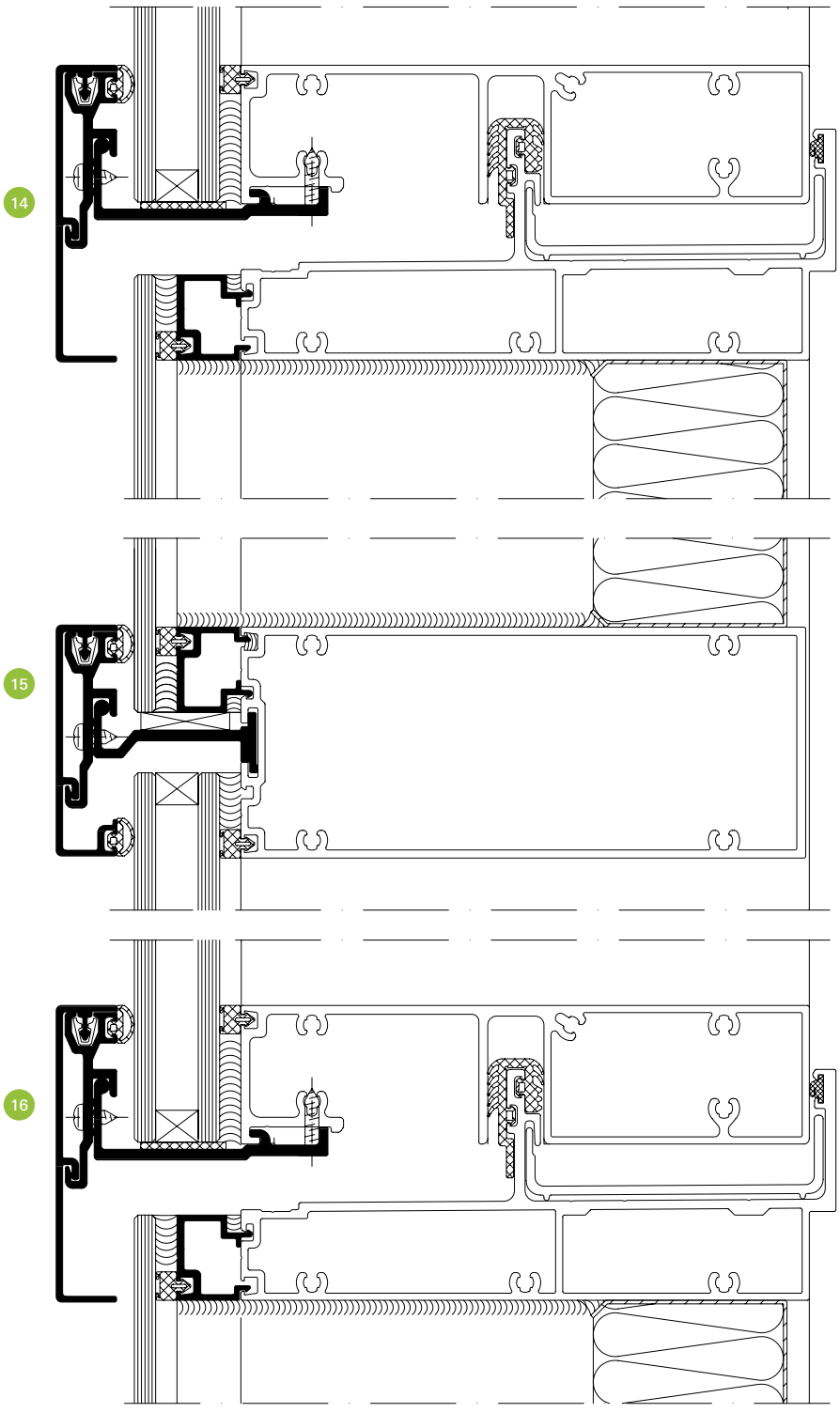




Scale 1:2

Design proposal: horizontal emphasis with cover cap





Scale 1:2

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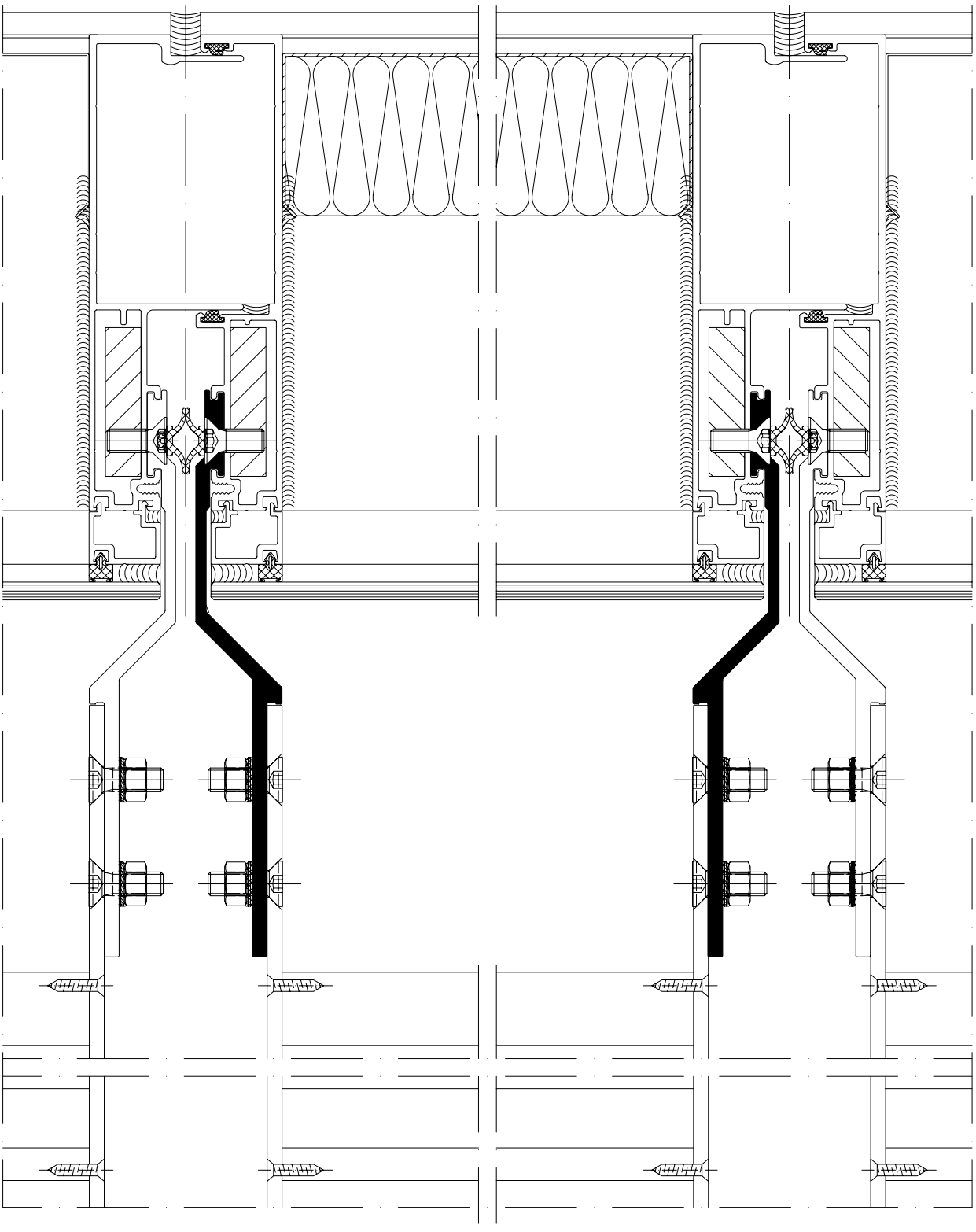
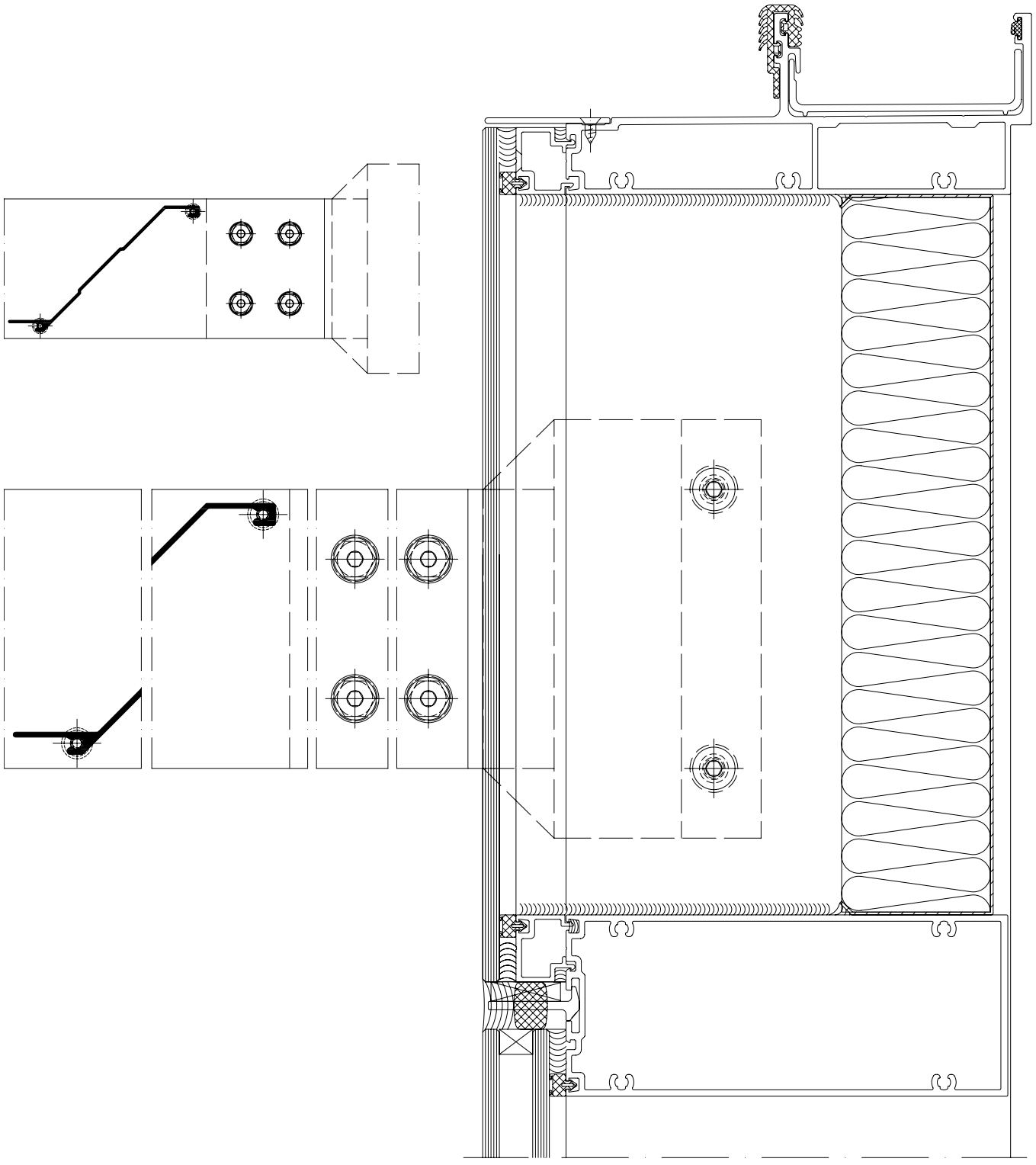
Mullion, with solar shading louvre blade



Scale 1:2

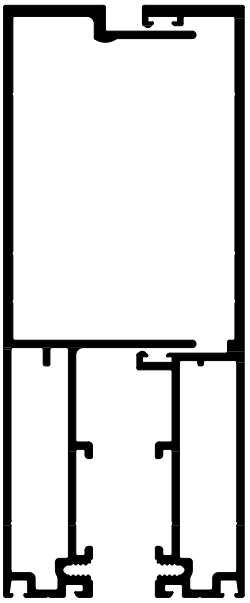
10.2014 / GSI / Schüco TropTec™ UC 65 SG.NI

Transom, with solar shading louvre blade

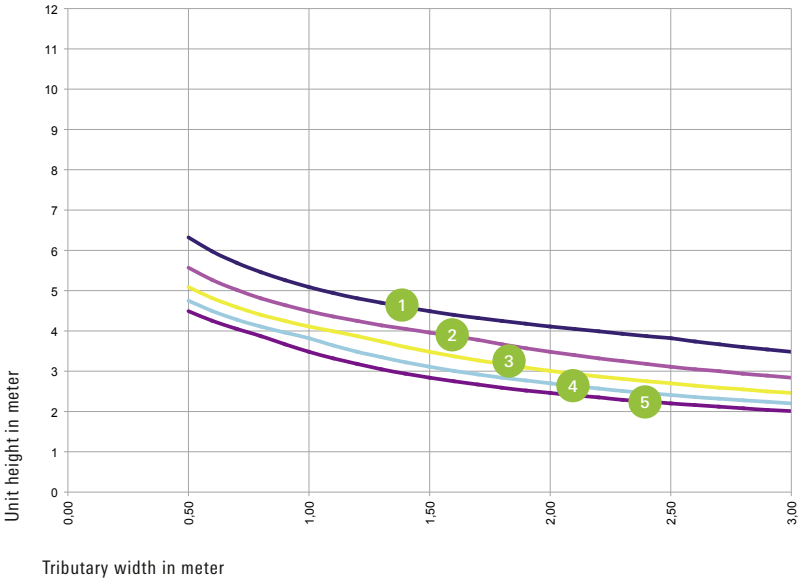


Scale 1:2

Wind load charts



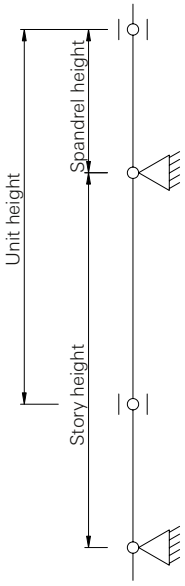
Deflection chart for mullion profile combination 444 010 and 444020 – single-span load-bearing member

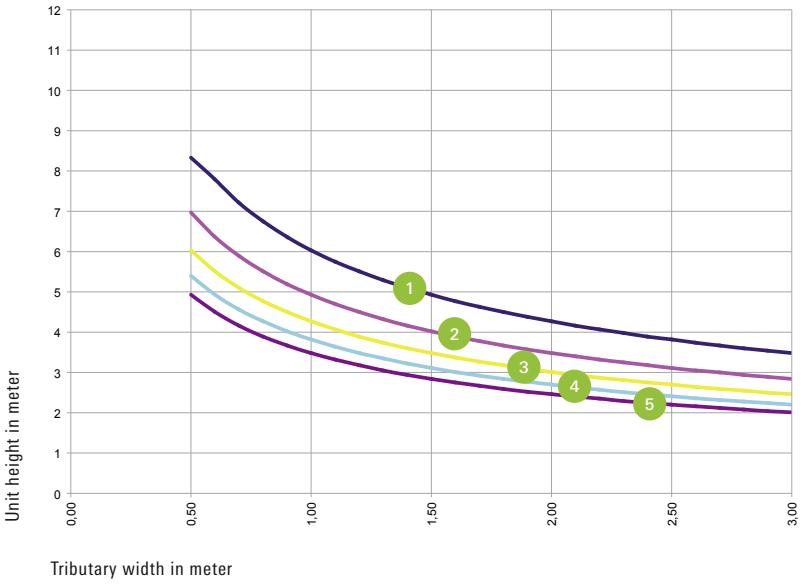


Wind load

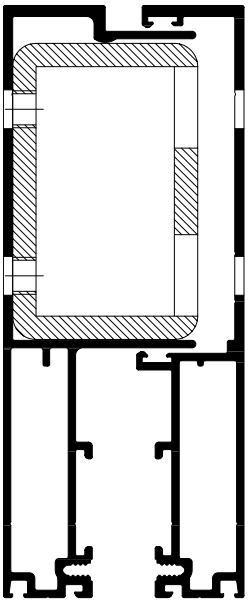
1. 1000 Pa
2. 1500 Pa
3. 2000 Pa
4. 2500 Pa
5. 3000 Pa

Deflection chart for mullion profile combination 444 010 and 444 020 – multi-span load-bearing member

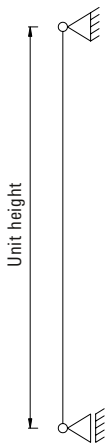


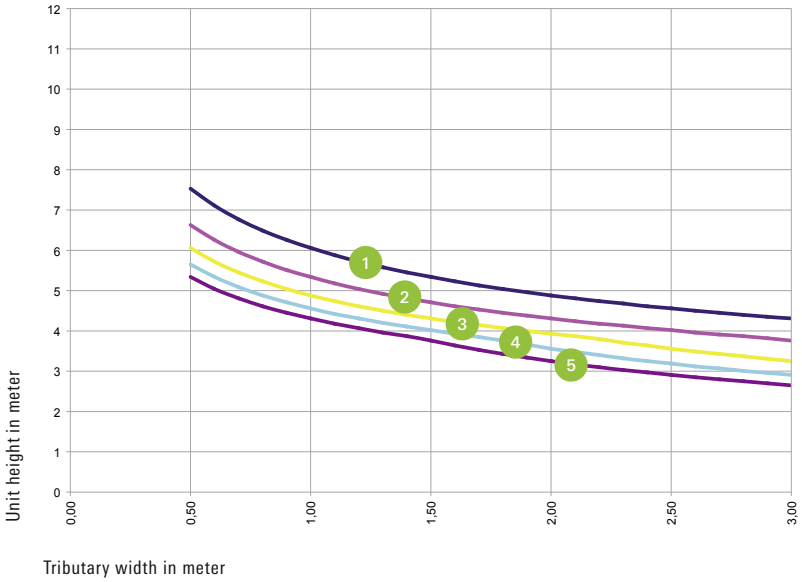


10.2014 / GSI / Schüco TropTec™ UC 65 SG.NI



Deflection chart for mullion profile combination 444 010 and 444 020 with 80/50/6,3 insert – single-span load-bearing member

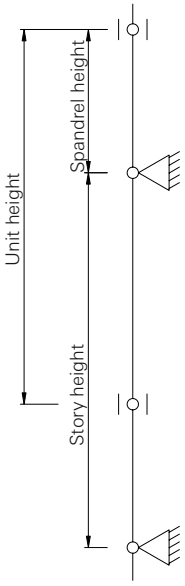


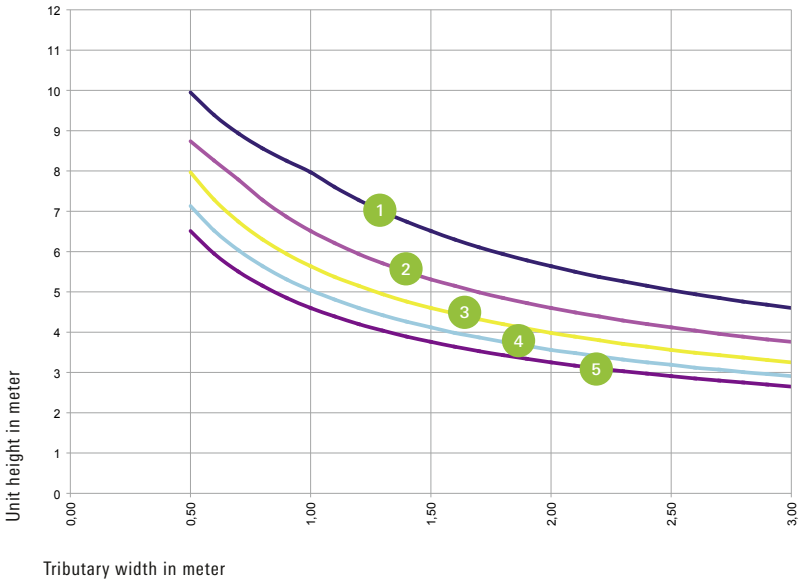


Wind load

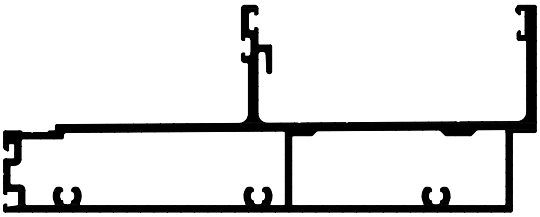
1. 1000 Pa
2. 1500 Pa
3. 2000 Pa
4. 2500 Pa
5. 3000 Pa

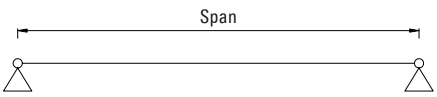
Deflection chart for mullion profile combination 444 010 and 444 020 with 80/50/6,3 insert – multi-span load-bearing member





Deflection charts

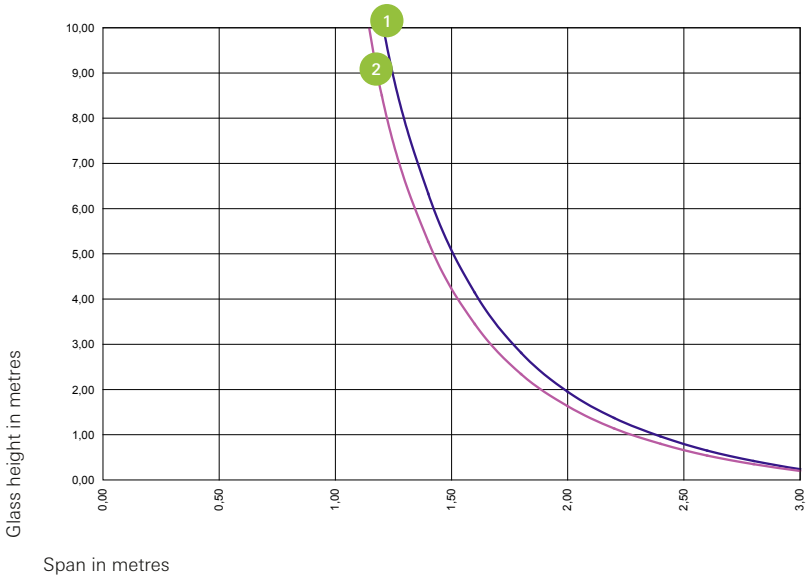


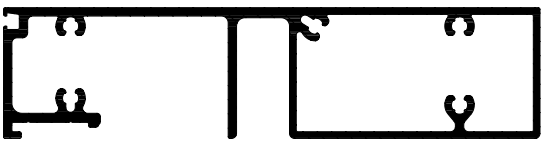


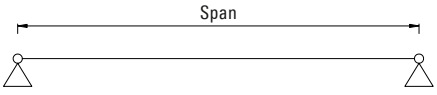
Glass thickness

1 20 mm
2 24 mm

Deflection chart for the bottom transom profile 444 030 due to the glass thickness



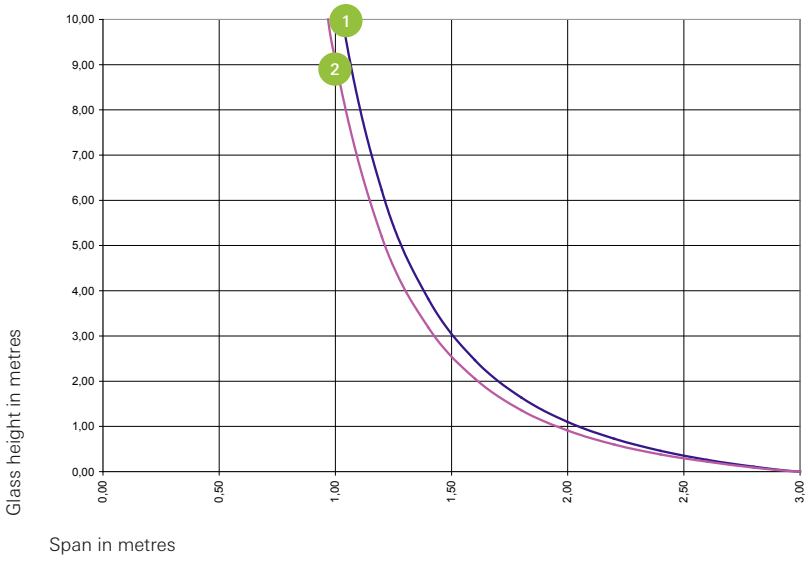




Glass thickness

1 20 mm
2 24 mm

Deflection chart for the bottom transom profile 444 040 due to the glass thickness



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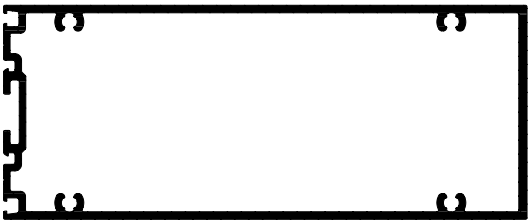
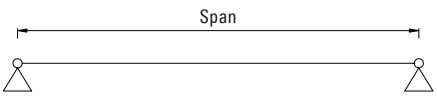
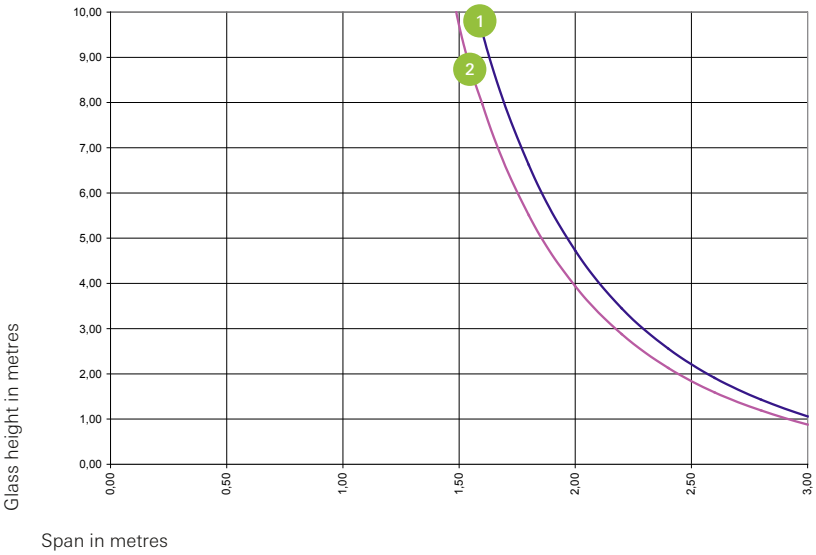


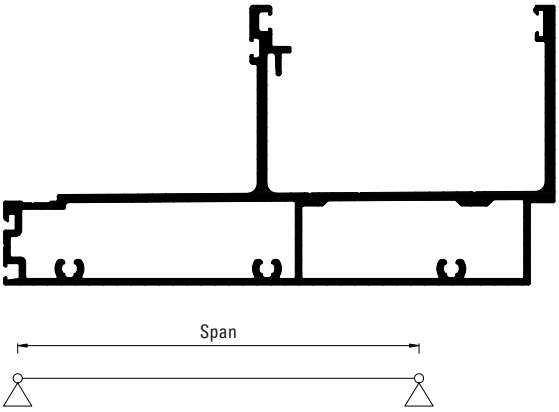


Glass thickness

1 20 mm
2 24 mm

Deflection chart for the bottom transom profile 444 050 due to the glass thickness

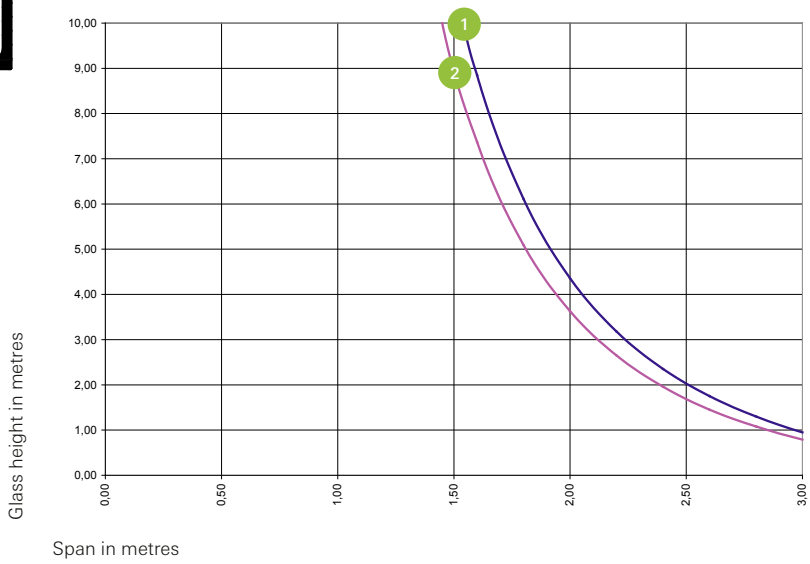


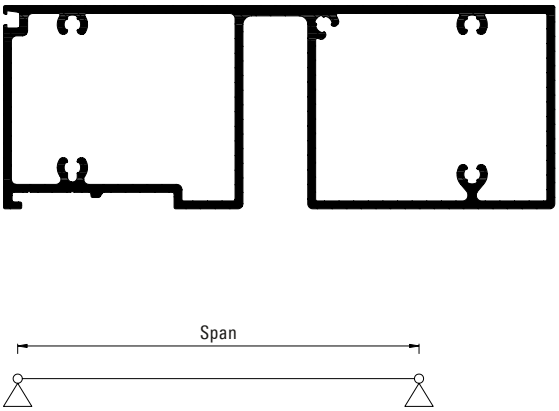


Glass thickness

1 20 mm
2 24 mm

Deflection chart for the bottom transom profile 444 270 due to the glass thickness

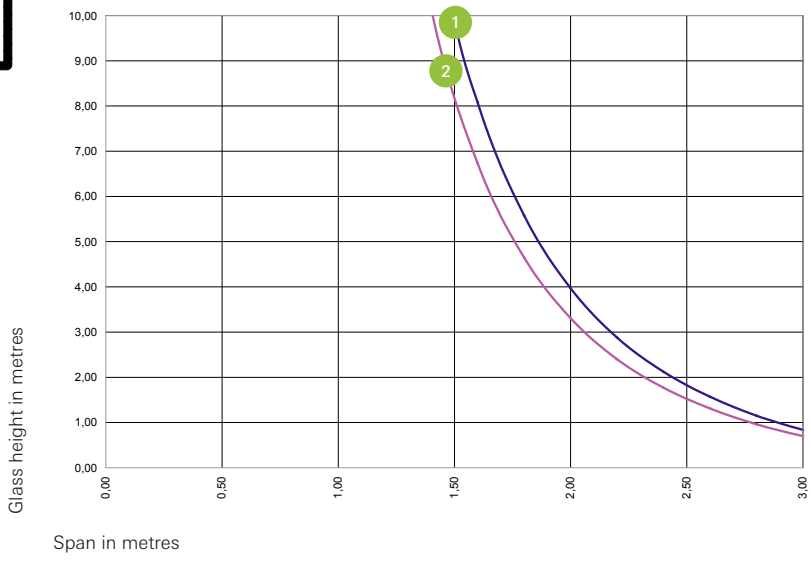




Glass thickness

1 20 mm
2 24 mm

Deflection chart for the bottom transom profile 444 280 due to the glass thickness



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The Company

Schüco offers system solutions for windows, doors and façades, which are geared towards individual user requirements and also satisfy the most exacting demands in terms of design, comfort and security. In this way, Schüco creates sustainable building envelopes which are in harmony with people, nature and technology. The innovations and ongoing development of products which are already a success make Schüco the first contact for many architects, developers, fabricators, investors and clients.

The Metal and PVC-U divisions of Schüco supply customised products made from high-quality materials and intelligent solutions for newbuilds and renovation projects. With 4,800 employees and 12,000 partner companies, Schüco is active in 78 countries worldwide and proves every day how climate protection and cost-effectiveness can go hand in hand.

Aluminium Systems

The future belongs to the multifunctional building envelope: aluminium profiles are the secure and creative basis for comprehensive solutions for façades, skylights, windows, doors, solar shading, conservatories, balconies, balustrades, and protection and security constructions. Pioneering window and façade technology from Schüco brings individual building systems together into a single unit.

Steel Systems

In partnership with Jansen AG, Schüco offers solutions for façade and door technology from high quality steel tubes and steel profile systems both in Germany, and in other selected countries. In this way, Schüco is opening a new dimension in system expertise: architectural freedom, technological solutions for almost all requirements and efficient fabrication are ideally complemented.

PVC-U Systems

Schüco offers you high quality PVC-U system technology which is distinguished by its broad range of products and comprehensive design options. Product reliability, attractive designs, a range of colours and the comfort of easy operation are only some of the advantages of Schüco PVC-U systems.

Schüco Alu Competence – design & solutions

As a specialist in aluminium profile technology, Schüco Alu Competence offers a broad spectrum of design options, from development to production, including surface finishing. Schüco Alu Competence manufactures comprehensive product solutions for mechanical engineering, industrial technology, advertising and the furniture industry, which are functional, cost-effective and flexible.

Schüco Technology Center

Developing. Testing. Shaping the future.

Schüco façade test rig
Bancada para testes de fachada da Schüco

Modern building envelopes are used for long periods of time in all climate zones of the world. They also offer a high degree of creative freedom with attractive surface finishes and impressive designs. On the technical side, a wide range of standards must be met, whilst special constructions and new solutions often require individual test procedures. For decades, this is why Schüco has coupled all product developments with its own tests.

The Schüco Technology Center is one of the world's leading test centres for windows, doors, façades and new technologies. When beginning to develop products, this allows Schüco to fabricate, test, continually improve and validate new systems, individual components or special solutions. The Technology Center is accredited as an independent manufacturing laboratory in nine areas by the national accreditation body for the Federal Republic of Germany (DAkkS). All tests are carried out with the required neutrality.

Component and material tests, as well as a wide variety of environmental simulations for all the climate zones around the world, are of central importance. The electromagnetic compatibility of various components and the bullet resistance of highly secure components are tested. The quality of Schüco products in line with standards is also tested with the help of a wide variety of tests for acoustics, weathertightness, security and durability. To do this, all the test specimens are created in the company's own samples workshop. The Technology Center also serves as an ultra modern training centre for trainees and placement students studying Mechatronics and Electrical Engineering / Electronics.

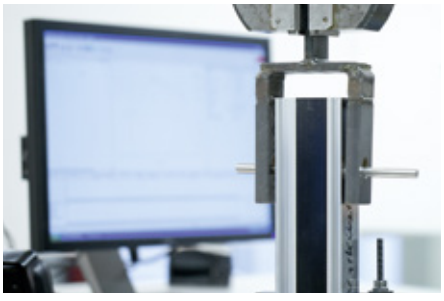

DAkkS
Deutsche Akkreditierungsstelle GmbH
Akkreditierung
Technologiezentrum der Schüco International KG
Karolinenstraße 1-15, 33609 Bielefeld
DAkkS

Accreditation from the German accreditation body

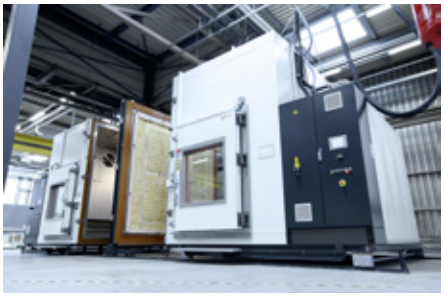
A wide range of options

Accurate tests ensure success

Schüco has a tradition of carrying out its own component and material tests, which guarantee the highest levels of quality. Testing began in 1967, and in 1968 Schüco purchased the first universal test machine. Today, comprehensive testing is carried out on all Schüco systems and components in a total of nine areas. Over 40 employees carry out several hundred complete tests per year, starting with small components through to complete façade units.



Component and material testing
Static and dynamic pressure, bending and tensile tests, as well as tests on the mechanical performance of system components.



Environmental simulation tests
Climatic testing of the building envelope and its components, as well as ageing of materials and products due to heat, cold, humidity, UV light and corrosion.

Electromagnetic compatibility and IP protection ratings
Testing the interference immunity and interference emissions of electronic components or non-Schüco products in line with standards, as well as their protection against solid foreign bodies and water.

Acoustics testing
System and unit testing of the airborne sound insulation of windows, doors or façades on original components in four rooms which are independent of one another.

Weathertightness tests
Testing and fault analysis for windows and doors, as well as for façade units up to 21 m in width and 13 m in height, on the largest indoor test rig in Europe, including a propeller test in accordance with international standards.

Ballistics tests
Preliminary testing in line with standards for all bullet-resistant units which can be fabricated from Schüco window, door and façade systems.

Samples workshop
Production of all forms of prototype and test units, just like in an independent metal fabrication company, across more than 2,000 m^2.

Mechanics, durability, safety and security
Durability and operation tests for windows and doors, blinds, opening devices, cavity-fitted gearboxes, electric drives and much more.

Schüco quality management in accordance with ISO 9001

Schüco International KG was first awarded the Certificate for Quality Management Systems on 24.10.92 by the DQS (Deutsche Gesellschaft zur Zertifizierung von Managementsystemen GmbH) in accordance with ISO 9001.

Since then, it has been ensured that the quality management system at Schüco complies with the requirements of ISO 9001 and is
implemented accordingly.


ZERTIFIKAT

SCHÜCO

Schüco International KG

ISO 9001 : 2008

DQS GmbH


IQNet

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

Schüco International KG

ISO 9001 : 2008

Registration Number: DE-000226 QM08

What does quality management in accordance with ISO 9001 mean?

This quality management system ensures that all products from Schüco are planned, developed and produced in accordance with specific rules. The prerequisite for this is that all the divisions and departments dealing with Schüco products either directly or indirectly also meet the high standards of a certified quality management system.

In the end, this means that each individual employee and all areas are responsible for the high quality of the products and processes. Product-related quality marks and/or standards are also supported by the quality management system in accordance with ISO 9001.

Schüco documentation app

Whether it's used for architects, in the workshop or at the construction site – the Schüco documentation app is efficient, intuitive and always up-to-date.

Schüco offers comprehensive access to all documentation with the Schüco documentation app. From order and fabrication manuals through to information for architects and brochures – the information can be accessed directly and sent immediately by e-mail. In addition to straightforward and fast navigation within the documentation, the focus is also on keeping the available data up-to-date.

The app is available for the Android, iOS and Windows operating systems, enabling the user to easily access information from Schüco. Clearly sorted kiosk-style by category, documentation can be easily viewed or downloaded onto end-user devices. The information is therefore also available when there is no network coverage. Data that has been previously downloaded can be easily updated. There is a clearly structured contents page for fast navigation within a document.

Product benefits

- Intuitive operation
- Online and offline availability of the current data
- Full text search and bookmarks
- Send individual pages by e-mail
- Double page view in landscape format, individual pages in portrait format
- Zoom and scroll within a document
- Available in several languages

Aluminium is...

- the building material of the future, as it maintains its value. Only aluminium can give architecture such a variety of combinations in form and colour.
- durable and stable, as it neither corrodes nor rots. Building components last a lifetime without the need for further surface treatment. It stays as good as new.
- easy to maintain, as it is anodised or colour-coated. With the exception of cleaning, no maintenance is necessary.
- versatile, and can be fabricated into preformed assemblies. These can be produced in practically any shape.
- a material for design, ideal for use in contemporary architecture. All kinds of shapes and colours can be produced.
- non-flammable, used together with energy-absorbing materials to produce T90 fire doors.
- thermal insulation, aluminium profiles for windows, doors and façades are double-chambered and rolled together with insulating bars.
- energy efficient, aluminium can be melted down repeatedly, expending the minimum amount of energy. Aluminium becomes more economical each time it is recycled.
- light and stable, with a specific gravity of only 2.7 g/cm^3. Savings can therefore be made on the cost of the building shell. It has a high degree of stability which can be calculated with precision, making it ideal for large area windows, doors and façades.
- secure, and particularly burglar-resistant both because of its strength and when used with special fittings.
- sustainable, ideally suited for use in green buildings.

Aluminium and environment

A success for you and the environment:
Schüco aluminium systems

- Aluminium is light, solid and non-corrosive – a maintenance-free, long life material.
- Aluminium can be shaped with precision to make energy-saving building components, sealed against the elements and with a high degree of sound and thermal insulation.
- The mineral bauxite, from which aluminium is extracted, is present in the earth in almost inexhaustible quantities.
- Over 60% of the energy required to extract aluminium worldwide is generated from environmentally friendly, renewable sources, namely water power.
- When aluminium is melted down for recycling, only 5% of the original energy input is required.
- Old aluminium can be recycled again and again with no loss of quality. When a building is dismantled, almost all of the scrap aluminium can be recycled.
- 35% of aluminium consumption today already consists of recycled aluminium. This percentage is steadily increasing.

Comprehensive resource recycling plays an important role within the building industry.

Materials recycling

A/U/F

An organisation serving the environment

Aluminium and environement in window and façade construction

Factory cut-offs and reclaimed materials from the renovation of old buildings are all recycled for future use. For many years, Schüco International KG and its partners have actively employed and promoted recycling.

Schüco services

Planning and designing buildings

Online services
Schüco provides comprehensive online planning aids, e.g. Architect Information (technical documentation), specification texts, CAD drawings, construction details, construction and calculation programs.

www.schueco.com/services

Reference library
Schüco presents international reference projects with photos and structural details in the reference library and now also on the move with the Schüco App. This enables you to have all the information at the touch of a button anytime, anywhere.

www.schueco.com/references

In dialogue
Schüco keeps in constant touch with architects, specifiers and investors: Profile architecture magazine, special publications, topic-based events, Schüco on Facebook and Google+.

www.schueco.com/dialogue

Consultancy service
Besides the online tools, Schüco also provides comprehensive personal consulting for every stage of the build.

www.schueco.com/architects-contact

Schüco Company Profile

Schüco – the market leader for innovative building envelopes,
stands for global expertise in windows, doors and façades

Head Office, Bielefeld, Germany

Founded
1951 in East-Westphalia

Head Office
Karolinenstr. 1–15
33609 Bielefeld
Germany

Managing Partner
Dr. Ing. Hinrich Mählmann

Schüco Executive Management Board
Andreas Engelhardt, Managing Partner and CEO
Horst Platzhoff, Member of the Executive Management Board
Helmut Marzahn, Member of the Executive Management Board

Expertise
Window and door systems
Façade systems

Network
More than 12,000 partners worldwide,
as well as architects, developers and investors

Employees
4,800 employees worldwide at present

International presence
78 countries

Group turnover
€ 1.5 billion (2013)

Schüco International KG
www.schueco.com

Schüco – System solutions for windows, doors and façades

Together with its worldwide network of partners, architects, specifiers and investors, Schüco creates sustainable building envelopes which focus on people and their needs in harmony with nature and technology. The highest demands for design, comfort and security can be met, whilst simultaneously reducing CO_2 emissions through energy efficiency, thereby conserving natural resources. The company and its Metal and PVC-U divisions deliver tailored products for newbuilds and renovations, designed to meet individual user needs in all climate zones. With 4,800 employees and 12,000 partner companies, Schüco is active in 78 countries and achieved a turnover of 1.5 billion euros in 2013.

Art. No. 97388/10.2014

SCHÜCO