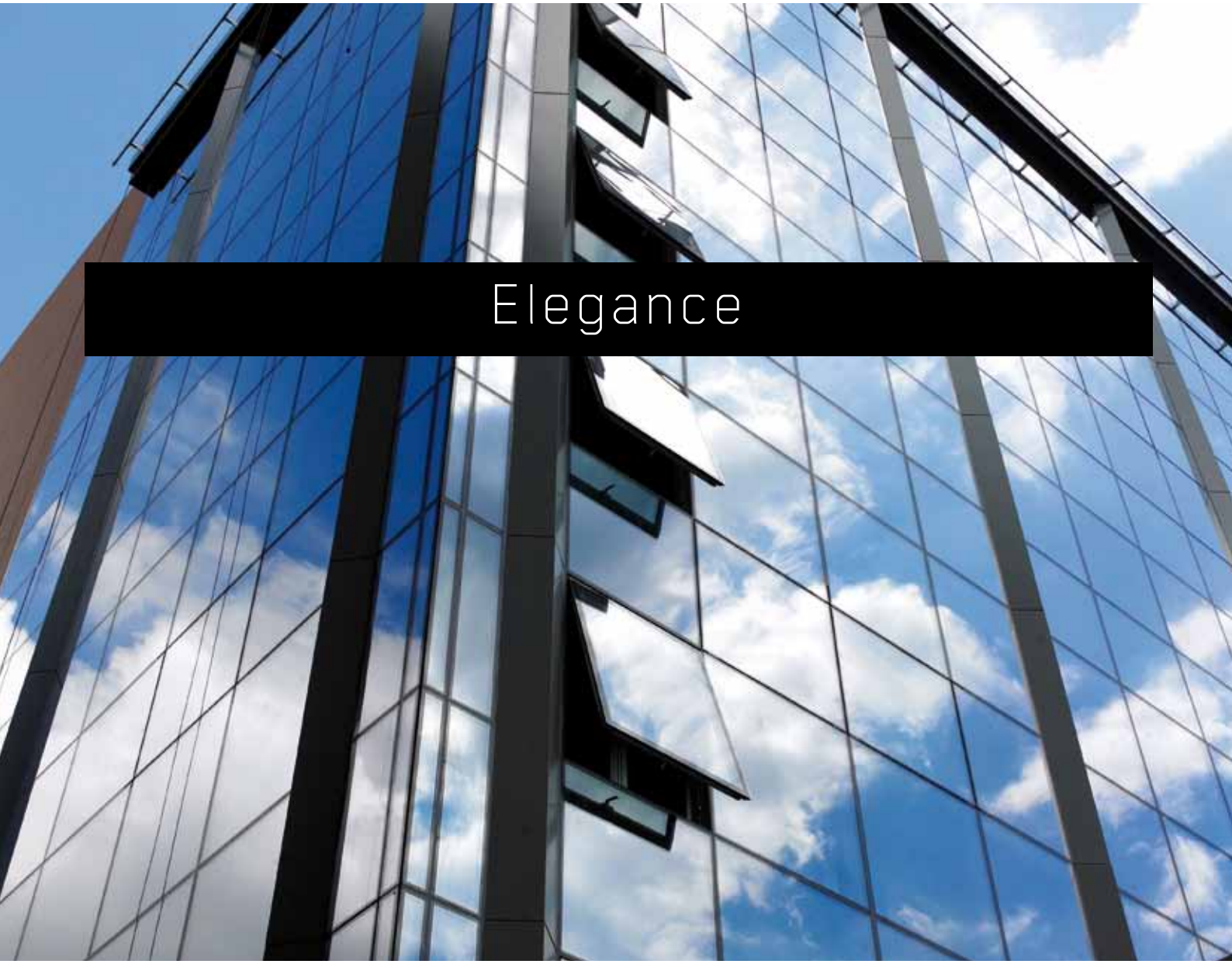
sapa:
buildingsystem
ARCHITECTURAL ALUMINIUM SOLUTIONS



Elegance

Curtain Walling

Sapa Building System

Elegance 52 is a comprehensive curtain wall system that combines technology and design with the demands of contemporary building design and construction. All Elegance 52 systems use a common substructure with a width of 52 mm, allowing a slim sightline, whilst maintaining the necessary strength and inertia requirements for most applications.

Weather performance, thermal insulation, building connection, ease of fabrication and installation were the key factors that influenced the design of Elegance 52.

Extensive range of solutions

All Elegance 52 applications are made up from a set of durable mullions and transoms with a profile width of 52 mm. A large range of profile depths is available to suit the structural requirements and to give the most economical solution.

» Elegance 52 is available in different versions, each providing unique design features:
- Elegance 52 ST (standard)
- Elegance 52 HL (horizontal lining)
- Elegance 52 IT ("italian" window)
- Elegance 52 SI (super insulated)
- Elegance 52 IN (industrial look)
- Elegance 52 FR (fire resistant)
- Elegance 52 Burglary resistant (class 2)
- Elegance 52 SX (structurally clamped)
- Elegance 52 SX IT ("italian" window)
- Elegance 52 SG (structural glazing)
- Elegance 52 GF (glazed frame)
- Elegance 52 Eco
- Elegance 52 Eco IT
- Elegance SC (Solar Control)
- Building Intergrated Photovoltaic

» Elegance 52 can be used in vertical, sloped or roof applications, it offers several solutions for connections to other levels of curtain walling and building materials, whilst always affording maximum weather performance and minimal sightlines.

» Elegance 52 system provides integration with existing window and door systems of the Sapa Building System product range.

Fabrication and Installation

» Drainage can be both field / compartmental or mullion drained.

» Specially developed aluminium or steel profiles can be inserted in the mullions to assure a higher inertia for extremely large spans and to provide a continuous mullion connection and anchorage.

» System of dry glazing by means of EPDM gaskets.

» All window and door systems of the Sapa Building System product range have accessories specifically designed to allow easy integration in the curtain wall.

» Depending on the type of application the system can be mullion-mullion or mullion-transom connected. Front mounting of transoms is made possible by spring cleats. A notched mullion solution has been developed for situations when extra support for the transoms is required.

» Punch tools specifically designed for the Elegance 52 ensure accurate and fast prefabrication of drainage holes and transom cut outs.

» Drilling jigs ease the positioning of fixing pieces when prefabricating the system.

Elegance 52 ST

Elegance 52 ST is an externally capped thermally broken curtain wall system that offers many design options by the use of different designer mullions and cover caps. Elegance 52 ST offers solutions for vertical, slope and roof applications and can solve facetted curtain wall requests.

System features

- Elegance 52 ST can accept glass and panel depths of 4 to 50 mm.
- The system can be self-supporting or can be used in combination with a supporting structure.
- ST is able to accept tolerances and movements caused by thermal expansion, without compromising the weather performance.
- Weather resistance: AE 750 (EN 12152); RE 750 (EN 12154); 3000 Pa (EN 13116)

Dimensions	
Sightline	52 mm
Mullion depth	41 - 273 mm
inertia (Ixx: wind)	9,57 - 1649,7 cm^4
Transom depth	22,5 - 199 mm
inertia (Ixx: wind)	3,67 - 515,84 cm^4
inertia (Iyy: glass)	1,09 - 53,03 cm^4

Glazing	
Infill thickness	4 - 50 mm
Glazing method	dry glazed with EPDM gaskets

Performance		
Thermal break		4 - 36 mm
Thermal insulation EN ISO 10077-2		$U_{cw} < 1,4$ W/m^2K with glass $U_g = 1,1$ W/m^2K
Air permeability	AE 750	EN 12152
Water tightness	RE 750	EN 12154
Wind resistance	3000 Pa	EN 13116
Acoustics:		
with glass 6/15/4	$R_w(C;C_{tr}) = 34(0;-2)$dB	
with glass 10/15/6	$R_w(C;C_{tr}) = 36(-1;-2)$dB	
with glass 12/16/44.2	$R_w(C;C_{tr}) = 42(-2;-5)$dB	
Impact test	class 5	EN14019

This information is only an indication. For more information, please consult your local Sapa Building System branch.

Design

» A wide range of decorative cover caps (bull nose, rectangular, aerofoil, etc) gives the freedom to design visually interesting glazing.

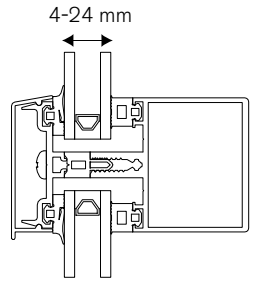
» By combining different cover caps for horizontal and vertical applications, a wide range of external features is possible.

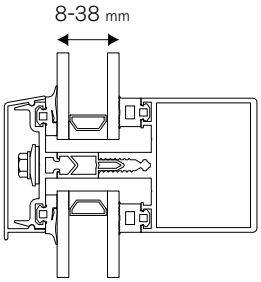
» Several designer mullions are available for internal design features.

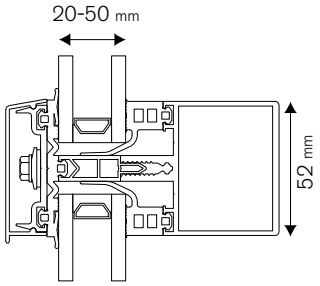
» Mullions and transoms can be flush at the inside or can be specifically different to emphasis the vertical design complementing the total building design.

» Several special locations such as 90° angle mullions or variable angles have been designed with a minimal use of material allowing slim sightlines.

» By using the various designer mullions / transoms, in combination with the extensive colour range, the different options are practically unlimited.

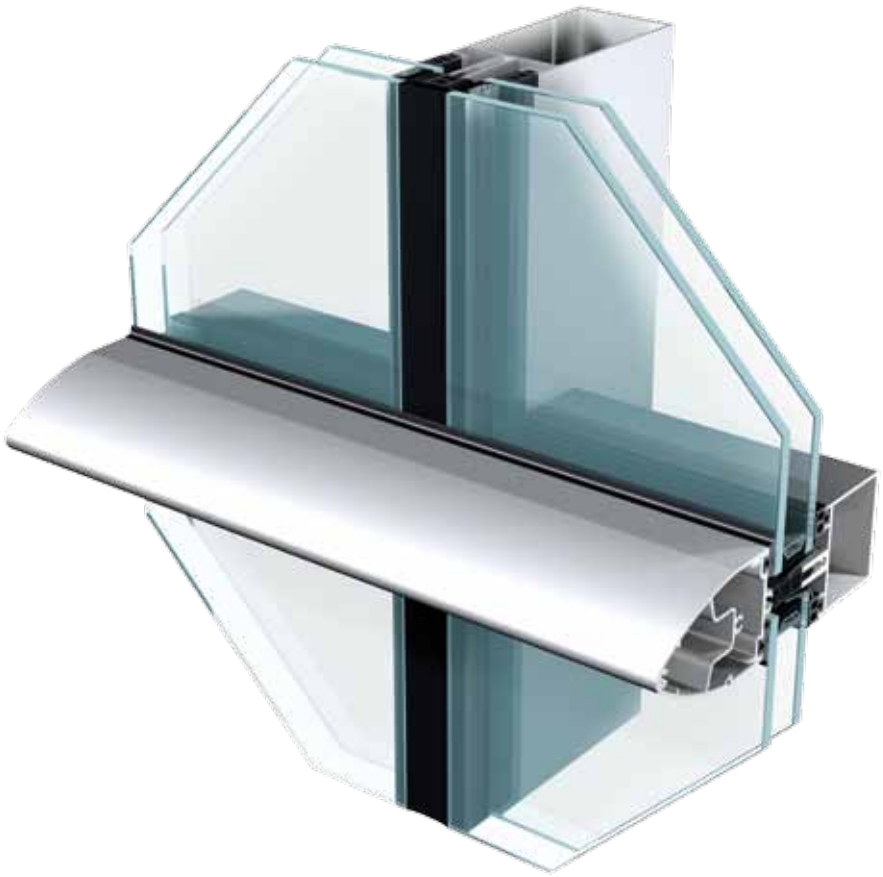


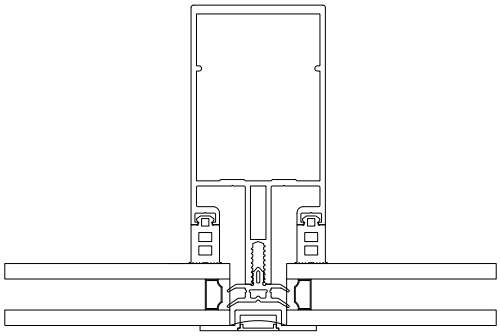


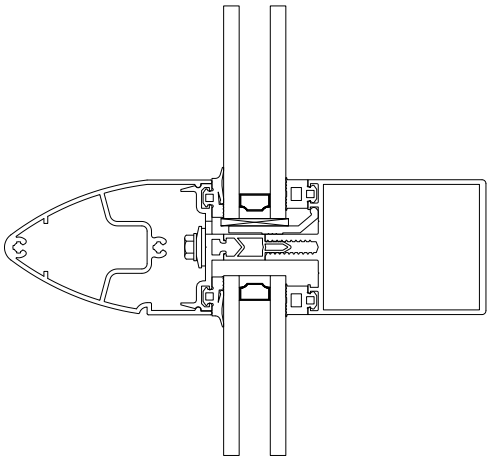


Elegance 52 HL

Elegance 52 HL is a specific solution when horizontal lining is required. The system is based on the Elegance 52 ST basic structure and creates a horizontally continuous effect by changing the vertical cover caps for a hidden profile sealed by a gasket. The hidden profile still allows the tight sealing of the glass against the structure, the gasket masks the vertical detail putting more emphasis on the horizontal cover cap. The horizontal cover caps can be chosen out of a wide range of profiles to integrate with the total building design.



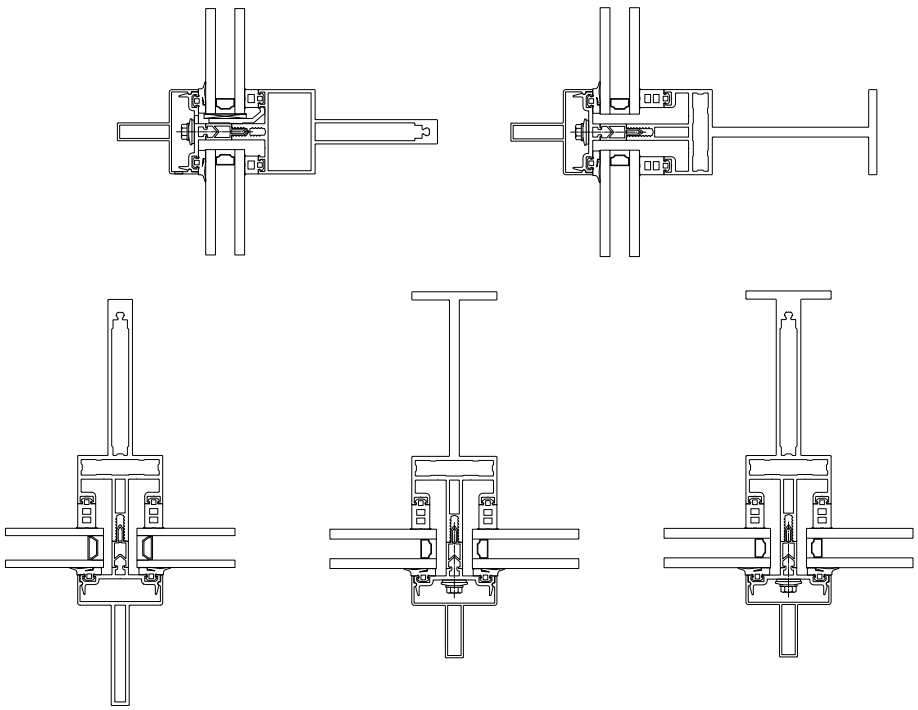




Elegance 52 IN

Elegance 52 IN is based on the same Elegance 52 ST principles of drainage, coupling, fabrication and thermal insulation but uses a special range of mullions and transoms to create a slim interior design effect. The resulting anchoring and movement solutions have been included.

Where the Elegance 52 ST uses tubular profiles, the Elegance 52 profiles have an I or T shape. Externally, the system accepts the wide range of pressure plates and cover caps which are used in the standard stick system.



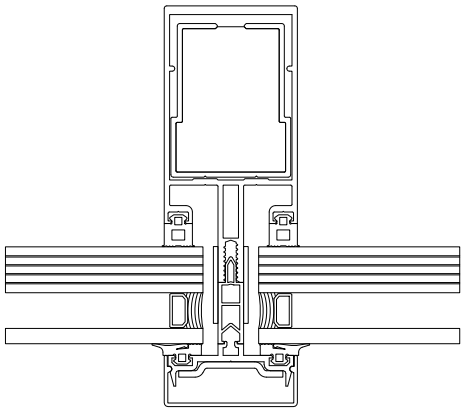
Various designs and combintions of mullions and transoms are possible

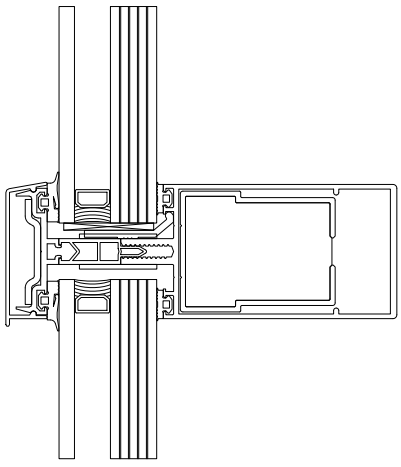
Elegance 52 FR

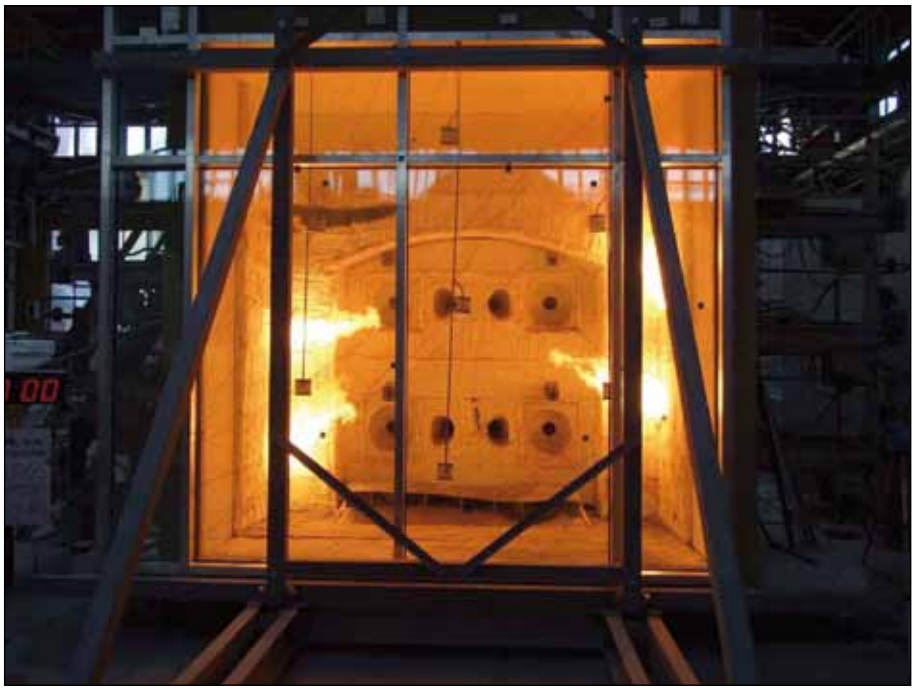
Elegance 52 FR has been designed to meet the demand for the protection of people and their possessions in and around buildings. There is an increasing need to create compartments which prevent fire and smoke spread around the building, from one floor-level to another and between adjacent buildings. It is clear that the adaptations to create fire resistance within a curtain wall will increase both the value and safety of the project.

In order to retain a uniform aesthetic treatment, Elegance 52 FR is based on the successful Elegance 52 ST concept and uses complementary profiles and accessories inside the system to make it fire resistant. Therefore, Elegance 52 ST and the fire resistant Elegance 52 FR version are visually indistinguishable. A combination of complementary intumescent strips, steel pressure plates, cooling materials and fire resistant glazing ensures the EI 30 classification. Both integrity and insulation are provided by the system. As a result, not only the fire itself, but also the heat is kept outside for at least 30 minutes.

Elegance 52 FR was tested officially to EN 1364-3, EN 1363-1 and EN 1363-2 for both internal and external fire-exposure.





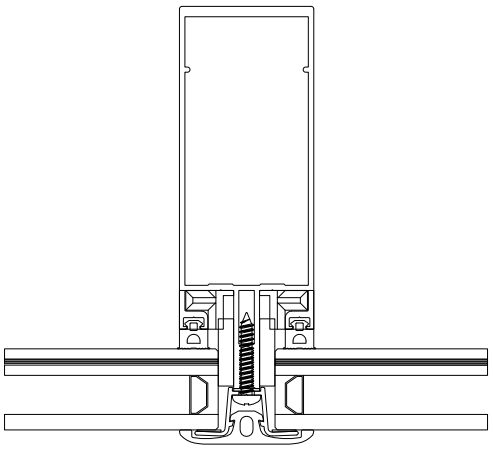


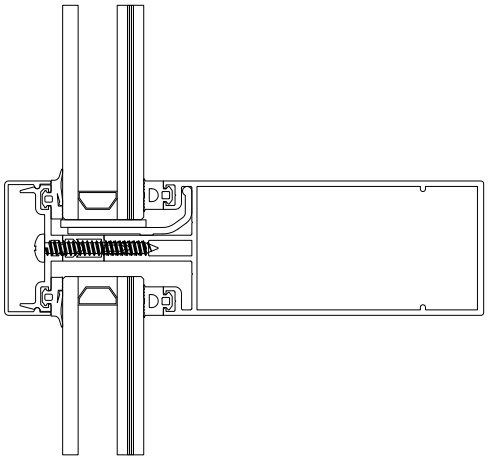
Elegance 52 burglary resistant (class 2)

The Elegance 52 burglary resistant (class WK2) offers an efficient protection against break-in. The special fastenings prevent unauthorized removal of the glazing. The external and internal design is not impaired. And the creative freedom is maintained through custom shapes and colour options. Two basic external appearance options are available: Elegance 52 ST (both horizontal and vertical external cover caps are used) and Elegance 52 HL (only horizontal cover caps are used giving a more visible horizontal lining effect).

The burglary resistant walls can be naturally combined with standard non-protective version (i.e. WK2 protection on ground floor, standard curtain wall on higher levels).

The Elegance 52 burglar resistant curtain wall means a comprehensively tested security performance (tested according to test standards ENV 1627, 1628, 1629 and 1630).



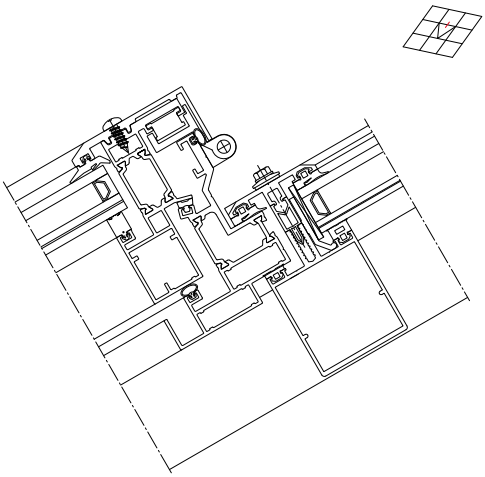


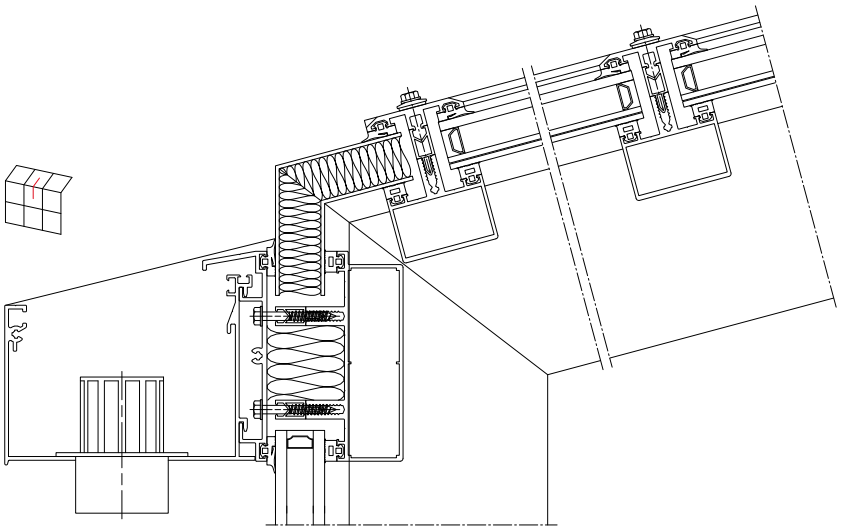
The main profile principle of Elegance 52 systems gives a great opportunity to build a variety forms of sloped glass construction. The special effective, multilevel, internal drainage system, with two-stage pressure equalising seal gives a perfect tightness against water penetration. The outer seal is water-repellent, the ventilation and draining channels ensure pressure equalising function and the inner seal is air and vapour tight. The inner seal takes up the pressure difference between the outside and the inside. External glazing beads are very low profiled and equipped with water culvert to allow efficient flow of water and snow over external surfaces.

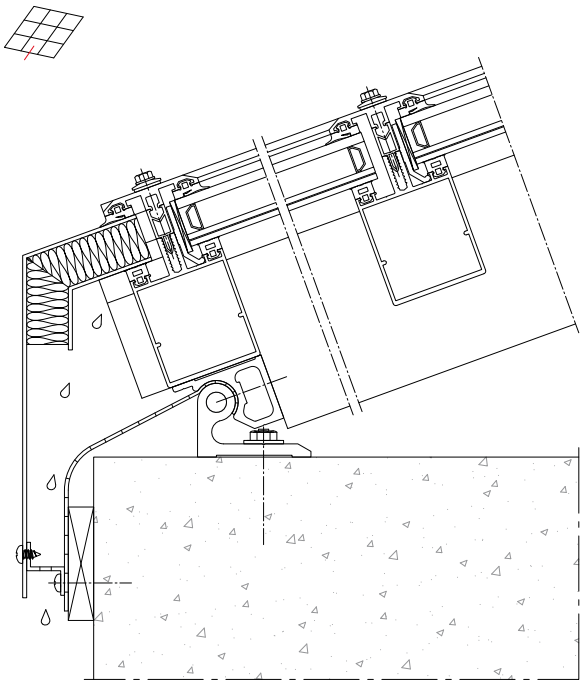
As regards the static loads, glazed roofs can have large spans due to an assortment of mullion profiles with very high stiffness and advanced anchoring solutions. The complicated 3D forms can be constructed using bespoke bracketing with adjustable angles. The sloped roofs can be naturally combined with vertical curtain walls and glazed facades with the use of incorporated gutter profiles.

Optional openable rooflights provide effective natural smoke and heat ventilation (certified motorized concept tested and certified according to EN 12101-2:2003 standard).

Elegance 52 roof applications



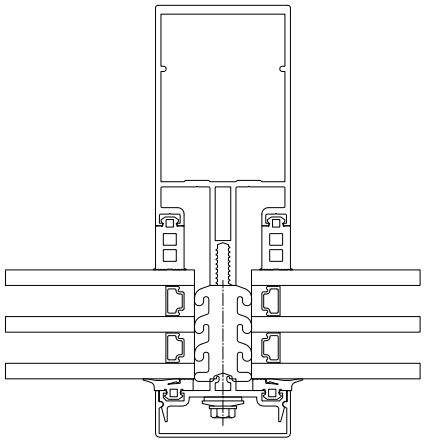


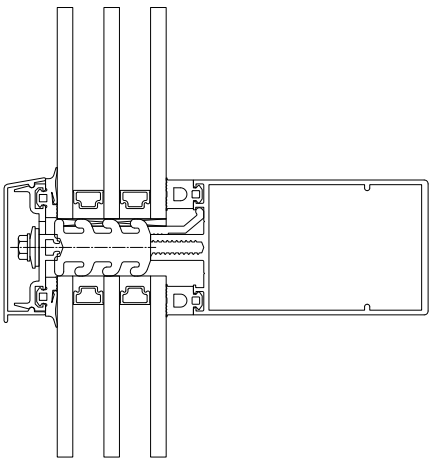


Elegance 52 SI

The Elegance 52 SI (Super Insulation) meets the highest standards in thermal insulation using innovative insulation technology. This highly thermally insulated facade system ensures compliance with energy-saving standards and initiatives.

- Modular system with different insulators.
- Enhanced thermal performance by adding only one component.
- High level of acoustic insulation.
- The high thermal performance level improves the overall building insulation, leading to a lower total energy consumption and improving the building's environmental profile.

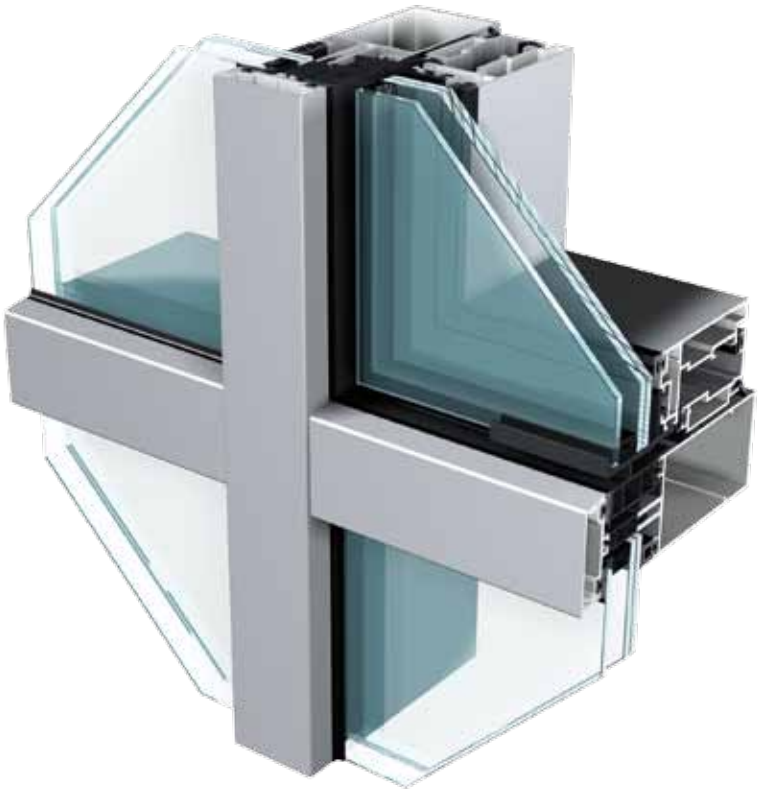




U_{cw} = 0,88 W/m²K
(with Ug = 0,7 W/m²K, element size 1400 x 1600 mm)

Elegance 52 IT

Elegance 52 IT is an outward opening window-system, specifically designed to allow a vent with a minimal visual aspect to be integrated into the Elegance 52 ST and Elegance 52 HL. The vents can barely be distinguished from the fixed panels.

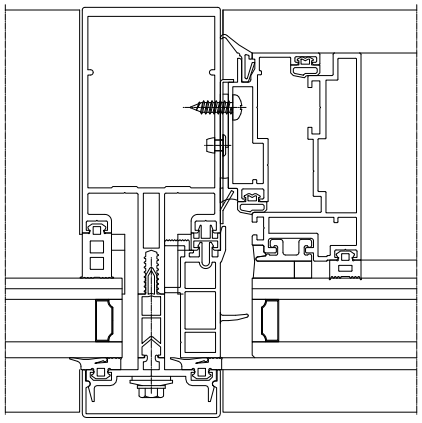


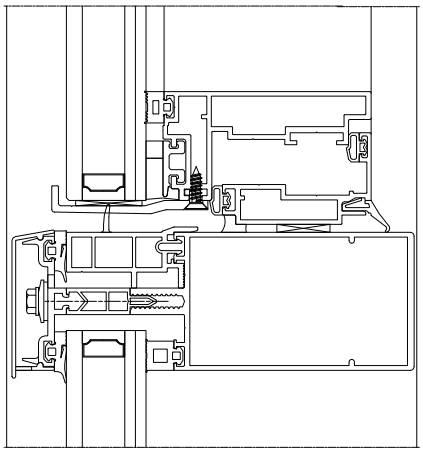
System features

- The Elegance 52 IT Italian is available in top-hung or side-hung applications.
- The glass is structurally bonded to the vent frame. Glass of 20 to 30 mm can be used.
- Glass retainer clips ensure total safety.
- Drainage is compartmental or field-drained.
- Several gaskets ensure a perfect weather and acoustic performance.
- Maximum height of the vent is 2000 mm.

Alternative

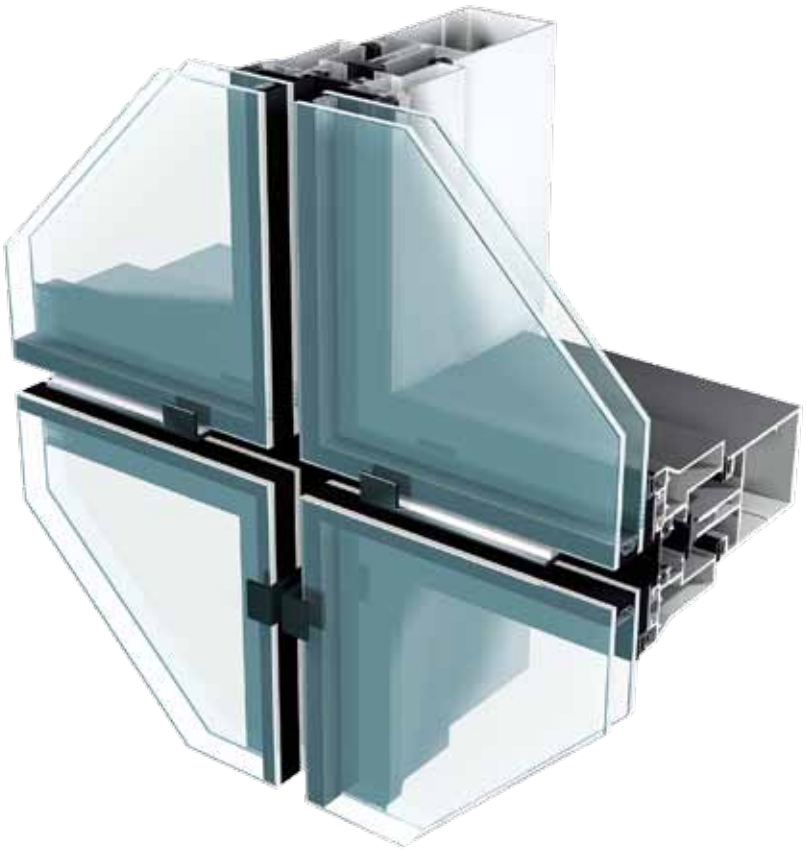
- It is possible to integrate any Sapa standard window and door systems in the Elegance 52 ST and HL by using special frame profiles or accessories.





Elegance 52 SG

Elegance 52 SG is a structurally glazed curtain wall system using the basic substructure of Elegance 52 and offering a solution for combinations of fixed or opening panels in both straight or facetted applications. The structurally glazed curtain wall offers a minimal sightline without having a visual difference between fixed and opening panels.



System features

- The use of a structurally glazed curtain wall avoids the use of cover caps resulting in a flush surface with minimal sightlines.
- The Elegance 52 SG can accept glazing of 24 to 28 mm.
- The maximum dimension of a panel is 1500 x 870 mm (height x width).
- The SG includes an integrated outward opening window system that does not show a visual difference with the identical fixed panels.
- In addition to glass panels, it is also possible to accomodate other types of panels.
- A range of gaskets in EPDM offer maximum weather and acoustic performance.
- Safety clips ensure total security.
- The wide range of mullion profiles offers an answer to both inertia and design requirements. Mullion and transom profiles can be flush or stepped on the inside.

Fabrication

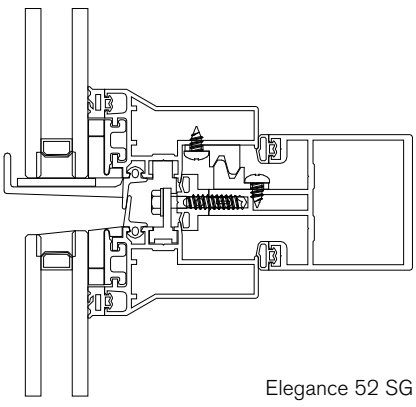
- Transom to mullion connections can be straight cut; a notched mullion version is available when the transom requires extra support. System-designed connectors make an easy installation.
- The glass is structurally bonded to an anodised profile in the vent, bonding of the glass to the profile is carried out by specialised, certified companies.
- Vent profiles are assembled using crimped or eccentric cleats.
- After assembly of the basic mullion structure, the different panels are positioned and tightened by use of connectors on all sides. It is possible to dismantle the panels if replacement is necessary.

Dimensions	
Sightline inside	52 mm
Sightline outside	19 mm
Mullion depth	41 - 273 mm
inertia (Ixx: wind)	9,57 - 923,84 cm^4
Transom depth	36 - 167 mm
inertia (Ixx: wind)	4,15 - 308,02 cm^4
inertia (Iyy: glass)	7,29 - 43,74 cm^4

Glazing	
Infill thickness	24 - 28 mm
Glazing method	structural glazing

Performances		
Thermal break		14,8 mm
Air permeability	600 Pa	XP P28-004
Water tightness	600 Pa	XP P28-004
Wind resistance	1200 Pa	XP P28-004

This information is an indication. For more information, please consult your local Sapa Building System branch.



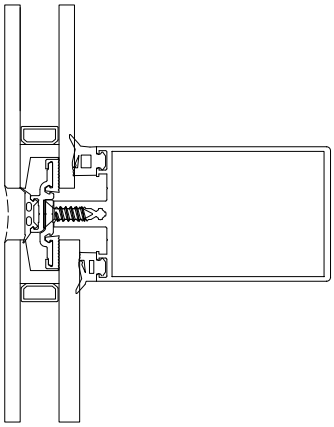
Elegance 52 SG

Elegance 52 SX

Elegance 52 SX is a structurally clamped aluminium curtain wall system where the glass is retained directly towards the standard structure of Elegance 52 ST with the use of concealed pressure plates. The retained intercalary profile between the double glazed panes provides the area to insert the pressure plates which are directly screwed in the central groove of the mullions and transoms.

This solution provides an economic alternative to traditional structural glazed curtain walls.

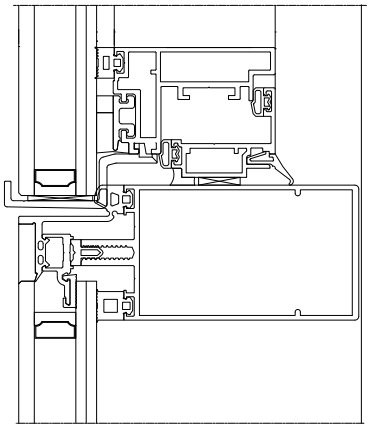
Elegance 52 SX is an alternative to traditional structural glazed systems as it also creates a flush surface appearance.



Elegance 52 SX IT

Elegance SX IT is an opening window developed for use within curtain wall facades whereby the opening light frame is not visible externally. Elegance SX IT allows the external glass surface to be positioned precisely in line with that of the adjacent fixed curtain wall areas, when combined with the absence of an external frame this means that the opening windows are virtually indistiguishable within the overall facade grid.

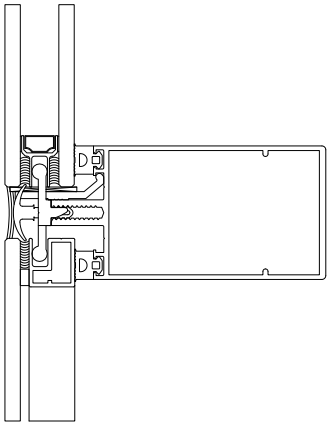
Our range of hardware allows top hung open out windows to be manufactured up to 2.0m in height and 130Kg in weight, and for storey-height parallel opening windows, operated either with manual handles actuating concealed multi-point locking systems, or with motorised systems. Motorised actuation is recommended for parallel windows in excess of 60 kg.



Elegance 52 SG Eco

Elegance 52 ECO is a structurally clamped aluminium curtain wall system where the glass is retained directly towards the standard structure of Elegance 52 ST without the use of pressure plates nor cover caps. A special groove in the intercalary profile between the double glazed panes, provides the possibility to insert connection pieces which are directly screwed in the central groove of the mullions and transoms.

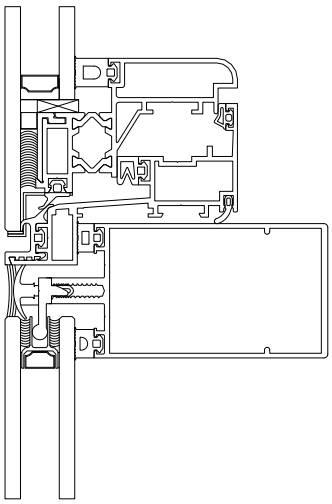
This solution is an alternative for the traditional structural glazed systems as it also creates a flush surface aspect.



Elegance 52 SG Eco IT

The Eco IT version is an aluminium outward opening window system, designed to allow a hidden outward opening vent to be integrated in the Elegance 52 ECO. The glass is structurally glued to the vent. A thermal and non- thermally insulated version are available. There is hardly a difference between opening and fixed panels.

Max glazing thickness: 28 mm
Max height vent 2000 mm

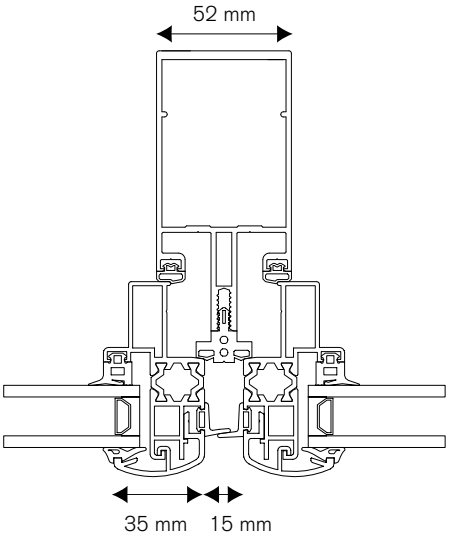


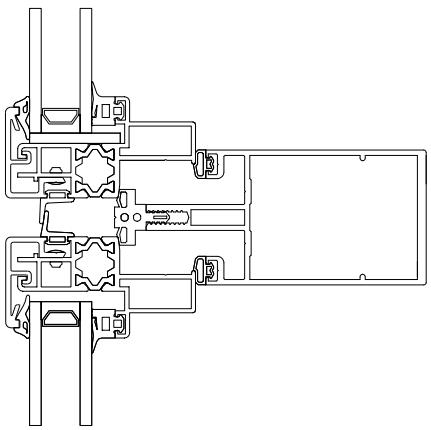
Elegance 52 GF

Elegance 52 GF is a curtain wall system based on the structure of the Elegance 52 SG using a glazing bead instead of structurally bonding the glass to the panel. Our design team developed this solution to offer a version where the glass is held in position with aluminium as in a picture frame. This approach offers each panel to be independent but still be integrated in the full curtain wall.

System features

- Solutions for both fixed panels as outward opening panels are available.
- Two designs of glazing beads are available.
- Glazing of 20 to 30 mm.
- Max panel size of 1500 x 900 mm (height x width).
- The panels are thermally broken, so improving the total energy performance of the building.
- Panels are completely assembled in the workshop and positioned on to the locating lugs on the structure.





Performances		
Air permeability	A2	EN 12152
Water tightness	R5	EN 12154
Wind resistance	800 Pa	EN 13116

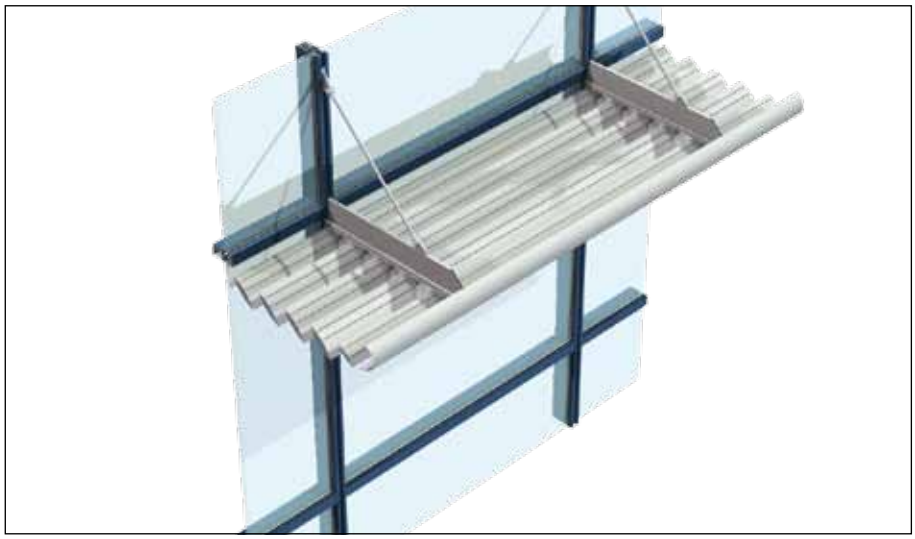
This information is only an indication. For more information, please consult your local Sapa Building System branch.


Travelodge
Travelodge

Elegance 52 Solar Control

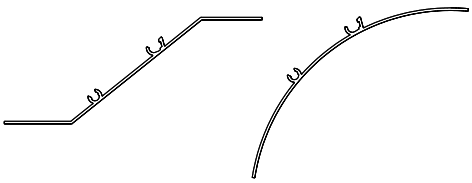
The Solar control range has been developed to compliment Elegance 52 curtain walling and meet the ever increasing energy demands put on the building facade.

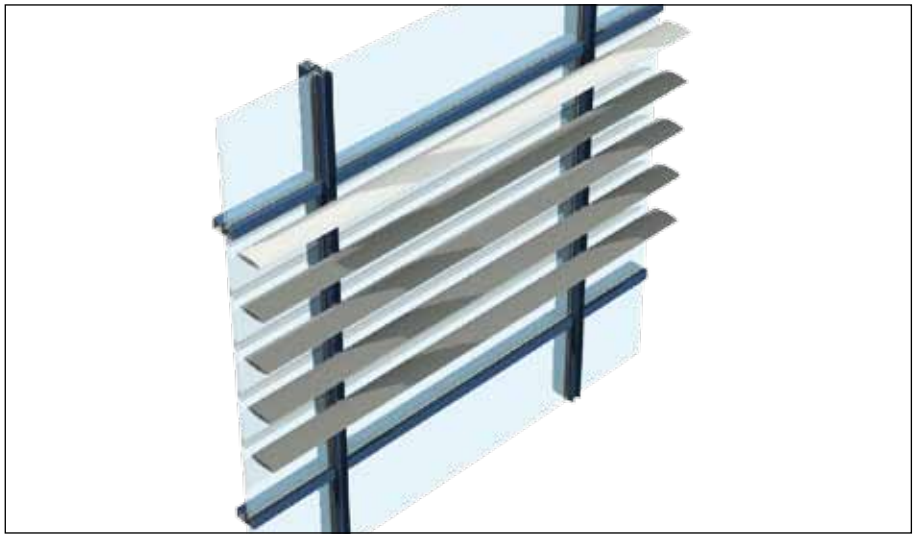
Sapa's in-house technical support can provide you with critical, specialist advice concerning the correct application of products across a variety of project types including maintenance and safety.



Eco Clip system

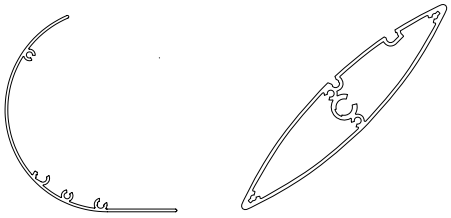
has been developed to provide maximum shading to a facade, both in terms of area coverage and configuration options, whilst using simple profiles that are lightweight and inherently economic.

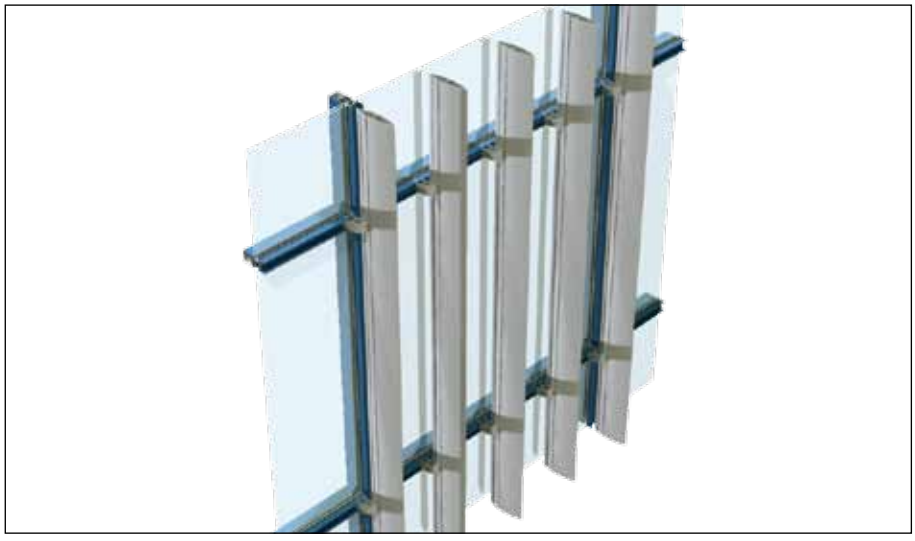




Aero Clip system

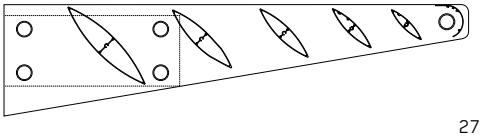
has been developed to provide suited solutions for all applications with an emphasis on eye catching design.





Side-arm system

is a range of blade profiles that can be used to create any shading configuration.



Building Integrated Photovoltaics

As part of the Orkla group, Sapa Building System has all the steps along the value chain of the photovoltaic industry in its own hands. From silicium, through cell and module manufacturing, Sapa Building System provides the complete photovoltaic system for the building envelope.

This includes:
» project consulting
» engineering and design
» complete PV and aluminium product range
» fabrication and installation network
» after sales services

Our global presence together with our local network ensure efficient project management close to our customers, in all geographical areas.
Moreover, Sapa is able to implement these Building Integrated Photovoltaics in most of its market leading product groups such as solar shading, curtain walling, glazed roofs, conservatories and windows.

What are Building Integrated Photovoltaics?
While standard PV solutions are often used in residential or solar-farm applications, BIPV provides the architect with completely new possibilities to incorporate solar technology into buildings. PV systems and architecture can now be combined into one harmonious mixture of design, ecology and economy.

Our building integrated photovoltaic modules create a world of possibilities. The wide variety of elegant forms, colours and optical structures of cells, glass and profiles enables creativity and a modern approach to architectural design. It allows specifiers to deliver an energy-efficient, innovative and prestigious project and to set new architectural standards for the future by combining elegance with functionality. PV modules can be incorporated into the building vertically, horizontally or at an angle.

The modules can be tailor-made in accordance with dimensions and customer wishes. A selection of cells and positioning can be adapted according to project design specifics: Transparancy, Light control, Module design, Shading, Dimension.

PV cell types and their efficiency

	dimensions	efficiency	Wpeak/m^2	Wpeak/cell
	156x156 125x125 **Polycrystalline**	16%	120	1.46 - 3.85
	156x156 125x125 **Monocrystalline**	18%	130	2.60 - 4.02
	125x125 **Monocrystalline - High efficient**	22%	155	2.90 - 3.11
	125x125 **Monocrystalline - semitransparent**	17%	105	1.90 - 2.20
	576x976 **aSi (Amorphous Silicone) Thin film**	5%	50	32
	576x976 **aSi Thin film 10% or 20% opacity**	4%	40-45	27

A turn key solution for your entire project

Supported by Sapa Building System's extensive expertise and know-how, we provide a complete package with a wide range of services: we investigate which subsidy regulations apply to the project and ensure that national building regulations are met in every detail. Sapa Building System supports with design and engineering for utility connections, cabling plans, electronic, static and thermal calculations. For the installation, our extensive network of experienced installers and builders provides full assistance. For the delivery of BIPV components we cooperate with prominent partners in the building industry.

At Sapa Solar, we drive the entire design process by using our technical expertise and experience: from the very first dialogue with the client, through conceptual drawings, the development of high quality photovoltaic systems that are easy to manufacture to install.

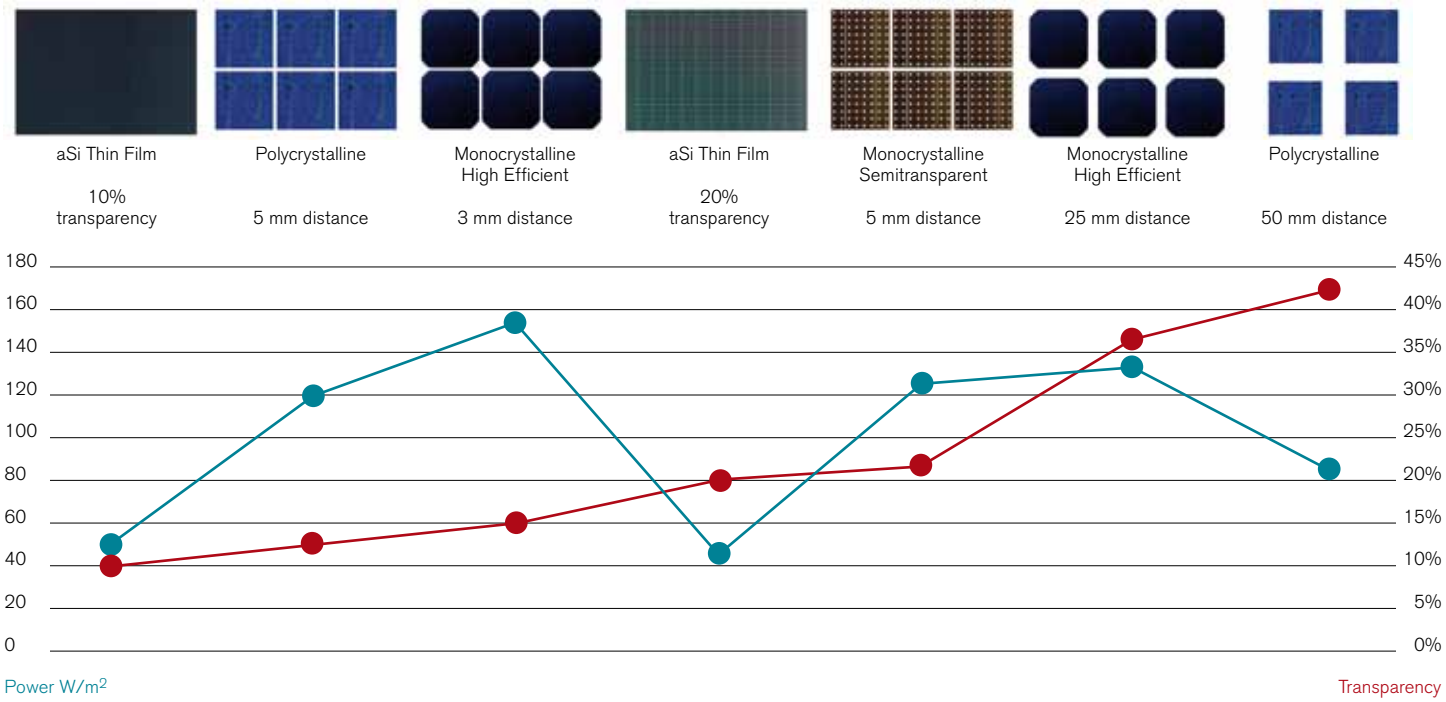
Support offer

» Engineering study, curtain walling structure, static calculation, design, drawings
» Photovoltaic study, module proposal, output calculation, electrical data, investment calculation
» Project budget envelope, timetable estimation, qualified installer recommendation

BIPV project installation

» Supply of all hardware, profiles, modules and electrics
» Engineering, installation support, site management, administrative assistance
» Qualified installer network combining expertise in facade and electronics

Possible combinations cell-type and cell distances



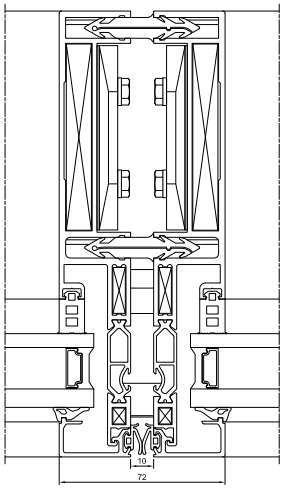
Elegance 72

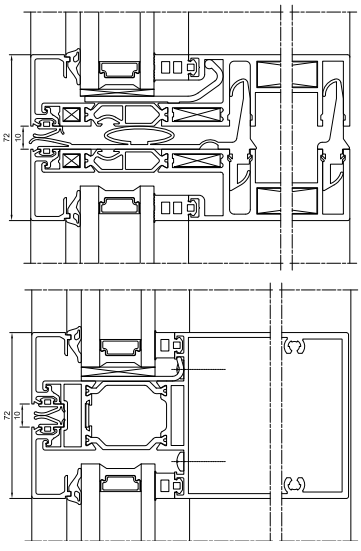
Elegance 72 is a unitised curtain walling system that brings together the benefits of factory production control and speed of installation on site. Modular units are manufactured complete with glazing units in workshop conditions, where quality can be strictly controlled. The fixing lugs are built into the perimeter, ensuring ease of handling during transportation and arrival on site.

Fitting the modular panels into place takes far less time than constructing a traditional stick-build system and, for installations where scaffolding is unavailable or impractical, cranes can be used to hoist the panels into position quickly, efficiently and above all safely

Elegance 72 can incorporate windows and doors from the Sapa Building System range, as well as Elegance 52, Elegance Solar Control and solar power generation through our Building Integrated Photovoltaic system, thus providing a complete facade solution for any building type or style.

The system is available in structurally glazed aluminium and structurally clamped aluminium. Horizontal or vertical lining are also part of the offer.





Production

» Modular units are manufactured including glazing units in the factory. This ensures an optimized:
  - Production process
  - Labor cost
  - Maximal control on quality
  - No influence of the weather.
» Fast glazing without screwing by using the different external glazing beads.

Installation

» Frames are fitted one floor level at a time.
» The units are craned or winched into position and secured from the inside of the building, reducing costs and encouraging safer working conditions.
» Dry connections between movement gaskets for water tightness up to 1500 Pa.
» The storage of cladding materials and glass handling on site can be completely eliminated - a major advantage for constrained city centre sites.
» Significantly improved quality and performance because the facade panels are completed off-site in a controlled factory environment.

Cost Effective

» There are cost savings on site preliminaries and scaffolding.
» The option of standardisation for economies of scale and material optimisation.
» Faster programme times leading to earlier occupation and a faster return on investment for the developer.
» Construction is less affected by inclement weather.
» More efficient control of materials, including less wastage, loss and damage.
» The facade panels are manufactured off-site and craned into position, making this a highly efficient solution where site access is restricted.

Sapa Building System, is one of the largest suppliers of aluminium building systems in Europe and is part of the Swedish group Sapa, the world's largest developer producer and distributor of extruded aluminium profile systems. Sapa Building System aims for well-developed systems and project solutions offering a tangible added value to fabricators, architects, investors and home-owners.

Windows and Doors
Sliding Systems
Curtain Walls
Conservatories
Balustrades, gates and others
BIPV

Your local Sapa Building System fabricator

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