

**sapa:**

**buildingsystem**

ARCHITECTURAL ALUMINIUM SOLUTIONS



# Elegance 52

Curtain Walling & Facade Systems

**Advanced Aluminium**





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 profiles 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 SG Vent (frameless window)\*
  - Elegance 52 IN (industrial look)\*
  - Elegance 52 FR (fire resistant)\*
  - Elegance 52 Burglary resistant (class 2)\*
  - Elegance 52 SX (structurally clamped)\*
  - Elegance 52 SG (structural glazing)\*
  - Elegance 52 GF (glazed frame)\*
  - Elegance 72 (unitised curtain wall)\*
  - Elegance SC (Solar Control)\*
  - Building Intergrated Photovoltaic\*
- \* Versions denoted thus are available on a project specific basis only. Minimum quantities and extended lead times may apply. Please consult Sapa Building System prior to specifying or ordering.
- » 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 allowing 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

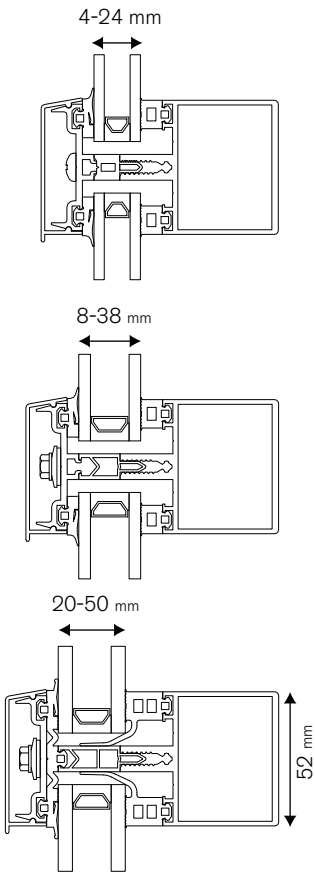
- » Drainage can be both field / compartmental or mullion drained.
- » Specially developed aluminium profiles or steel can be inserted in the mullions to assure a higher inertia for extremely large spans and to provide a continuous mullion connection and anchorage.
- » System of dry glazing by means 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 mullion-cut out solution was 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.

Elegance 52 ST is a standard 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 faceted curtain wall requests.

System features

- » Elegance 52 ST can accept glass and panels depths of 4 to 50 mm.
- » The system can be self-supporting or can be used in combination with a supporting structure.
- » Elegance 52 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)

Elegance 52 ST



Dimensions	
Sightline	52 mm
Mullion depth	41 - 273 mm
inertia (lxx: wind)	9,57 - 1649,7 cm <sup>4</sup>
Transom depth	22,5 - 199 mm
inertia (lxx: wind)	3,67 - 515,84 cm <sup>4</sup>
inertia (lyy: glass)	1,09 - 53,03 cm <sup>4</sup>

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

Performance		
Thermal break	4 - 36 mm	
Thermal insulation	$U_{cw} < 1,4 \text{ W/m}^2\text{K}$ with glass $U_g = 1,2 \text{ W/m}^2\text{K}$	EN ISO 10077-2
Air permeability	AE750 / 600Pa	EN12152 / CWCT Seq B
Water tightness	RE750 / 600Pa	EN12154 / CWCT Seq B
Wind Resistance	3000Pa / 2400Pa	EN13116 / CWCT Seq B
Acoustics:		
with glass 6/15/4	$R_w(C;C_{tr}) = 34(0;-2)\text{dB}$	
with glass 10/15/6	$R_w(C;C_{tr}) = 36(-1;-2)\text{dB}$	
with glass 12/16/44.2	$R_w(C;C_{tr}) = 42(-2;-5)\text{dB}$	
Impact test	class 5	EN14019

*This information is only an indication of potential performance with specific components. For more information, please consult Sapa Building System Ltd.*

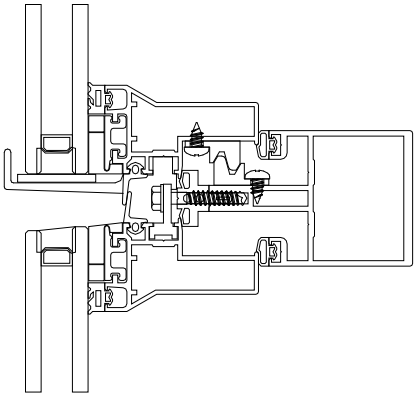




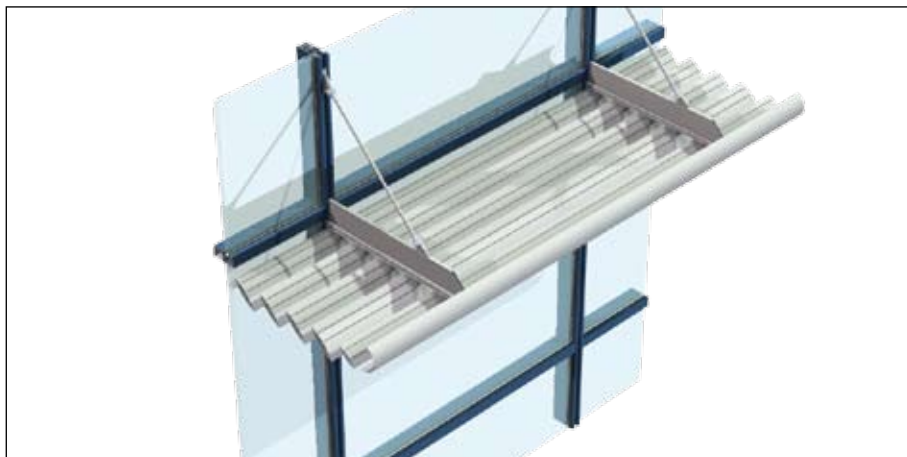
**Design**

- » A wide range of decorative cover caps (bull nose, rectangular, aerofoil, etc) gives the freedom to design visually interesting facades.
- » 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 internally or can be stepped to emphasise the vertical element and complement the total building design.
- » Several situations 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 Sun Control

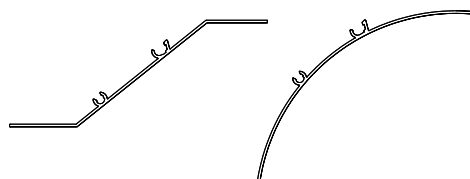


The Solar control range has been developed to compliment Elegance 52 curtain walling and meet the ever increasing energy demands put on the building facade.

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.

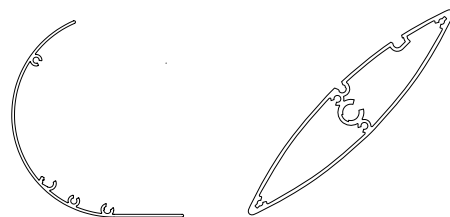
### Eco Clip system

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.



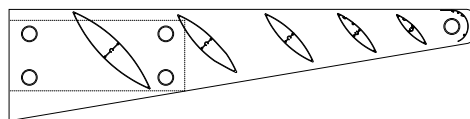
### Aero Clip system

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.





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: Transparency, Light control, Module design, Shading, Dimension.

## Building Integrated Photovoltaics



### PV cell types and their efficiency

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

