Facade and Shading systems

Trend-setting building integrated photovoltaics

Overview of 3S Swiss Solar Systems Facade and Shading systems

Technical Data

Nominal performance

Solar laminate: up to 420 Wp possible Cell type: Silicon: optional mono or polycrystalline, high performance and semi-transparent cells, coloured cells

Construction: Glass thickness of 6 mm for construction height up to 8 m: Glass/foil (ESG [= toughened safety glass] or ESG-H [=heat soak tested toughened safety glass] glass laminate) from 8 m construction height: Glass/glass (ESG or ESG-H glass) for overhead glazing: Laminated sheet glass (LSG)

Dimensions: up to maximum allowance of 3.05 m x 1.85 m in accordance with DIN 18516-1

3S Swiss Solar Systems maximum size for solar laminates: 3.50 m x 2.00 m

Design: individual solar laminate cell layout freely-definable laminate geometry coloured glass coatings special transparent solutions

Electrical connection: secure direct current plug

Certificates: 3S Swiss Solar Systems facade and shade laminate
IEC 61215 (TÜV ID: 0000008015)

- Qualified, IEC 61215
- Safety tested TÜV-Spec 931/2.572.9
- Periodic Inspection

Protection class:

Guarantee: 10 years at 90 % performance
20 years at 80 % performance

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Swiss Solar Systems

3S Swiss Solar Systems photovoltaic facades – the sunny side of your building

Form, functionality and power generation in one

3S Swiss Solar Systems facade laminates represent the harmonious integration of solar electricity in building facades. Our standardized or custom-made solar laminates enable a trend-setting architecture and – thanks to the highest quality of workmanship – comply with the construction requirements of DIN 18516-1.

Through the continuous and consistent development of our products we are always up to date with the latest state of the art.

Front mounted rear-ventilated facades (VHF) according to DIN 18516-1

3S Swiss Solar Systems facades enable a very pleasant arrangement of facade claddings. Thus 3S Swiss Solar Systems works with concealed junction boxes and as short and inconspicuous wiring as possible.

The accompanying project consultation with the 3S Swiss Solar Systems planners ensures the greatest functionality and optimal energy yield, while the freely selectable sub-construction and attachment system offers the complete range of flexibility: All available market products are at your disposal. To comply with the legal regulations, depending on the overall height, 3S Swiss Solar Systems facade laminates in glass/foil bond or glass/glass bond are used.

Construction

Two attachment systems are available for 3S Swiss Solar Systems facades:

Point mounting system: Thanks to point mounting plates, the frameless solar laminates can be used economically for power generating glass facades – and in an aesthetically pleasing way.

Sub-construction, glued with safety clamp supports: This attachment system is suitable for large construction heights. The solar laminates must be produced as glass/glass bond, which results in a uniform appearance of the glass facade.

The suspension profiles are glued to the back of the frameless solar laminates and fixed on the facade sub-construction. Clamp supports provide the legally required mechanical safety.

Advantages of the frameless systems:

- fulfilment of the highest aesthetical requirements
- no lossy shading of the solar cells by the construction elements
- avoidance of yield-reducing dirt deposits on the solar laminates
- uniform appearance of the solar electric glass facade
- economical assembly
- offer electricity generation combined with weather protection

Construction regulations suitability

The static-mechanical requirements of the system depend on the legal building regulations valid at the place of work or location. The corresponding information that 3S Swiss Solar Systems AG receives always comes from the customer.

3S Swiss Solar Systems photovoltaic glass laminates with shadow effect – the multi-functional shading device

Sun protection and power generation in one

3S Swiss Solar Systems shade laminates are semi-transparent solar laminates which can be used in power-generating daylight and sun protection systems. The individually selectable cell distances in the solar laminate have a direct influence on the translucent effect and thus also on the shade and thermal protection. The solar laminates can be produced either in an economical glass/foil bond (with transparent back sheet) or in a glass/glass bond.

Applications

Hardly any limits can be set on the application possibilities – from overhead glazing in external areas to the semi-transparent glass facade of a building. Processed further into solar electric insulation glass, there are innovative solutions for thermal facades and glass roofs.

Possible applications are: Canopies, winter gardens, balcony linings, special buildings, applications of insulation glass for thermal facades.

Construction

The solar laminates can be used in all normal construction profiles and individually planned glass sub-constructions. Usually these are post and latch plate constructions, which also make integration of the power cable possible. The edge distances of the solar cells in the laminate depend on the depth of the profiles.

There are two mounting systems that can be chosen for the 3S Swiss Solar Systems shade laminates:

Pointed panel mounting: 3S Swiss Solar Systems solar laminates are individually designed for the desired point mounting system (e.g. with glass boreholes for feeding through the clamping plate holders or pointed edge clamps).

Linear panel mounting: The dimensions and strength of the 3S Swiss Solar Systems solar laminate can be set in accordance with the regulations for linear layer glazing by the planner.

Advantages of the frameless systems:

- fulfilment of the highest aesthetical requirements
- no lossy shading of the solar cells by the construction elements
- avoidance of yield-reducing dirt deposits on the solar laminates
- many application possibilities
- offer power production combined with weather protection and shading

Construction regulations suitability

The static-mechanical requirements of the system depend on the legal building regulations valid at the place of work or location. The corresponding information that 3S Swiss Solar Systems receives always comes from the customer.

Front mounted rear-ventilated glass facade with frameless 3S Swiss Solar Systems solar laminates in St. Moritz (CH).

Custom 3S Swiss Solar Systems solar laminates for full facade integration in Landsberg (D).

Shading canopy with power generation solar panels in Solothurn (CH).

3S Swiss Solar Systems photovoltaic overhead glazing with UL certificate for museum in Los Angeles (USA).