FAST 2 facade system

megasol

Description and dimensions

│ A4 │ 1:10 │ V23.01 │
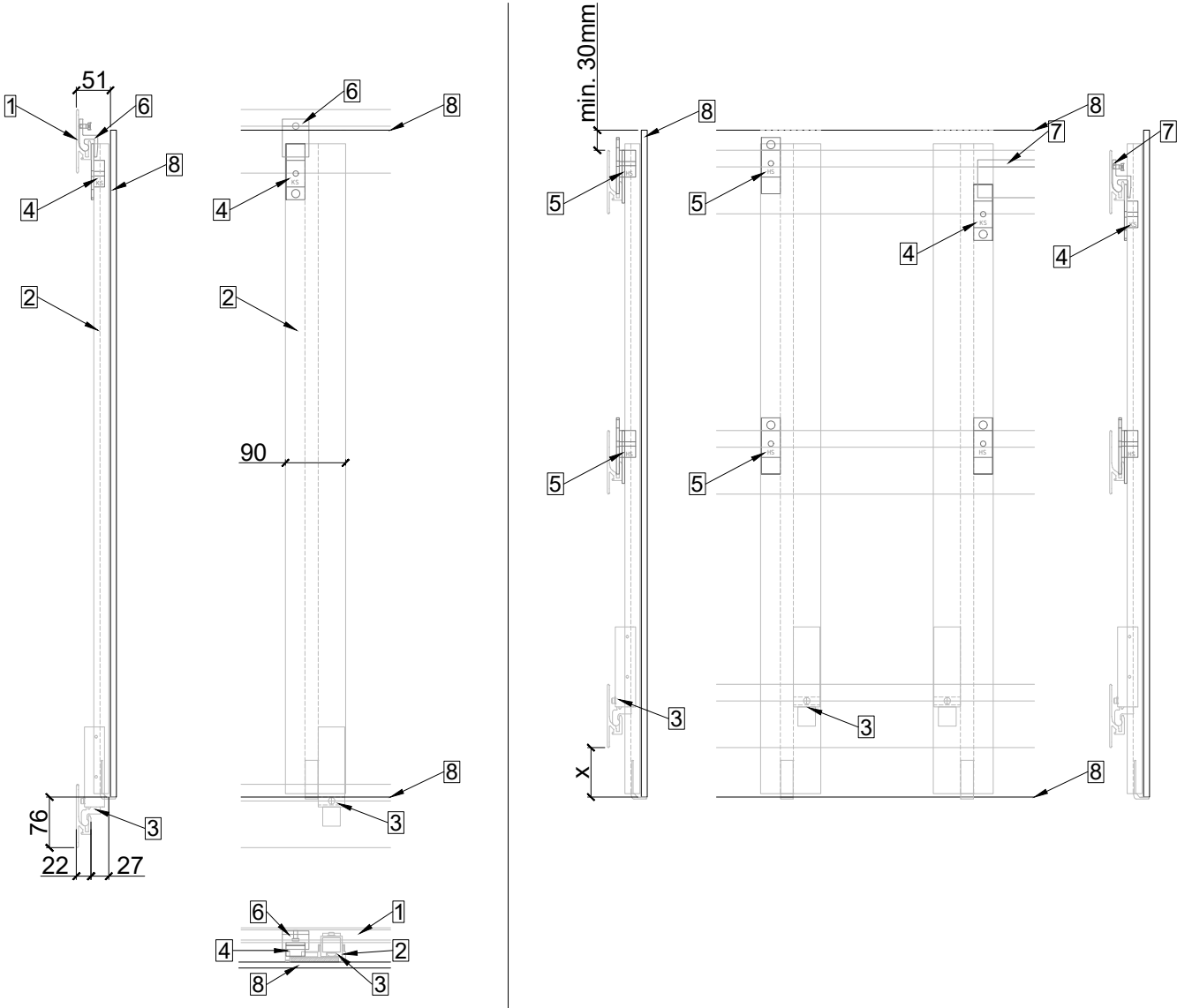
1   FAST 2 Horizontal profile
2   FAST 2 Backrail
3   FAST 2 Adjustment
4   FAST 2 Folding Lock
5   FAST 2 Hanging Lock
6   FAST 2 Slide Lock 1M 40 mm
7   FAST 2 Slide Lock 2M
8   Megasol GG module

Notice:

The FAST 2 facade system is designed on a project-specific basis.
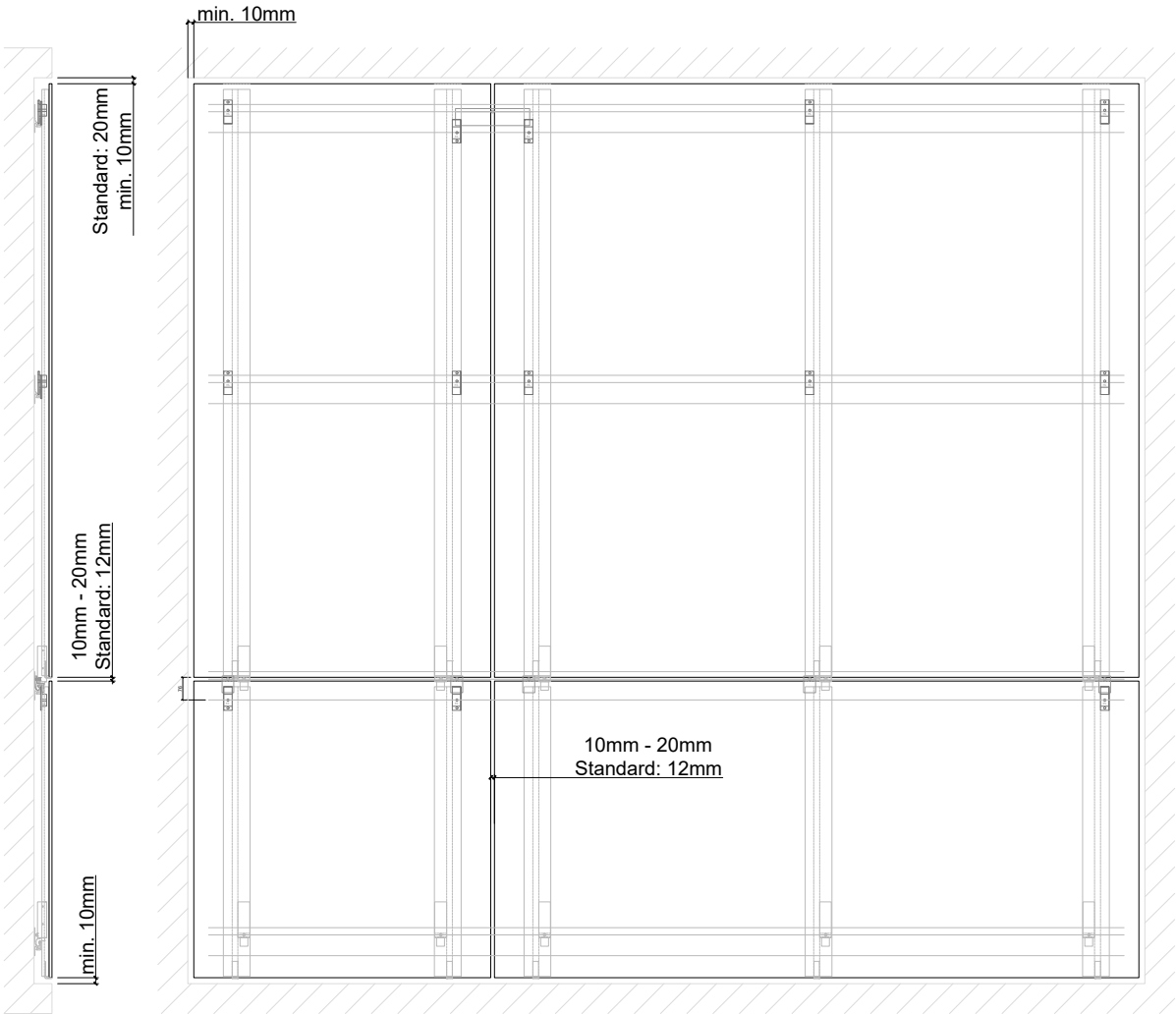Structural analysis is the responsibility of the contractor.

The thickness of 51mm will increase to 55mm for high modules (approx. from 1.7m).

FAST 2 facade system

Layout example

The FAST 2 Facade system can be individually designed and laid out. The number of FAST 2 horizontal profiles and FAST 2 backrails depends on the module size and on-site requirements. This means that even storey-high modules can be installed efficiently and safely.

Dimensions in the drawing: recommended minimum distances from obstacles (frames, walls, closures, etc.) and joint dimensions

min. 10mm

Standard: 20mm
min. 10mm

10mm - 20mm
Standard: 12mm

10mm - 20mm
Standard: 12mm

min. 10mm

Note:

The FAST 2 Facade system is designed on a project-specific basis.
Structural analysis is the responsibility of the contractor.

When using FAST 2 hanging locks, a joint of 20mm above the module field is assumed as standard so that the modules can be hung in. This dimension may be reduced depending on the specific project.

FAST 2 facade system

High modules with reinforced backrails

High modules (approx. from 1.7m, depending on wind forces, glass thickness and module format) can be constructed with reinforced backrails. This can replace additional horizontal profiles in the middle of the module.

The thickness of 51mm will increase to 55mm for high modules (approx. from 1.7m).

1   FAST 2 Horizontal profile
2   FAST 2 Backrail
3   FAST 2 Adjustment
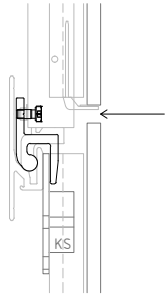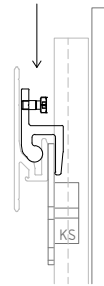4   Megasol GG module
5   Backrail reinforcement

FAST 2 facade system

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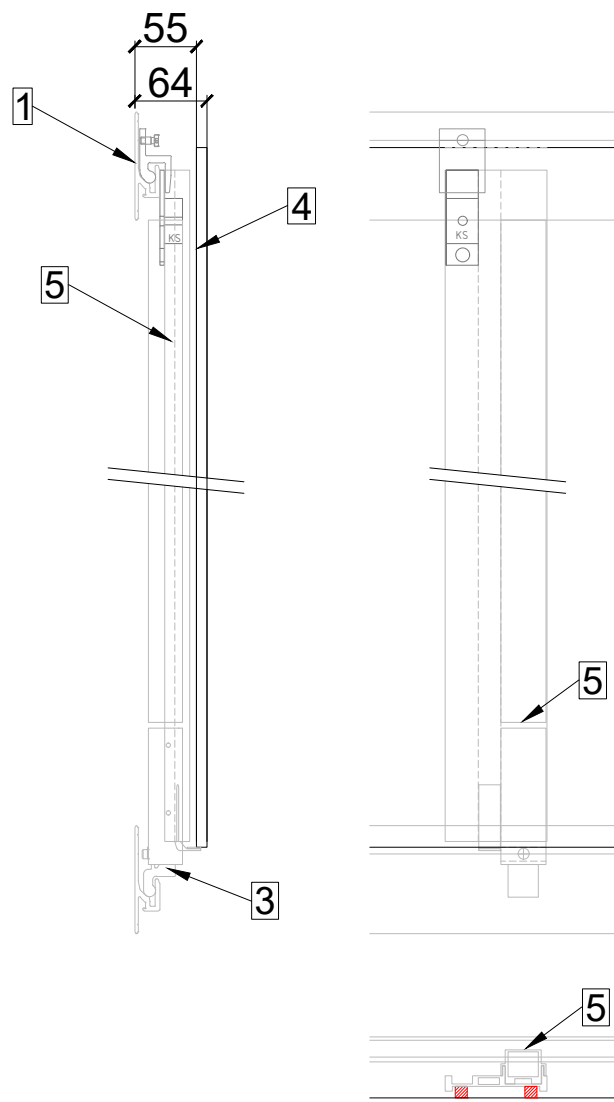
Module fuse

The screw of the slide lock must be screwed in until it stops (screw head on slide lock, 6 Nm).
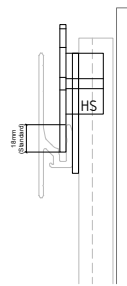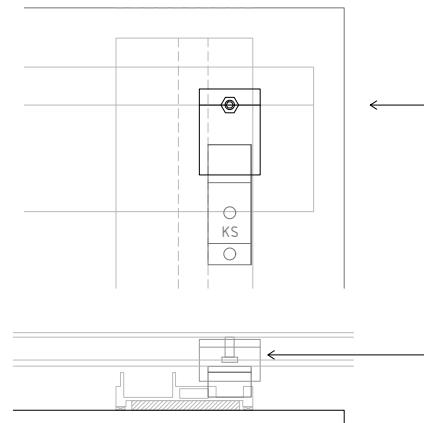
from front
in horizontal joint

from above
behind the module

hanging
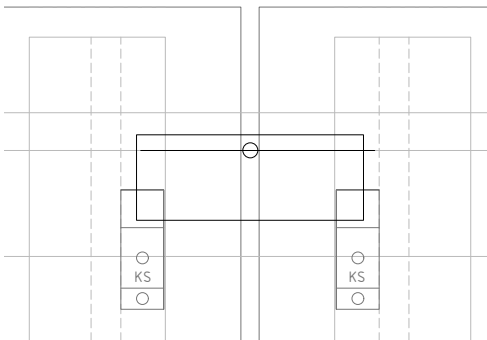in horizontal profile
with hanging lock

from the side
behind the module

At least 20mm space
required for inserting
the hanging lock. (Less
may also be possible
depending on the project)

from front
in vertical joint

laterally with self-tapping screw
in vertical joint with min. distance to obstacle
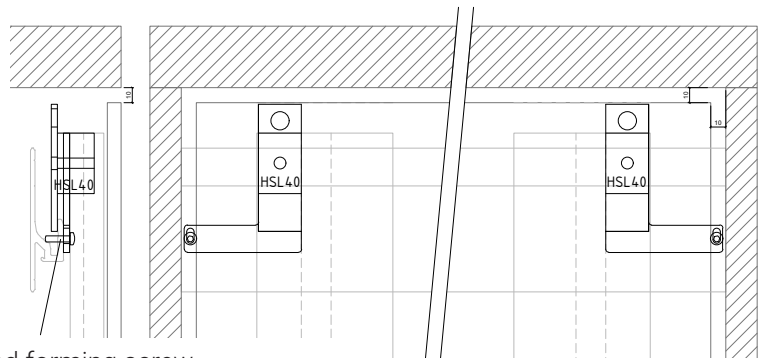
Thread forming screw
M4x16mm Inox A2 (3.5mm predrill in
the lower part of the oblong hole)

Migration Protection
Push the slide lock up to 2 mm against the backrails or the adjustment.

left (slide lock left of backrail)

right (slide lock right of backrail)

FAST 2 facade system

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Connection to on-site substructure

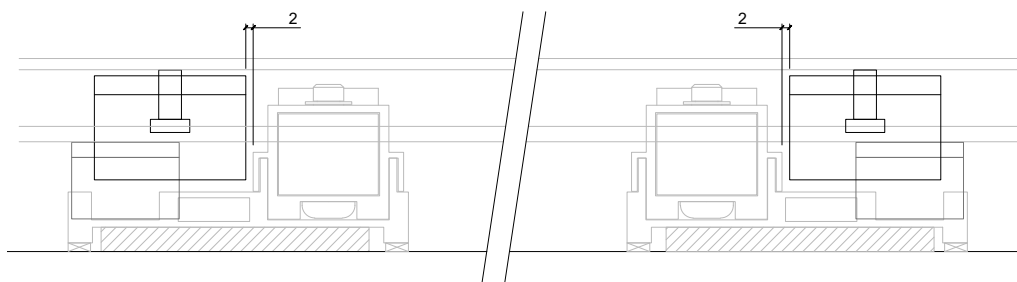The FAST 2 Facade system is in general fastened to a vertically laid substructure made of wooden battens or aluminum profiles (Z or L profile). The distance of the vertical substructure can be calculated using the following tables. Larger distances as well as other substructures are also feasibly.

Part of the rear ventilation cross-section is between the backrails (27 mm).
This can be extended by the vertical battens.

The choice and quantity of fasteners (screws / rivets) depends on the requirements and must be defined by the contractor.
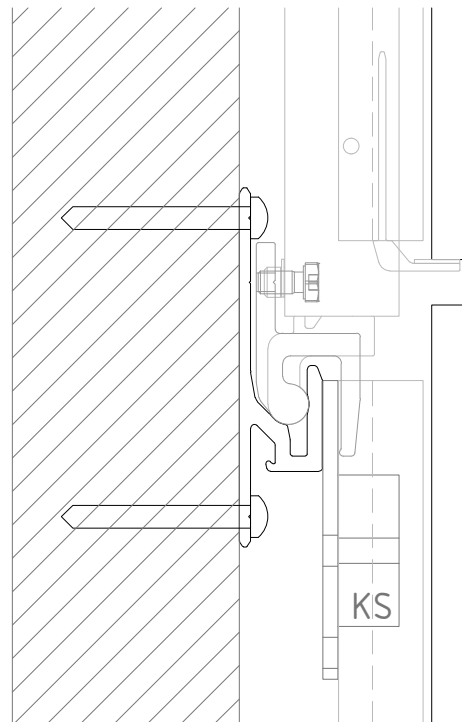
Example on aluminum L-profile
Hexagonal drilling screw 5.5x19 mm Inox A2
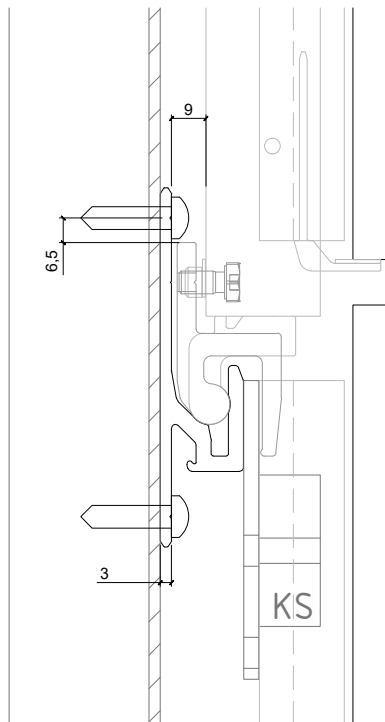
Example on wooden battens
Pan head screw 6x60 mm Inox A2

The planing and fastening of the FAST 2 horizontal profiles to the on-site substructure and the structural substructure as well as the structural analysis is the responsibility of the contractor.

FAST 2 facade system

Calculation according to SN EN1999-1-1 with reduced cross-section according to standard

Load table for surcharge per backrail from 0.11 - 0.2 kN
- Span/Cantilever in millimeters
- Wind load per anchor point in kN, char. value without load coefficients
- The FAST 2 horizontal profiles must be mounted on a substructure that is designed to withstand the corresponding mechanical loads of wind and dead weight of the solar modules
- Module weight per m²: 2x 4mm glass approx. 22kg; 2x 6mm glass approx. 33kg
- Depending on the project, the span width can be extended.
- If the module mounting points are closer to the vertical connection, the span width can be increased.

Cantilever -->|<----------------------- Span ----------------------->|<-- Cantilever

span in mm

cantilever in mm

0.5kN | 1410mm

0.74kN | 1000mm

1 kN | 670mm

wind load per connection point in kN

The planing and fastening of the FAST 2 horizontal profiles to the on-site substructure and the structural substructure as well as the structural analysis is the responsibility of the contractor.
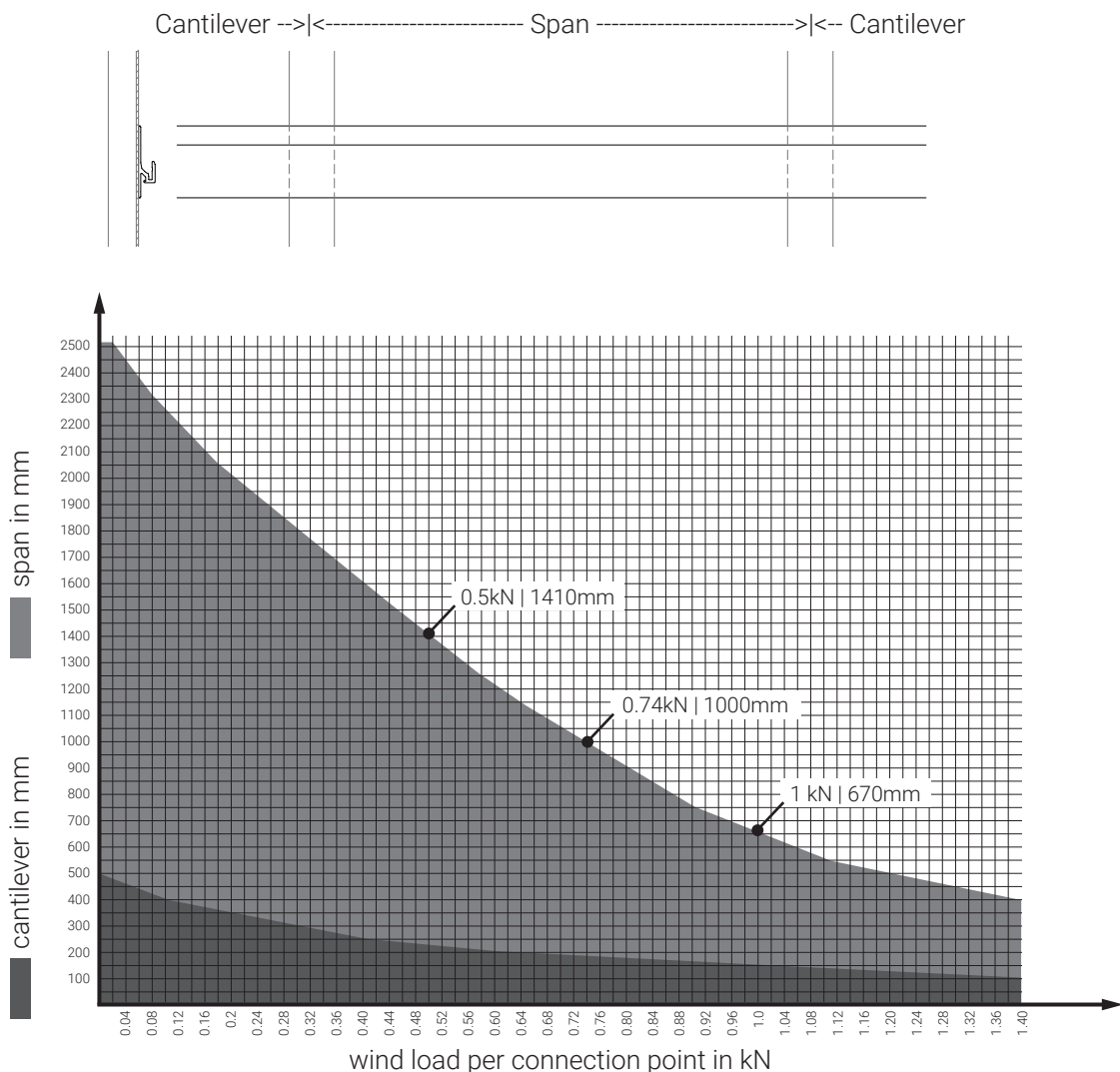
Calculation according to SN EN1999-1-1 with reduced cross-section according to standard

Load table for surcharge per backrail from 0.21 - 0.3 kN

- Span/Cantilever in millimeters
- Wind load per anchor point in kN, char. Value without load coefficients
- The FAST 2 horizontal profiles must be mounted on a substructure that is designed to withstand the corresponding mechanical loads of wind and dead weight of the solar modules
- Module weight per m²: 2x 4mm glass approx. 22kg; 2x 6mm glass approx. 33kg;
- Depending on the project, the span width can be extended.
- If the module mounting points are closer to the vertical connection, the span width can be increased.

Cantilever -->|<------------------------ Span ------------------------>|<-- Cantilever

span in mm

cantilever in mm

0.7kN | 1000mm

1 kN | 650mm

wind load per connection point in kN

The planing and fastening of the FAST 2 horizontal profiles to the on-site substructure and the structural substructure as well as the structural analysis is the responsibility of the contractor.
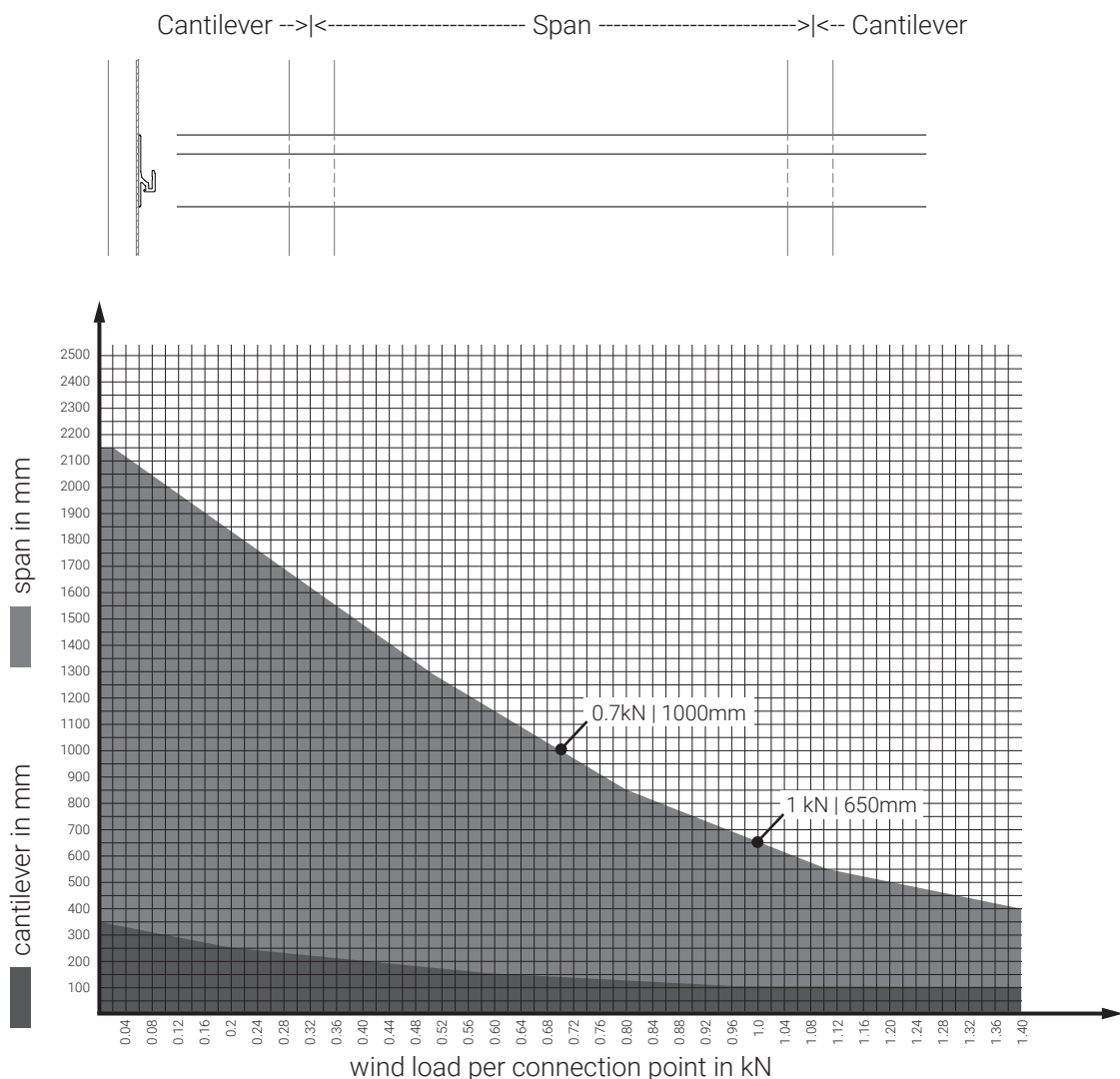
FAST 2 facade system

Calculation according to SN EN1999-1-1 with reduced cross-section according to standard

Load table for surcharge per backrail from 0.31 - 0.4 kN

- Span/Cantilever in millimeters
- Wind load per anchor point in kN, char. Value without load coefficients
- The FAST 2 horizontal profiles must be mounted on a substructure that is designed to withstand the corresponding mechanical loads of wind and dead weight of the solar modules
- Module weight per m²: 2x 4mm glass approx. 22kg; 2x 6mm glass approx. 33kg;
- Depending on the project, the span width can be extended.
- If the module mounting points are closer to the vertical connection, the span width can be increased.

Cantilever -->|<------------------------ Span ------------------------->|<-- Cantilever

The planing and fastening of the FAST 2 horizontal profiles to the on-site substructure and the structural substructure as well as the structural analysis is the responsibility of the contractor.
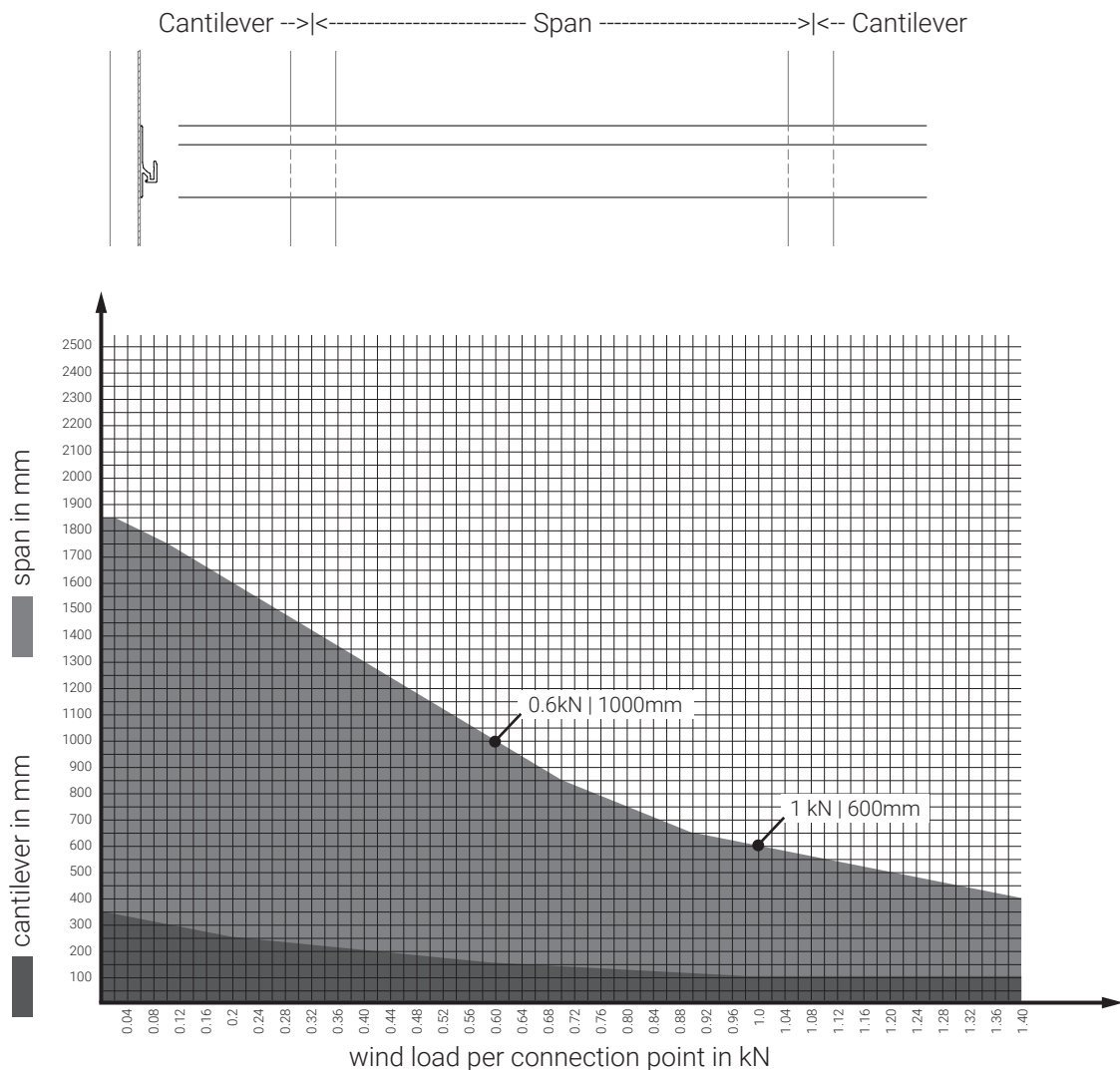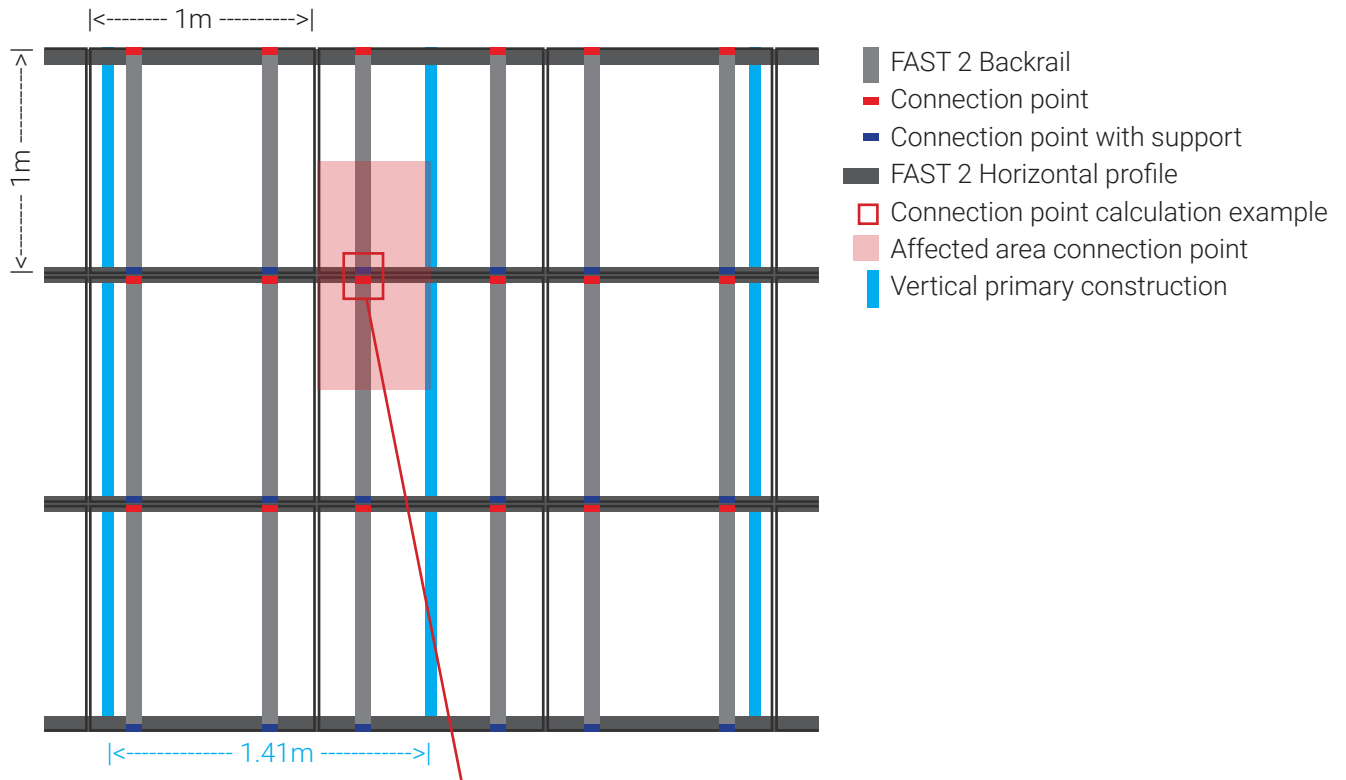
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Horizontal Profile Span & Cantilever

Calculation example

Legend:
- ▌ FAST 2 Backrail
- ▬ Connection point
- ▬ Connection point with support
- ▬ FAST 2 Horizontal profile
- ☐ Connection point calculation example
- ▨ Affected area connection point
- ▌ Vertical primary construction

Dimensions shown: |<------- 1m ------->|, 1m (vertical), |<----------- 1.41m ----------->|

Calculation example of one connection point
(Connection module with backrails to FAST 2 horizontal profile).

Effect of wind:

Reference Value of Dynamic pressure q_{p0}	0.9 kN/m² (depending on wind load zone)
Profile coefficient c_h	1.4 (depending on the terrain category and building height)
pressure coefficient c_{pe}	0.8 (depending on building shape and field or edge area)
char. Wind pressure q_{ek}	0.9 kN/m² x 0.8 x 1.4 = 1 kN/m²

Force per support:

module weight	22 kg (2x4mm glass, 1m²)
Force per support	22 kg : 2 (supports) = 11kg (corresponds to approx. 0.11kN)

Force on anchor point:

Affected area	
on connection point	0.5m²
Force on connection point	1 kN/m² x 0.5m2 = **0.5 kN**

Span according to table: 1410mm

The planing and fastening of the FAST 2 horizontal profiles to the on-site substructure and the structural substructure as well as the structural analysis is the responsibility of the contractor.