IE BETAFENCE



Securifor® & Rectangular Posts

Installation Manual



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 - Panel types / post drilling pattern
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 - Positioning of post & panels
 - Steps of installation

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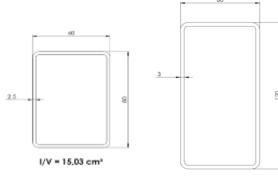


- 1.1 posts
- 1.2 spider fixators
- 1.3 cover plates
- 1.4 neoprene strips
- 1.5 anchor systems
- 1.6 the U-profile
- 1.7 the Securifor panels
- 1.8 posts with base plates

1.1 The posts:

Profiles:

- 80 x 60 x 2,5 mm
- 120 x 60 x 3 mm



I/V = 31,52 cm

→ The <u>section of the post</u> depends on the <u>height of the fence</u>, or can be made to special requirements of the customer

Types:

- Intermediate, end and corner posts
- Posts are foreseen of the appropriate <u>holes and inserts depending on</u> the way of installation (see 3 ways of installation)
- Posts are covered with plastic caps



 Posts are <u>standard without base plate</u>. Posts with base plates are available on request

1.2 The spider fixators:

Types of fixators:

- 58 x 55,8 x 14 mm
- For Securifor 2D & Securifor 4D
- 57,4 x 55,8 x 9,5 mm
- For Securifor flat & Securifor 3D



SEC42P000003



- Depending on the type of panel
 (No fixator for Securifor Super 6)
- Spider fixators are fixed with <u>one-way cross recess button head screws</u>
 M8x40 + PA6 washers M8

1.3 The cover plates:

- 60 x 6 mm



- Hole pattern <u>depending on the way of installation</u> (see 3 ways of installation)
- Height of the cover plates is <u>similar to the panel height</u> (2, 2.4 and 3m), except for 4 meter panels (2m + 2m)
- Cover plates are fixed with <u>Mushroom Head Squareneck bolts</u> M8 (DIN 603) with washer and <u>self-breaking nut</u> or with <u>one-way cross recess</u> <u>button head screws</u> M8x40 (or M6x40) and washer, all in stainless steel (type and length of the screw is also depending on the way of installation)





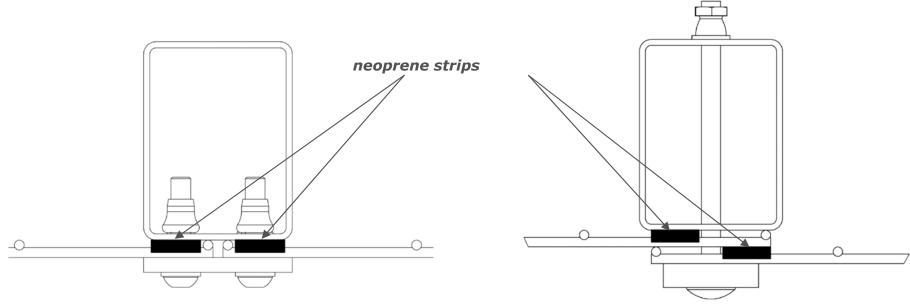




1.4 The neoprene strips:

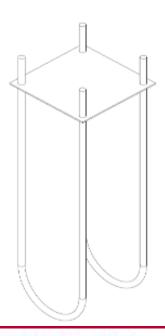
- Self-adhesive strip 20 x 5 x 600 mm
- Strips are on the <u>right length to fit</u> between two inserts on a post
- Strips are placed as indicated in drawings below
- Used for <u>sound reduction</u> when panels are trembling and for <u>flatness</u> of installation

Cover plates are standard installed with neoprene strips (they are not used with spider fixators)



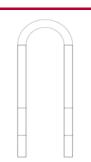
1.5 The anchor systems:

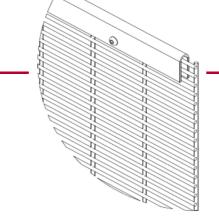
- For posts with a <u>welded</u> base plate
- The foundation anchorage set is mainly used <u>for MTO projects</u> and is not common
- The anchor system makes it possible to level the posts with use of the threaded rods, nuts and washers. It also enhances the rigidity of the fencing system because of its installation in concrete
- Dimensions:
 - Depth 460 mm, plate 200 x 200 x 4 mm, M12 → SEC33A000001
 - Depth 700 mm, plate 230 x 230 x 4 mm, M16 → SEC33A000002
 - Depth 925 mm, plate 300 x 300 x 4 mm, M20 \rightarrow SEC33A000003
- As a standard solution, also <u>mechanical</u>
 or <u>chemical anchor bolts</u> can be used.
 Check the strength specifications on the packaging.



1.6 the U-profile:

- U dimension: 35 x 13 mm, thickness 2mm
- Length of U-profile is standard 2420mm
- Drawing: SEC49P000006





- U-profiles are used for the <u>reinforcement</u> of the upper side of the Securifor panels. As alternative, L-profiles can be used (only MTO)
- A general rule is that <u>flat Securifor panels</u> (SEC50P00000X) should <u>always</u> be installed with <u>U-profiles on top</u>, regardless of the way of installation
- Possible to use with SEC FLAT and SEC 3D
- U-profiles are fixed with <u>Hexagon Socket Button Head Screws</u> M6x25 (ISO 7380), M6 washers and nuts, all in stainless steel



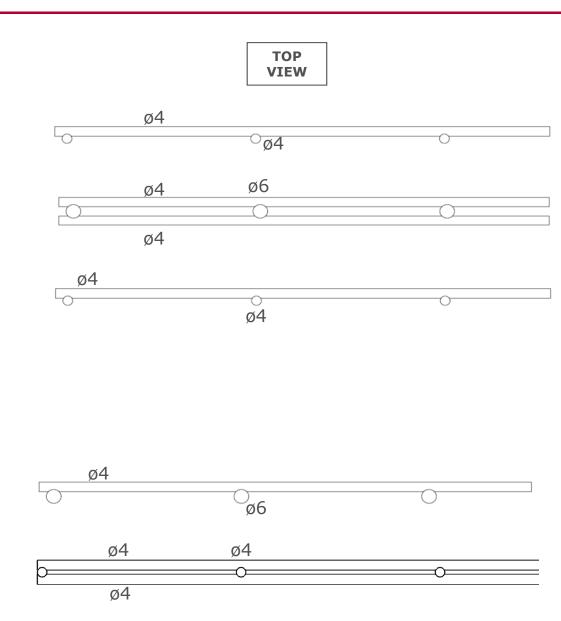
SIDE

VIEW

1.7 The Securifor panels:

- Securifor
- Securifor 2D
- Securifor 3D

- Securifor Super 6
- Securifor 4D





1.7 The Securifor panels:

Post profile (mm)**	Height fence (mm)	Height post (mm)	Number of holes *
80 x 60 x 2,50	2000	2600	8/9
80 x 60 x 2,50	2400	3100	9/10
80 x 60 x 2,50	3000	3700	10/11
120 x 60 x 3,00	4004	4800	12/16

^{*} Depending on the way of installation (see 3 ways of installation)

STANDARD DIMENSIONS OF THE SECURIFOR PANELS

panel	Securifor	Securifor	Securifor	Securifor	Securifor
height		2D	3D	4D	Super 6
finishing	PES / Zincalu super	PES	PES	PES	Zincalu super
2000 mm	×	×	×	x	
2400 mm	X	X	X	Х	
3000 mm	X	X	X		
4004 mm	X	_			

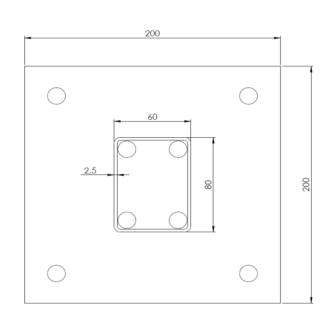
Other dimensions are possible for major quantities on request.



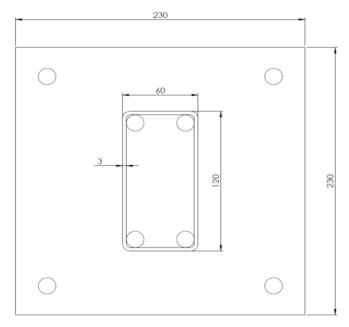
^{**} The post profile can be adapted to specific requirements of the installation. The engineering department should be consulted for more information.

1.8 Base plates:

- Dimensions:
 - For 80 x 60 x 2,5 mm post \rightarrow 200 x 200 x 12 mm base plate
 - For 120 x 60 x 3 mm post \rightarrow 230 x 230 x 15 mm base plate
- Rectangular posts with base plates are <u>always MTO</u>
- Remark that the <u>size and thickness</u> of the base plate is <u>important for stability</u> and should be checked for each project



SEC33P003001



SEC33P003002



- General rules for the installation
- Install foundations
- Install post
- Install panels / 3 ways of installation:
 - With spider fixators
 - Panel types / post drilling pattern
 - Positioning of post & panels
 - Steps of installation
 - With cover plates & panels in overlap
 - Panel types / post drilling pattern
 - Positioning of post & panels
 - Steps of installation
 - With cover plates & panels next to each other
 - Panel types / post drilling pattern
 - Positioning of post & panels
 - Steps of installation

General rules:

- 1. For the installation of <u>flat Securifor</u>, regardless of the way of installation, a U-profile on top is <u>required</u>.
- 2. For the installation of flat Securifor with spider fixators, also a fixation at the bottom is required. (see slide 50 for solutions for a fixation at the bottom)
- 3. For <u>flat Securifor with cover plates</u>, a fixation at the bottom is <u>advised</u>.
- 4. For the installation of <u>Securifor 2D/3D panels</u> no bottom fixation or U-profile on top is required, unless for <u>security reasons</u>.

• Install foundations:

- Preparation of the site
 - To obtain the best results, it is recommended to clear (remove trees, branches, rocks, stones...) and level the area of the fence line over its full length
- Foundation dimensions:

Height fence (m)	Post section (mm)	Post length (m)	Foundation dimensions (cm)
2m00	80 x 60 x 2,5	2m60	45 x 45 x 90
2m40	80 x 60 x 2,5	3m10	45 x 45 x 90
3m00	80 x 60 x 2,5	3m70	45 x 45 x 90
4m00	120 x 60 x 3	4m80	60 x 60 x 90

- Foundation dimensions are for normal European situations. You are advised to consult a specialist structural engineer to evaluate extraordinary wind load, local ground condition or any other special requirements. The dimensions of the foundation (concrete quality B30 is recommended) are related to the chosen height of the fence and/or the post.
- When posts are installed directly into concrete, the long posts need to be supported during curing
 of the concrete for as long as necessary.

• Install foundations:

- Tension a wire over the complete length of the installation, to make sure the posts are installed in a straight line
- Measure the distance between the holes, for the correct interdistance see slide 21
- Dig a hole with the right depth (average 900mm)







• Install posts:

- Lift up the post and bring into the foundation hole
- Position the posts at the correct distance. If possible, use a wooden template to have a perfect installation
- Level the post so that you obtain a correct horizontal line of the fence (fix a bolt in every post to hold the template)
- A laser can also be used to determine the correct height of the posts







• Install posts:

- Level the post vertically
- Fill up the foundation hole with concrete

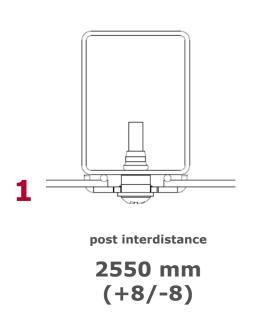


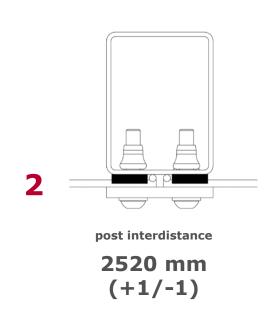


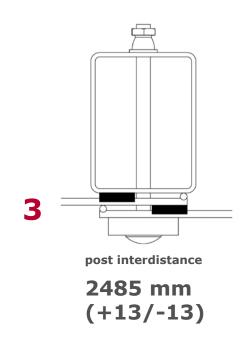
• Install panels:

3 ways of installation

- 1. Installation with spider fixators = standard
- 2. Installation with cover plates panels next to each other = MTO
- 3. Installation with cover plates panels in overlap = MTO (2 possibilities :panels in same direction– panels alternately rotated 180°)

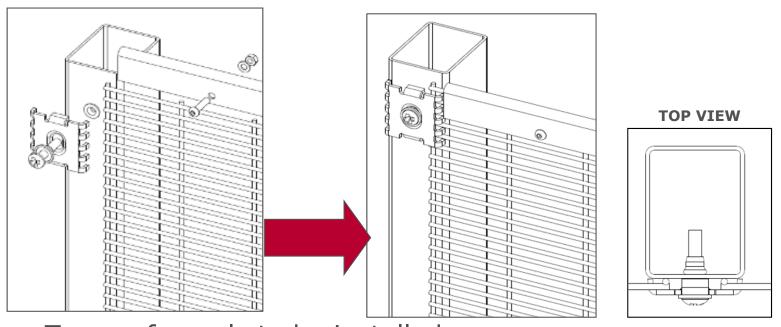






Installation with spider fixators:

POST DRILLING PATTERN DEPENDS FROM POST HEIGHT



- Types of panels to be installed:
 - Securifor 3D
 - Securifor

fixator SEC42P000003

flat Securifor with spider fixators always with U-profile on top + fixation at the bottom!

- Securifor 2D
- Securifor 4D

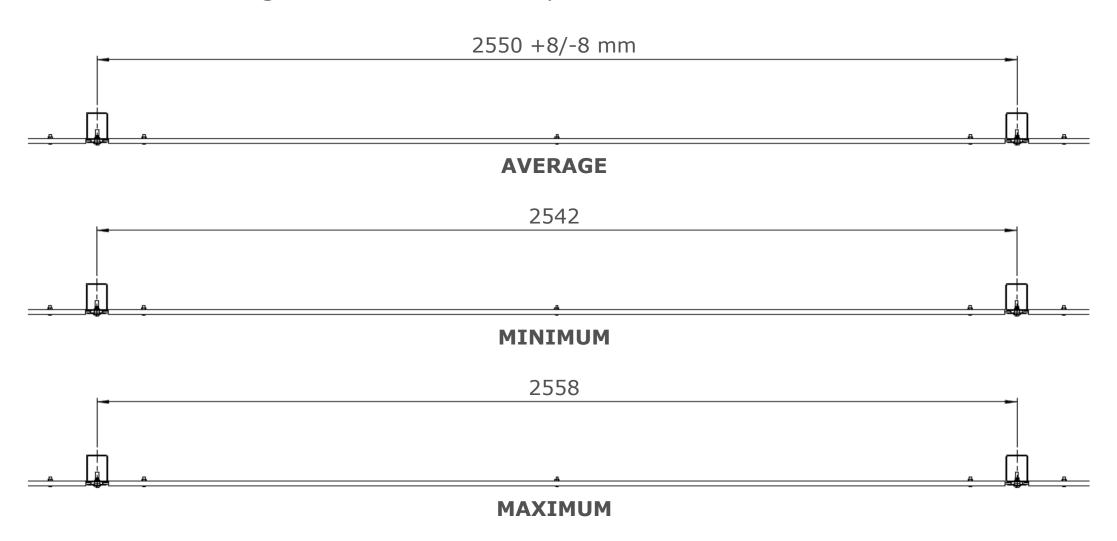
├ fixator SEC42P000004

SEC31P5002XX



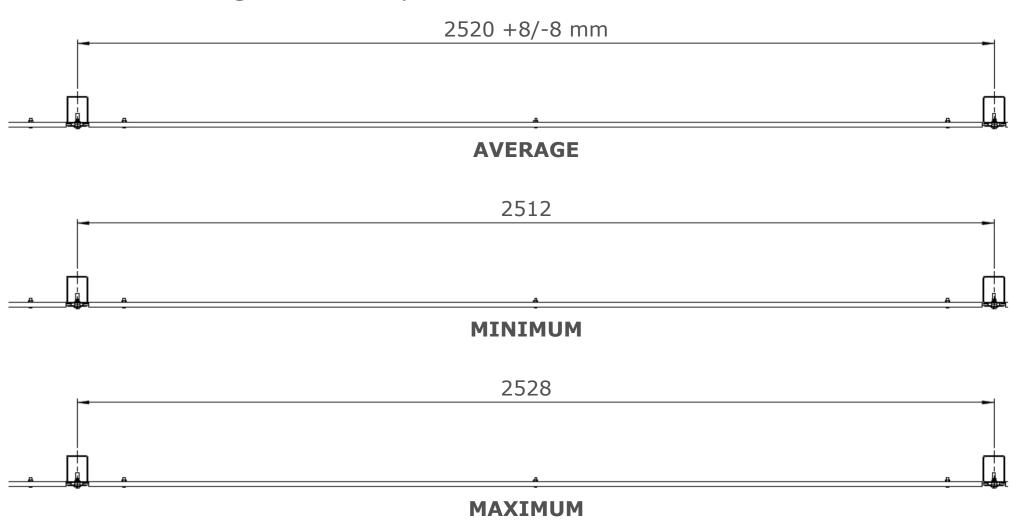
• Installation with spider fixators:

— Positioning of the intermediate posts:



• Installation with spider fixators:

— Positioning of the end posts:



Installation with spider fixators: — Positioning of the corner posts: 2520 +8/-8 **AVERAGE** 2520 +8/-8

• Installation with spider fixators:





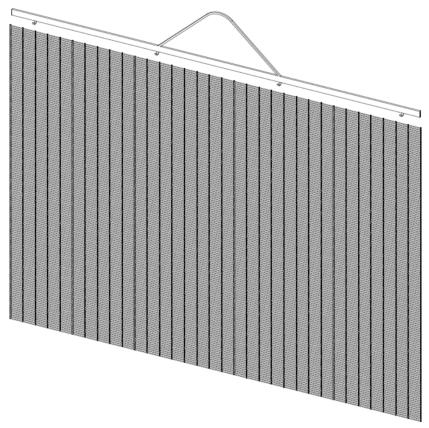
Installation with spider fixators:

- Install the panels
- 1. Lift up the panel

Lifting the panel can be done by hand for the lower range or by using a crane for bigger heights.

Make sure the panel is lifted on multiple points so it can not fold in the middle.

Preferably use a triangle shaped slat to take up the panel in a flat way.



Installation with spider fixators:

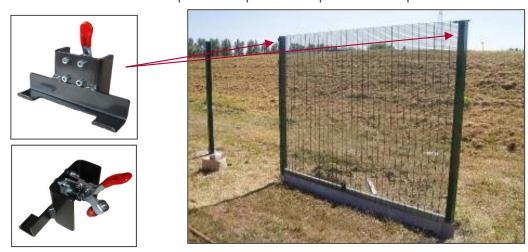
Install the panels

2. Use the installation tool to hang the panel on

The installation tool makes it possible to support the panel in a perfect position, align it horizontally and screw the fixators to the posts without having to hold the panel manually. It can be removed before the last fixator on top of the post is screwed. (For ease of installation, you need 3 pieces)

3. With installation tool

- 1. Hang the first panel and install 2 fixators on the first post (top & bottom)
- 2. By using the installation tool on the first 3 posts, you can now already hang the second panel! Install 2 fixators on the second post (top & bottom)
- 3. Install all other fixators on the first post. If the level is checked and ok, fix the bolts properly
- 4. Change the installation tool from the first to the fourth post and hang up the third panel. Install 2 fixators on the third post (top & bottom)
- 5. Install all fixators to the second post
- 6. For the next post and panels: repeat the steps as described above







Installation with spider fixators:

Install the panels

4. Without installation tool

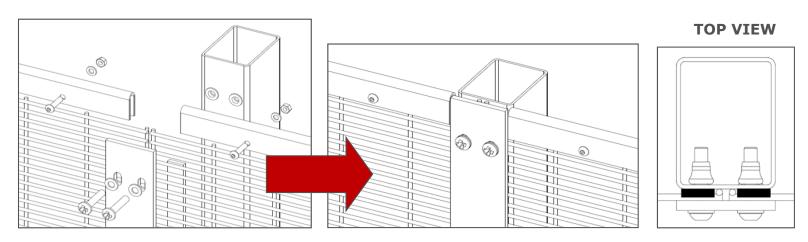
- 1. Hang the first panel and install 2 fixators on the first post (top & bottom)
- 2. Install 2 fixators on the second post. Make sure you leave +/-1cm distance between the fixator and the post, so a second panel can be added afterwards
- 3. Install all other fixators on the first post. If the level is checked and ok, fix the bolts properly
- 4. Install the second panel. Screw the 2 fixators on the second post and fix 2 fixators on the third post (top & bottom) with +/-1cm opening
- 5. Install all fixators to the second post
- 6. For the next posts and panels: repeat the steps as described above

It's required to finish the installation with U-profiles when flat Securifor is used. For installation of flat Securifor with spider fixators, it's also required to add a fixation at the bottom! (See page 50 for possible solutions)

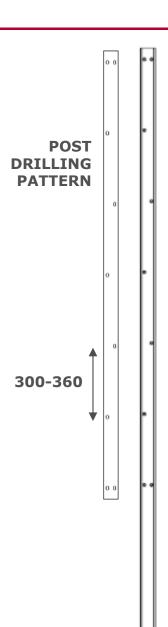




Installation with cover plates – panels next to each other:



- Types of panels to be installed:
 - Securifor → flat Securifor always with U-profile on top!
 - Securifor Super 6
 - Securifor 2D
- Standard installation with <u>neoprene strips</u>
- Standard installation with <u>cover plate screwed at one side</u>
 of the <u>post</u> with bolts ISO 7380 M8x40, washer and
 insert M8 into the post. If necessary, bolts can also be
 mounted through the post.



- Installation with cover plates panels next to each other:
 - Alternative fixation with M6 bolts

In some cases, it is preferred to use M6 bolts for ease of installation. The cover plate will then be foreseen of a double row of sleeve holes, so more bolts can be fixed.

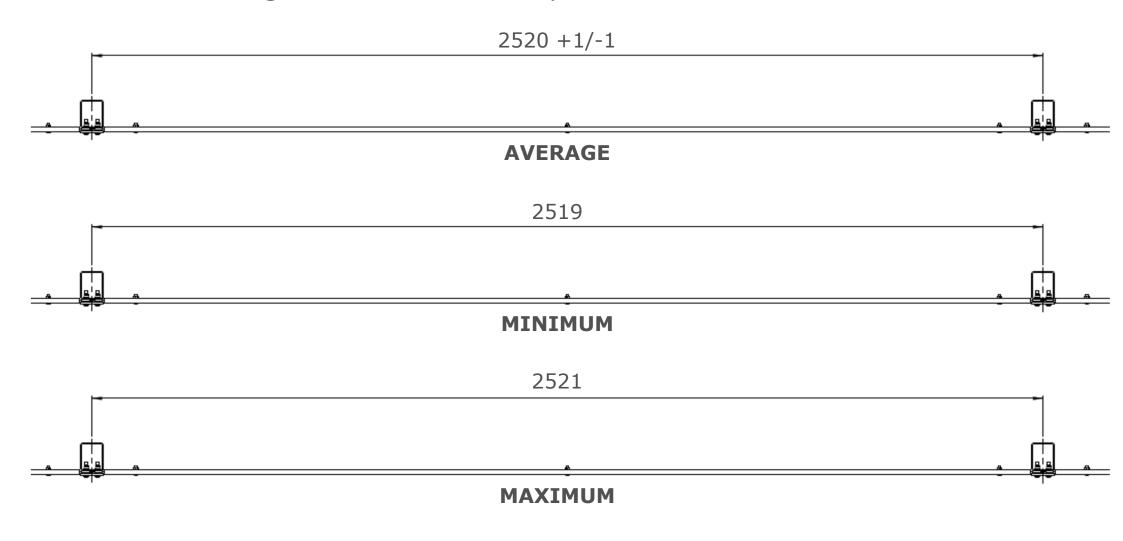
M8 - alternating holes



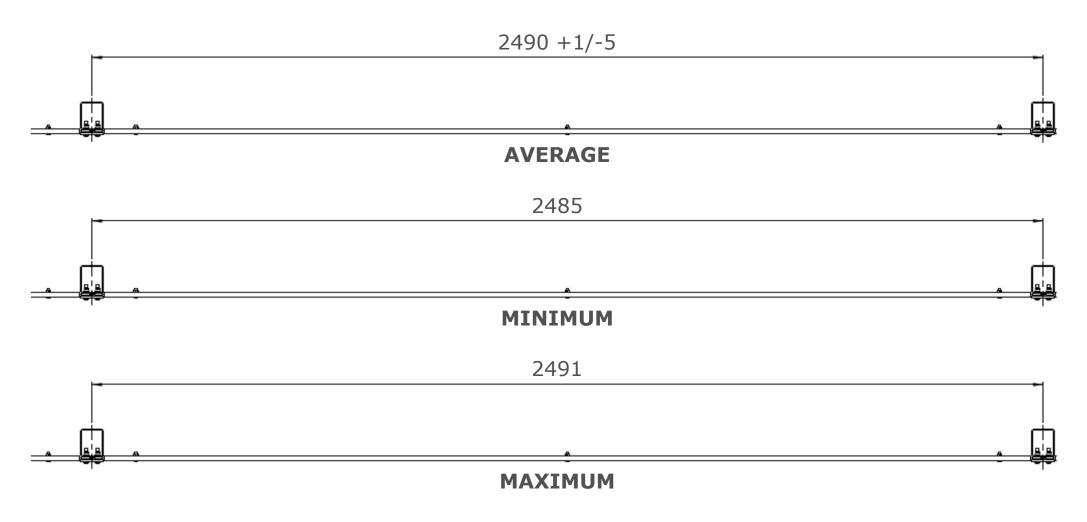
M6 - double row of holes



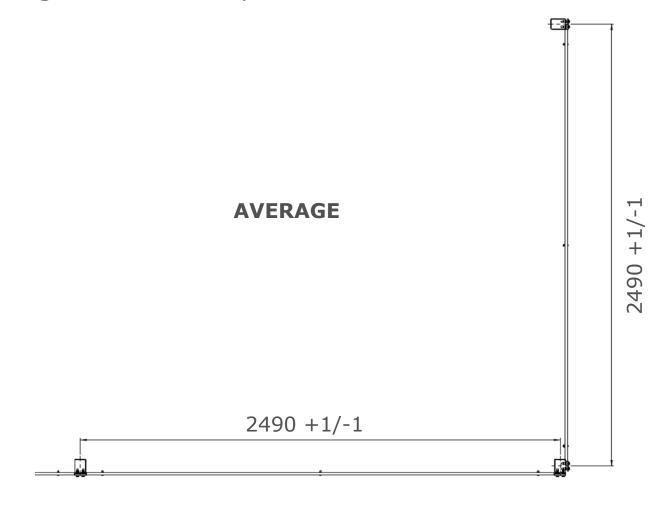
- Installation with cover plates panels next to each other:
 - Positioning of the intermediate posts:



- Installation with cover plates panels next to each other:
 - Positioning of the end posts:



- Installation with cover plates panels next to each other:
 - Positioning of the corner posts:



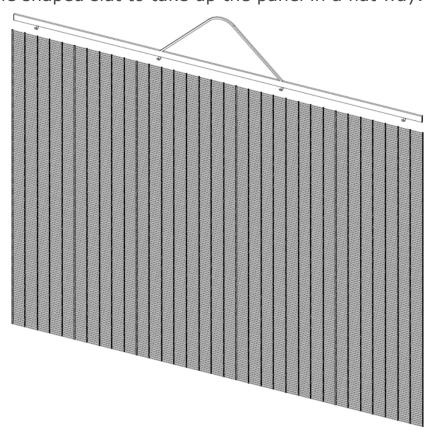
Installation with cover plates – panels next to each other:







- Installation with cover plates panels next to each other:
 - Install the panels
 - Lift up the panel
 Lifting the panel can be done by hand for the lower range or by using a crane for bigger heights.
 Make sure the panel is lifted on multiple points so it can not fold in the middle.
 Preferably use a triangle shaped slat to take up the panel in a flat way.



Installation with cover plates – panels next to each other:

Install the panels

2. Use the installation tool to hang the panel on

The installation tool makes it possible to support the panel in a perfect position, align it horizontally and screw the fixators to the posts without having to hold the panel manually. It can be removed before the last bolt on top of the post is screwed. (For ease of installation, you need 3 pieces)

3. With installation tool

- 1. First glue the neoprene strips between the inserts on the front side of the posts
- 2. Hang the first panel and install a cover plate on the first post with 2 bolts (top & bottom)
- 3. By using the installation tool on the first 3 posts, you can now already hang the second panel! Install a cover plate on the second post with 2 bolts (top & bottom)
- 4. Install all other bolts on the first post. If the level is checked and ok, fix the bolts properly
- 5. Change the installation tool from the first to the fourth post and hang up the third panel. Fix a cover plate to the third post with 2 bolts (top & bottom)
- **6**. Install all other fixators to the second post
- 7. For the next posts and panels: repeat the steps as described above













Installation with cover plates – panels next to each other:

Install the panels

4. Without installation tool

- 1. First glue the neoprene strips between the inserts on the front side of the posts
- 2. Hang the first panel and install a cover plate on the first post with 2 bolts (top & bottom)
- 3. Temporarily fix the panel with a bolt to the second post.
- 4. Install all other bolts on the first post. If the level is checked and ok, fix the bolts properly
- 5. Install the second panel. Remove the bolt on the second post and put a cover plate in place. Fix with 2 bolts. Temporarily fix a bolt to the third post
- **6.** Install all bolts to the second post
- 7. For the next posts and panels: repeat the steps as described above

It's required to finish the installation with U-profiles when flat Securifor is used, and it's also advised to add a fixation at

the bottom (see page 50 for possible solutions).







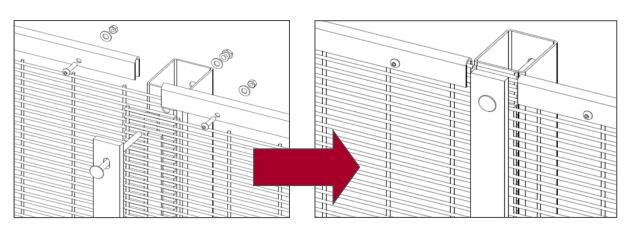
Installation with cover plates – panels next to each other:

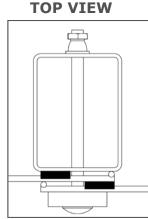
Remark

In some cases it can be harder to find the holes for the bolts when installing the cover plates. For ease of installation, it's allowed to use a 'secure' awl or screwdriver to <u>slightly</u> bow the wires of the panel, so the bolts can be mounted.



Installation with cover plates – panels in overlap & in <u>same</u> direction:



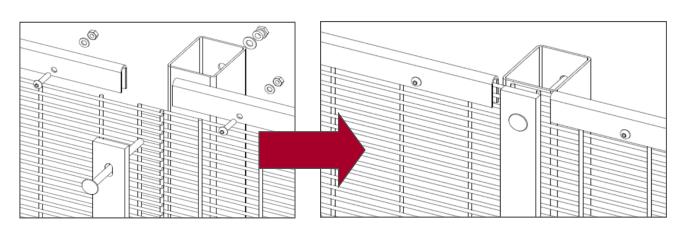


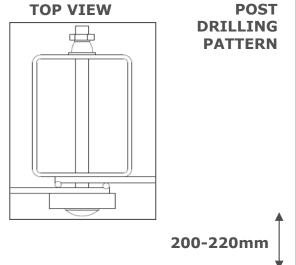


POST DRILLING PATTERN

- Types of panels to be installed:
 - Securifor → always with U-profile on top!
 - Securifor Super 6
- Standard installation with <u>neoprene strips</u>
- Standard installation with <u>cover plate screwed through</u>
 <u>the post</u> with mushroom head square neck bolts M8,
 washer M8 and self-breaking nut M8. If necessary, bolts can also be screwed only at one side of the post (use post with inserts)

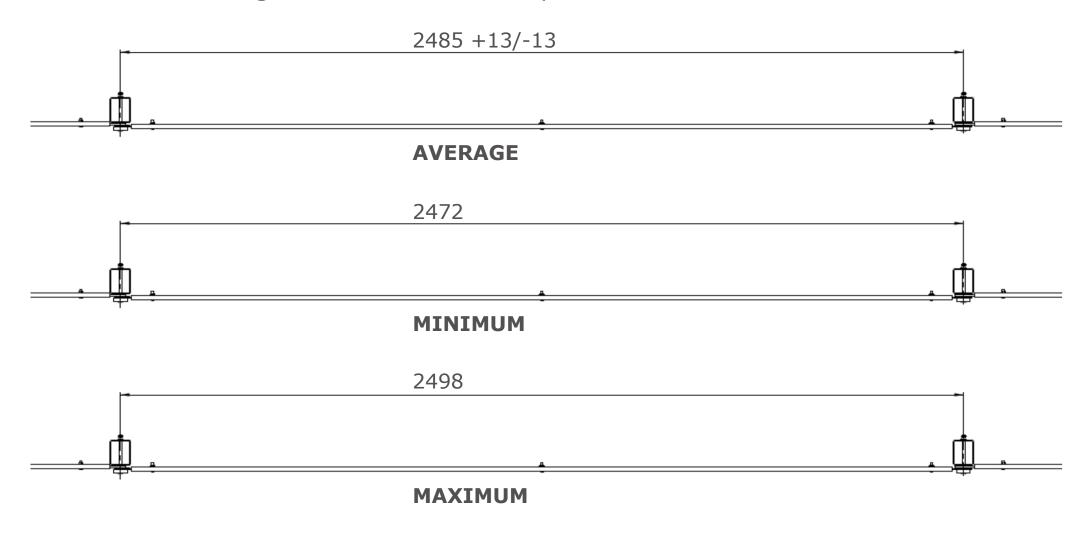
Installation with cover plates – panels in overlap & in <u>opposite</u> direction:



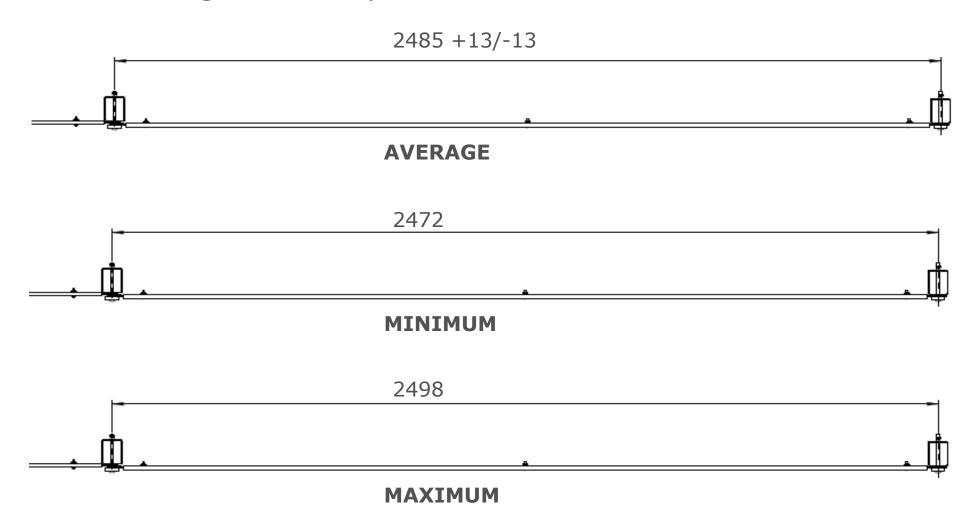


- Types of panels to be installed:
 - Securifor → always with U-profile on top!
 - Securifor Super 6
- Standard installation with <u>cover plate screwed through</u> <u>the post</u> with mushroom head square neck bolts M8, washer M8 and self-breaking nut M8. If necessary, bolts can also be screwed only at one side of the post

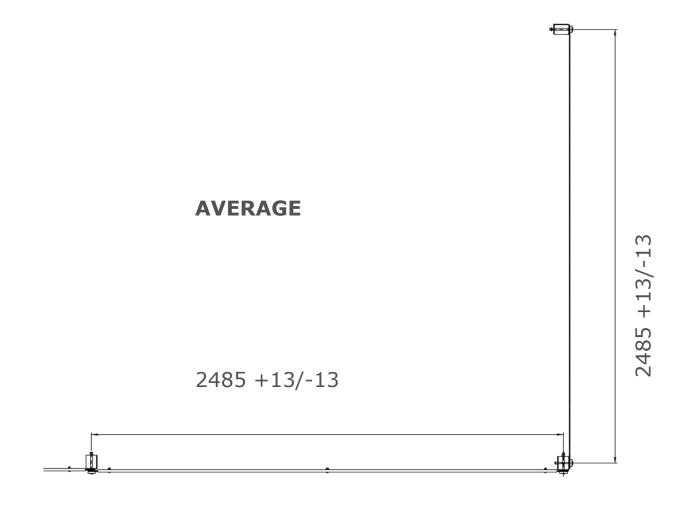
- Installation with cover plates panels in overlap:
 - Positioning of the intermediate posts:



- Installation with cover plates panels in overlap:
 - Positioning of the end posts:



- Installation with cover plates panels in overlap:
 - Positioning of the corner posts:



Installation with cover plates – panels in overlap:







Installation with cover plates – panels in overlap:

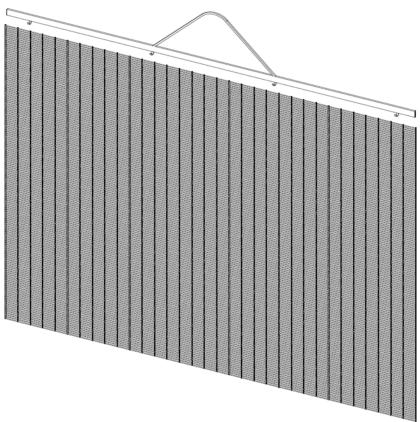
Install the panels

1. Lift up the panel

Lifting the panel can be done by hand for the lower range or by using a crane for bigger heights.

Make sure the panel is lifted on multiple points so it can not fold in the middle.

Preferably use a triangle shaped slat to take up the panel in a flat way.



• Installation with cover plates – panels in overlap:

Install the panels

2. Use the installation tool to hang the panel on

The installation tool makes it possible to support the panel in a perfect position, align it horizontally and screw the fixators to the posts without having to hold the panel manually. It can be removed before the last bolt on top of the post is screwed. (For ease of installation, you need 3 pieces)

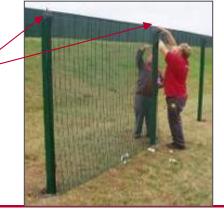
3. With installation tool

- 1. First glue the neoprene strips on 1 side of the inserts. (Only for panels in the same direction)
- 2. Hang the first panel and install a cover plate on the first post with 2 bolts (top & bottom)
- 3. Glue the neoprene strips on the first panel near the second post. Position the strips to the one side of the inserts. (Only for panels in the same direction)
- 4. By using the installation tool on the first 3 posts, you can now already hang the second panel! Install a cover plate on the second post with 2 bolts (top & bottom)
- 4. Install all other bolts on the first post. If the level is checked and ok, fix the bolts properly
- 5. Change the installation tool from the first to the fourth post and hang up the third panel. Fix a cover plate to the third post with 2 bolts (top & bottom)
- 6. Fix all bolts to the cover plate on the second post
- 7. For the next posts and panels: repeat these steps as described above











Installation with cover plates – panels in overlap:

Install the panels

4. Without installation tool

- 1. First glue the neoprene strips on 1 side of the inserts. (Only for panels in the same direction)
- 2. Hang the first panel and install a cover plate on the first post with 2 bolts (top & bottom)
- 3. Temporarily fix the panel with a bolt to the second post.
- 4. Install all other bolts to the first post. If the level is checked and ok, fix the bolts properly
- 5. Glue the neoprene strips on the first panel near the second post. Position the strips to the one side of the inserts. (Only for panels in the same direction)
- 6. Install the second panel. Remove the bolt on the second post and put a cover plate in place. Fix with 2 bolts. Temporarily fix the second panel with a bolt to the third post
- 7. Install all other fixators to the second post
- 8. For the next posts and panels: repeat the steps as described above

It's required to finish the installation with U-profiles when flat Securifor is used, and it's also advised to add a fixation at the bottom. (see page 50 for possible solutions)











Installation with cover plates – panels beside each other:

Remark

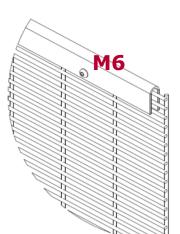
In some cases it can be harder to find the holes for the bolts when installing the cover plates. For ease of installation, it's allowed to use an 'secure' awl or screwdriver to <u>slightly</u> bow the wires of the panel, so the bolts can be mounted.



- Extra security
- Special cases

Solutions for high security applications:

To get a <u>higher rigidity</u> of the panel at the top



U-profile

Combination with SEC FLAT/3D only

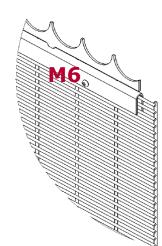
FP = 7078416 (HDG + RAL 6005)

Fixed with bolts ISO 7380 M6x25, M6 washer and nut (all in SS)

Fixation set (50x) (bolts + nuts + washers) SAP = 7078417

Drawing: SEC49P000006

(See also 1.7 on slide 10)



U-profile with dental strip

Combination with SEC FLAT/3D only

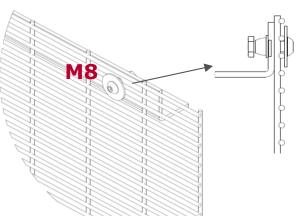
FP = 7078411 (HDG + RAL 6005)

Fixed with bolts ISO 7380 M6x25, M6 washer and nut (all in SS)

Fixation set (50x) (bolts + nuts + washers)

SAP = 7078417

Drawing: SEC49A000001



L-profile

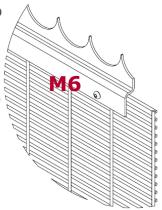
Combination with SEC 358/2D/3D/4D

FP = 7064562 (HDG + RAL 6005)

Fixed with bolts ISO 7380 M8x25, thick washer M8x30x1.5 (front), M8 washer DIN125 and self-breaking nut (all in SS)

Fixation set (50x) = 7078421

Drawing: SEC49P301002



Z-profile with dental strip

Combination with SEC FLAT/2D/3D/4D

FP = 7076747 (HDG + RAL 6005)

Fixed with bolts ISO 7380 M6x25, M6 washer and nut (all in SS)

Fixation set (50x) (bolts + nuts + washers)

SAP = 7078417

Drawing: SEC49P002002

Solutions for high security applications:

- To get a <u>higher rigidity</u> of the panel at the bottom
- Fixation at the bottom, for security reasons

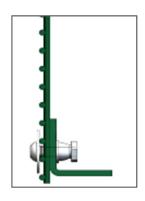
Solutions for a fixation at the bottom

1. H-piece with concrete plate





2. L-profile screwed at the bottom





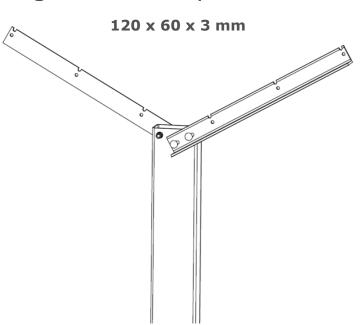
- Combination with SEC FLAT/2D/3D/4D
- FP = 7037165 (HDG + RAL 6005)
- A short <u>H-profile</u> that's sliding over a concrete plate and can be fixed to the Securifor panel
- If the panel and concrete plate are overlapping, a <u>simplified</u> folded piece can be used instead fixed with bolt M8x25 DIN603, washer and self-breaking nut M8
- Fixation set (50x) => SAP 7078421
- Drawing: SEC49P004001
- Combination with SEC FLAT/2D/3D/4D
- FP = 7063560 (HDG + RAL 6005)
- An <u>L-profile</u> that's fixed to the bottom of the panel (L = 100x50x4mm)
- Fixed with bolts M8x30 DIN7380, washer ISO M8 7093 and self-breaking nut M8
- Fixation set (50x) => SAP 7078421
- Drawing: SEC49P006001



Solutions for high security applications:

- Extension arms
- FP = 7025620 (HDG + RAL 6005)
- Drawing: SEC34P001001
- Fixation set (50x) => SAP 7064712
 - Mushroom head square neck bolts M8x80mm
 + security nut inox type M8 + washer inox M8
- posts have to be 100mm longer at the top

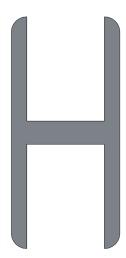


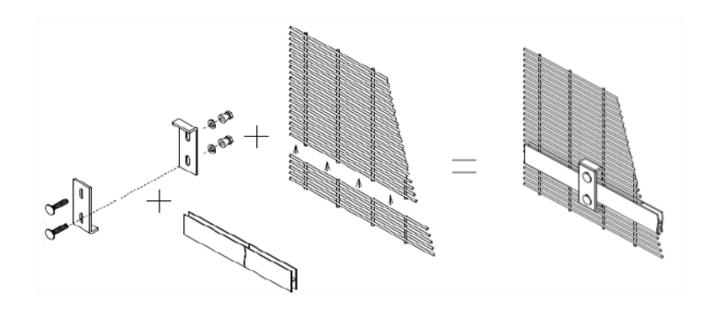




Special cases

- H-profile For superposition of Securifor panels
- Joining 2 panels in the vertical plane
- FP= 7035091 (ALU + RAL 6005)
- Drawing: SEC49P008001
- Connection Piece = 7018414 (HDG + RAL 6005)
- Fixing set for connection piece (100x) = SAP 7061583



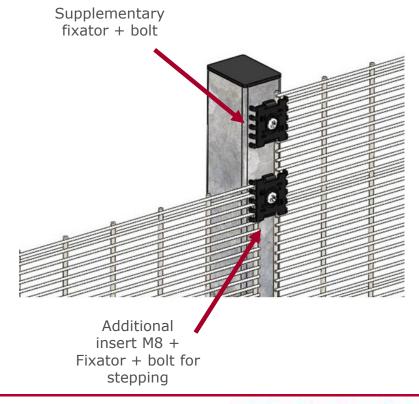


Special cases

- Shortening of panels
 - If panels have to be shortened, for instance at the end of the fence-line or in the corners, this has to be done <u>by complete meshes</u>. This means by <u>multiples of 76.2mm</u>. The distance between two posts has to be reduced accordingly.

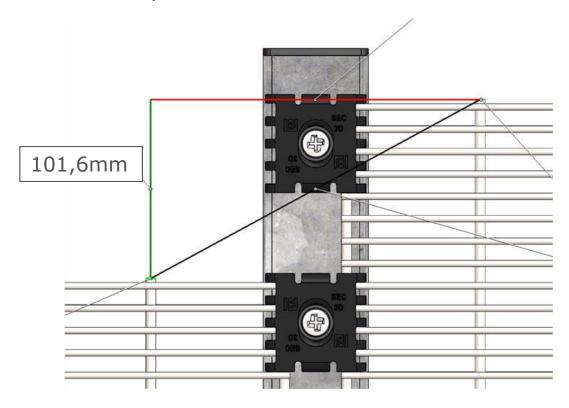
Slopes

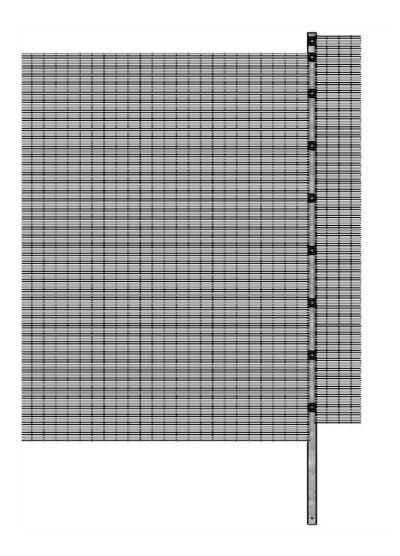
- In case of a slope, we recommend to check the different levels and to <u>decide</u> on the best <u>position and stepping</u> (and the number of steps) to be made.
- A step in height always has to be <u>a multiple</u> of 12.7mm. A step of 330.2mm in height is the maximum recommended.
- Additional Insert M8 for stepping is foreseen on post It is able to <u>install an extra fixator</u> at that position.
- In case of a slope and with <u>cover plates</u>, longer cover plates have to be made (MTO) with extra holes.



Special cases

— Slopes





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