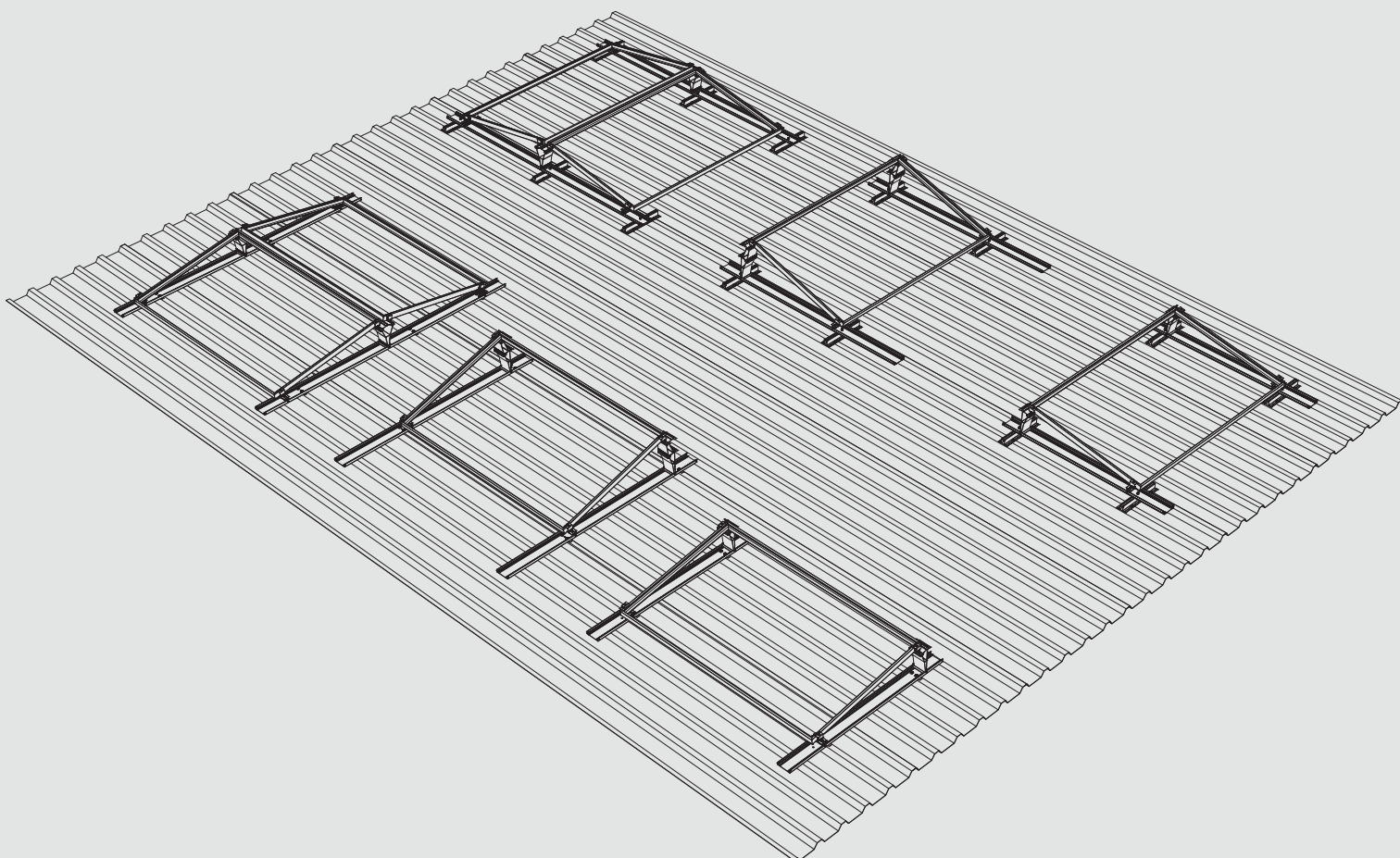


FS10-EW, FS10-S, FS18-S ***on trapezoidal sheets***

DE | Installationsanleitung
GB | Installation Instructions
FR | Notice d'installation
ES | Manual de instalación



DE | Lesen Sie diese Installationsanleitung vor Montagebeginn!
Montage nur durch sachkundige, qualifizierte Personen!

GB | Read these instructions before installation!
Installation should only be carried out by skilled, qualified personnel!

FR | Prenez soin de lire le présent manuel d'installation avant le début du montage!
Montage seulement par des personnes compétentes et qualifiées!

ES | Lea estas instrucciones de instalación antes de comenzar el montaje!
El montaje solo debe realizarlo personal experto y cualificado.



DE | Verwendung

Montagesystem für die Installation von gerahmten PV-Modulen von 30 bis 50 mm Dicke auf Schrägdächern mit folgenden Eigenschaften:

- Trapezblech
- Stahl ab 0,4 - 1,25 mm Stärke
- Aluminium ab 0,5 - 1,50 mm Stärke
- Breite Hochsicke min. 12 mm
- Dachneigung 0° - 20°

Eine Montage auf Sandwichdächern erfordert die Zustimmung des Herstellers.

Berücksichtigen Sie bei der Montage die gültigen Regelwerke, den Stand der Technik und die aktuellen Arbeitsschutzrichtlinien, insbesondere bei Arbeiten auf dem Dach.

Prüfung/Zertifizierung:

- MS+ (R420402/R420403)
TÜV ID: 1111212485
- MS+ (R420405)
ETN 010T1606
- MS+P (R420422)
TÜV ID: 1111212485
- MS+P (R420421)
MCS012 IK0197/02
TÜV ID: 1111212485
- FS10-S, FS18-S, FS10-EW
TÜV ID: 1111212485

Module sind immer quer zu montieren.

Beim Montagesystem FS werden die Module im Eckbereich der kurzen Moduleseite befestigt. Es ist bauseits zu prüfen, ob der vom Modulhersteller vorgegebene Klemmbereich eingehalten wird sowie die zulässigen Modulasten nicht überschritten werden.

Ablaufbohrungen in PV-Modulrahmen müssen freigehalten werden und dürfen durch das Montagesystem nicht verdeckt werden.

Für die Montage muss die Dachfläche frei von Schnee, Eis und Schmutz sein.

Berücksichtigen Sie bei der Montage die gültigen Regelwerke, den Stand der Technik und die aktuellen Arbeits-

schutzrichtlinien.

Voraussetzung für den bestimmungsgemäßen Einsatz ist immer ein geeigneter Untergrund, der die auftretenden Kräfte (Gewichtslast, Wind und Schneelast) aufnehmen kann. Der Wasserablauf des Flachdaches und dessen Richtung muss beachtet werden.

Windgutachten

Die Sog- und Druckbeiwerte sind in Windkanalversuchen ermittelt worden. Diese können auf Anfrage von der Renusol Europe GmbH zur Verfügung gestellt werden.

Mitgelte Dokumente

"Allgemeine Installations-, Wartungs- und Montagehinweise"

"Sicherheitshinweise zur Installationsanleitung"

"Garantiebedingungen und Haftungsausschluss."

Diese Dokumente sind verfügbar unter www.renusol.com

Garantie und Gewährleistung

Die Garantie von Renusol gilt nur bei Verwendung des original FS Komplettsystems und Einhaltung der Garantiebedingungen. Für die gesetzliche Mängelhaftung/Gewährleistung beachten Sie bitte die Allgemeine Geschäftsbedingungen von Renusol.

www.renusol.com



Vor Montage muss die Standsicherheit des PV-Systems nachgewiesen werden. Die Gebäudekonstruktion, Dachabdichtung sowie Dämmschicht müssen die zusätzlichen Lasten sicher aufnehmen können.



GB | General Guidelines

Mounting system for installing framed PV panels with thicknesses of between 30 and 50 mm on pitched roofs with the following characteristics:

- Trapezoidal metal sheet
- Steel thickness 0.4 - 1.25 mm
- Aluminum thickness 0.5 - 1.50 mm
- Width of raised beads 12 mm
- Roof pitch 0° - 20°

The installation on sandwich roofs requires the manufacturer's approval.

Be sure to observe the relevant regulations, latest technology standards and current health and safety guidelines during installation and, in particular, while working on the roof.

Testing/certification:

Technical approval:

- MS+ (R420402/R420403)
TÜV ID: 1111212485
- MS+ (R420405)
ETN 010T1606
- MS+P (R420422)
TÜV ID: 1111212485
- MS+P (R420421)
MCS012 IK0197/02
TÜV ID: 1111212485
- FS10-S, FS18-S, FS10-EW
TÜV ID: 1111212485

Modules are always to be mounted in landscape.

When mounted by the FS10-S/FS18-S, modules are mounted in the corner of the long sides. It must be checked, whether the value specified by the module manufacturer clamping range is maintained.

Drain holes in PV module frame must be kept clear and may not be obscured by the mounting system.

The roof area must be free of snow, ice and dirt during installation.

Be sure to observe the relevant regulations, latest technology standards and current health and safety guidelines during installation.

A suitable subsurface that can absorb any forces that may occur (weight,

wind and snow loads) is always a prerequisite for use in accordance with regulations. Water drainage on the flat roof and its direction must also be taken into consideration.

Windreport

The pressure and suction coefficients are calculated on the basis of wind tunnel tests and are available from Renusol GmbH on request.

Applicable Documents

"General installation, maintenance and assembly instructions"

"Safety Instructions for Installation Instructions"

"Warranty and Disclaimer."

These documents are available at www.renusol.com

Warranty

The Renusol warranty only applies if an original FS complete system is used and the warranty terms and conditions are met. For implied defects liability/warranty please refer to the Renusol General Terms and Conditions.

www.renusol.com



The structural stability of the PV system must be verified before installation. The building construction, roofing and insulation must withstand the additional loads safely.



FR | Recommandations générales

Système de montage pour l'installation de modules photovoltaïques cadrés d'une épaisseur de 30 - 50 mm sur des toitures pentues de caractéristiques suivantes :

- Tôles trapézoïdales en acier et en aluminium
- Épaisseur de tôle acier à partir de 0,4 - 1,25 mm
- Épaisseur de tôle aluminium à partir de 0,5 - 1,50 mm
- Largeur de nervure min. 12 mm
- Pente du toit 0° - 20°

Un montage sur des toitures sandwichs requiert l'autorisation préalable de son constructeur.

Tenez compte lors du montage des règles de l'art, de l'état de la technique et des directives actuelles concernant la sécurité et la santé au travail, notamment lors de travaux effectués en toiture.

Essai/certification :

- MS+ (R420402/R420403)
TÜV ID: 1111212485
- MS+ (R420405)
ETN 010T1606
- MS+P (R420422)
TÜV ID: 1111212485
- MS+P (R420421)
MCS012 IK0197/02
TÜV ID: 1111212485
- FS10-S, FS18-S, FS10-EW
TÜV ID: 1111212485

Les modules sont toujours à être monté transversalement.

Les trous de drainage dans le cadre du module PV doivent être dégagés et ne peuvent pas être masqués par le système de montage.

Lors du montage, la surface de toit doit être exempte de neige, de glace et de saletés.

Prendre en compte lors de l'assemblage des réglementations en vigueur, l'état de l'art et de la réglementation en matière de santé et de sécurité.

Pour que l'utilisation soit conforme à la destination, il convient de choisir



Avant le montage, la stabilité statique du système photovoltaïque doit être prouvée. La construction du bâtiment doit pouvoir absorber sûrement les charges supplémentaires.

un sol approprié capable d'absorber les forces en présence (poids, vent et neige). L'écoulement des eaux de la toiture plate et sa direction doivent également être pris en compte.

Rapport de vent

Les coefficients de succion et de pression ont été déterminés dans le cadre d'essais en soufflerie aérodynamique. Sur demande, ils peuvent être mis à votre disposition par la Renusol GmbH.

Garantie

La garantie Renusol n'est valable qu'en cas d'utilisation du système FS complet original et de respect des conditions de garantie. Pour la garantie en raison des défauts/garantie de qualité, veuillez-vous référer aux conditions générales de vente de Renusol.

www.renusol.com



ES | Indicaciones generales

Sistema de montaje para instalar módulos fotovoltaicos con marco de 30 hasta 50 mm de grosor en tejados inclinados con las siguientes características:

- Chapa trapezoidal de acero y aluminio
- Grosor de la chapa de acero a partir de 0,4 - 1,25 mm
- Grosor de la chapa de aluminio a partir de 0,5 - 1,5 mm
- Ancho del reborde elevado mín. 12 mm
- Inclinación del tejado 0° - 20°
- FS10-S, FS18-S, FS10-EW
TÜV ID: 1111212485

Un montaje sobre tejados tipo sándwich requiere la aprobación del fabricante.

Tenga en cuenta durante el montaje los códigos vigentes, el estado de la técnica y las directivas de protección en el trabajo, sobre todo en los trabajos en el tejado.

Comprobación/certificación:

- MS+ (R420402/R420403)
TÜV ID: 1111212485
- MS+ (R420405)
ETN 010T1606
- MS+P (R420422)
TÜV ID: 1111212485
- MS+P (R420421)
MCS012 IK0197/02
TÜV ID: 1111212485
- FS10-S, FS18-S, FS10-EW
TÜV ID: 1111212485

Los módulos son siempre para ser montado transversalmente.

Los agujeros de drenaje en PV marco del módulo deben estar libres y no pueden ser oscurecidas por el sistema de montaje.

Para el montaje, la superficie del tejado debe estar libre de nieve, hielo y suciedad.

Tenga en cuenta durante el montaje los códigos vigentes, el estado de la técnica y las directivas de protección en el trabajo, sobre todo en los trabajos en el tejado.



Antes del montaje se debe verificar la estabilidad del sistema fotovoltaico. El edificio debe poder recibir con seguridad las cargas adicionales.

Un requisito indispensable para una utilización conforme es contar siempre con un sustrato adecuado y capaz de soportar las fuerzas que se producirán (peso, viento y nieve). También hay que tener en cuenta la evacuación del agua en cubiertas planas y su dirección.

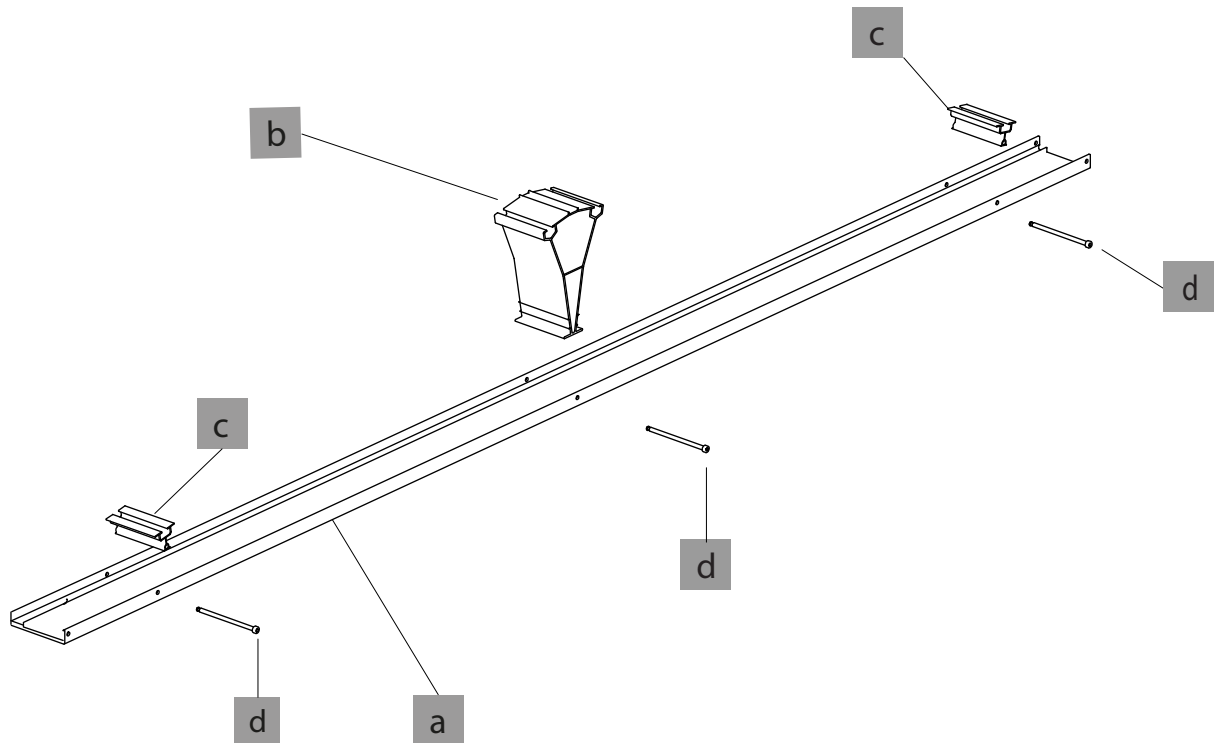
Evaluaciones de viento

Los valores de presión y succión han sido determinados en pruebas dentro del túnel del viento. Renusol GmbH puede facilitarle estos datos en caso de solicitud.

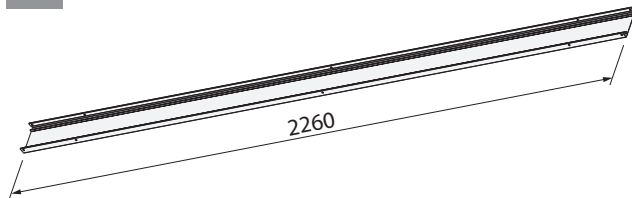
Garantía

La garantía de Renusol solo tiene validez si se utiliza el sistema completo original FS y se cumplen las condiciones de la garantía. Para la responsabilidad por deficiencias/prestación de la garantía tenga en cuenta las condiciones comerciales generales de Renusol.

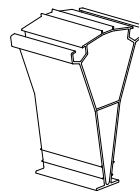
www.renusol.com



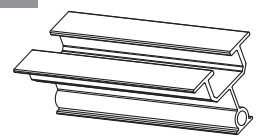
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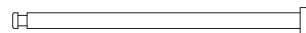
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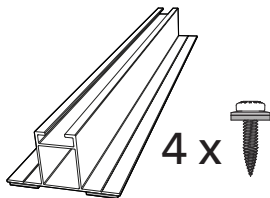
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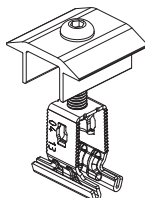
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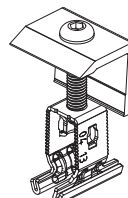
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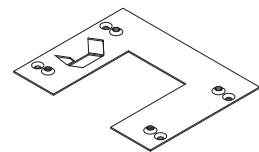
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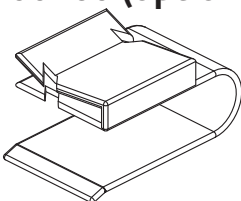
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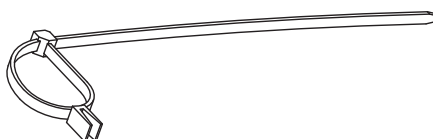
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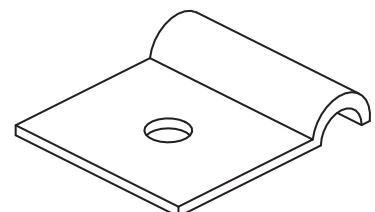
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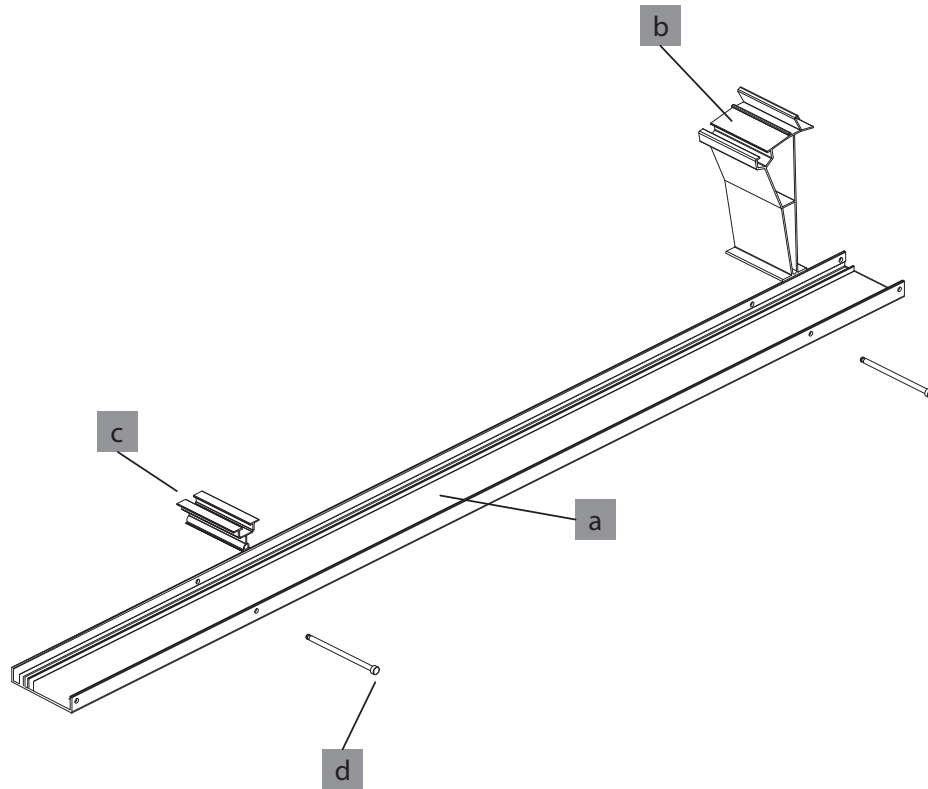


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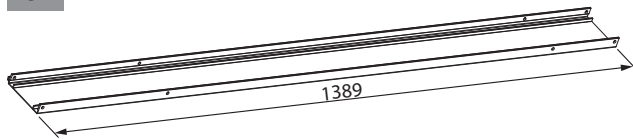


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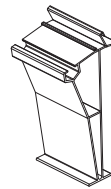




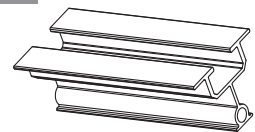
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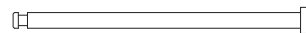
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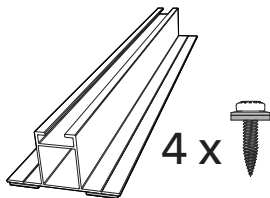
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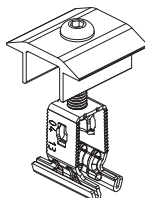
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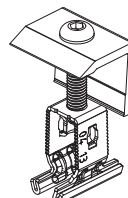
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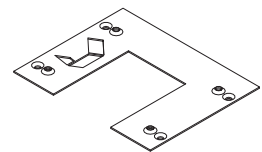
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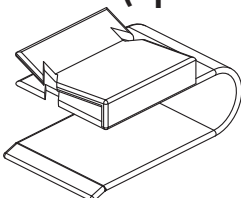
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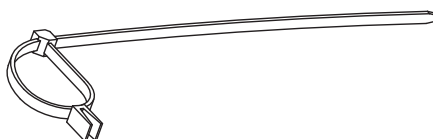
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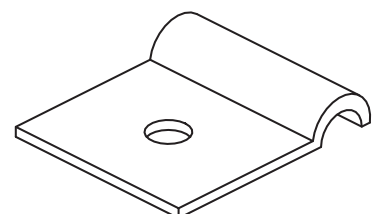
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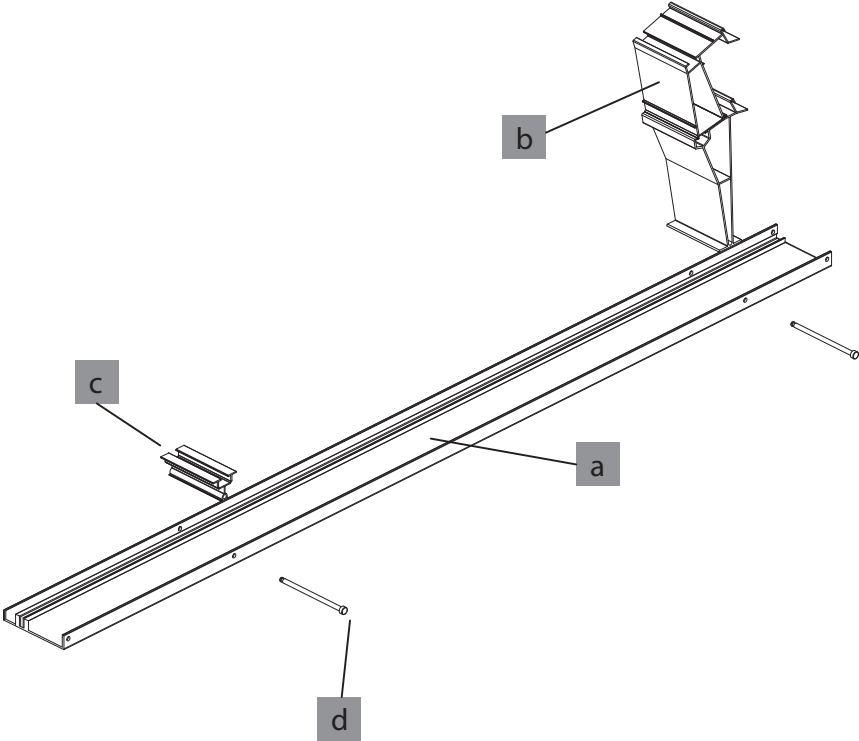


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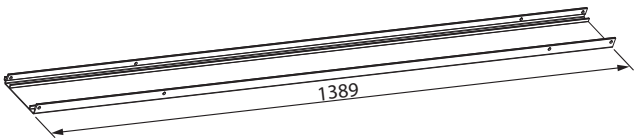


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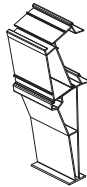




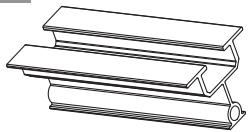
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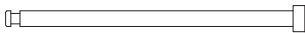
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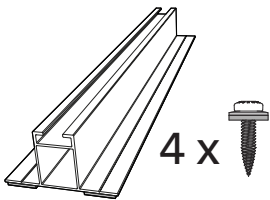
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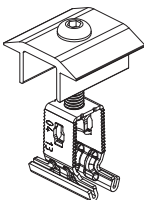
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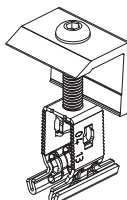
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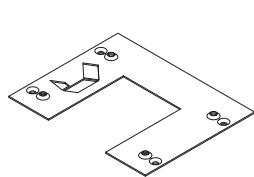
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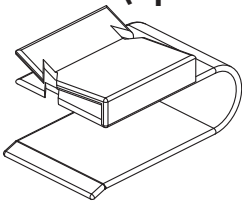
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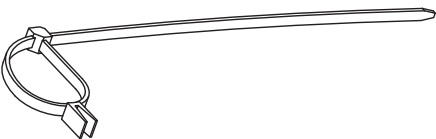
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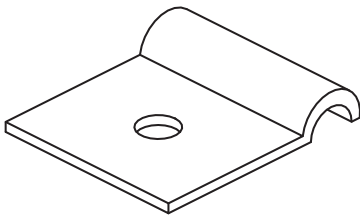
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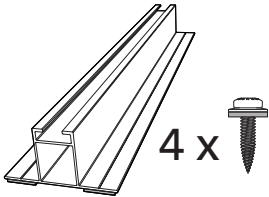
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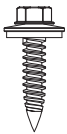
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A R420420/R420421



A



SW 8 6,0x25 E16
● ●8
FE (0,50-1,50 mm)
AL (0,50-2,00mm)

B



SFS-SDK2-S-377-6,0x35
● SFS
FE (0,75-1,20 mm)

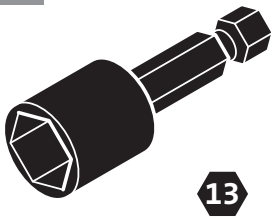
C



Faynot P1 6,3 x 38
● ●8
FE (0,75 mm)



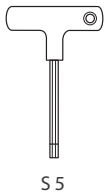
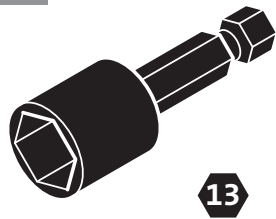
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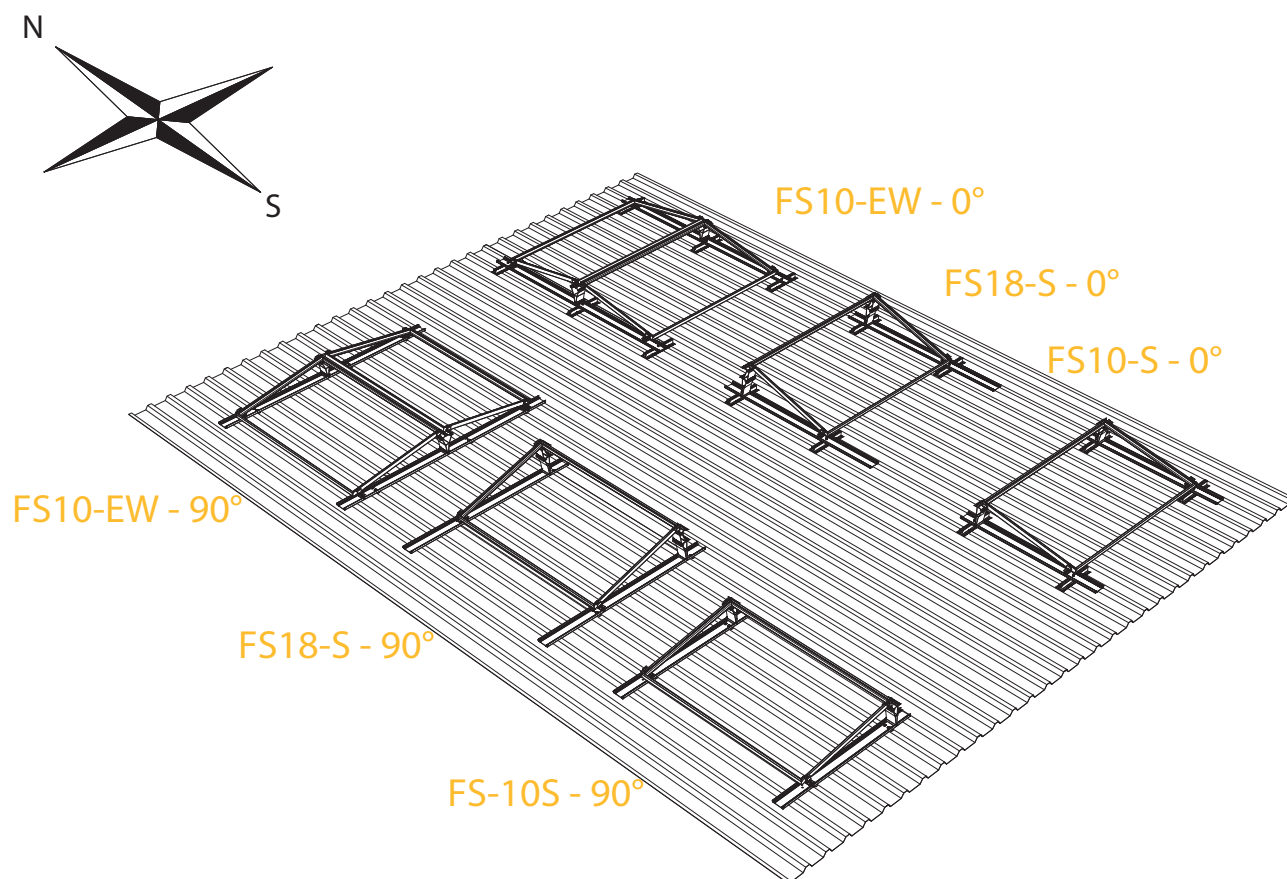
B 999900



C



Overview



FS10-S/FS18-S - 90°

Page: 11

FS10-S/FS18-S - 0°

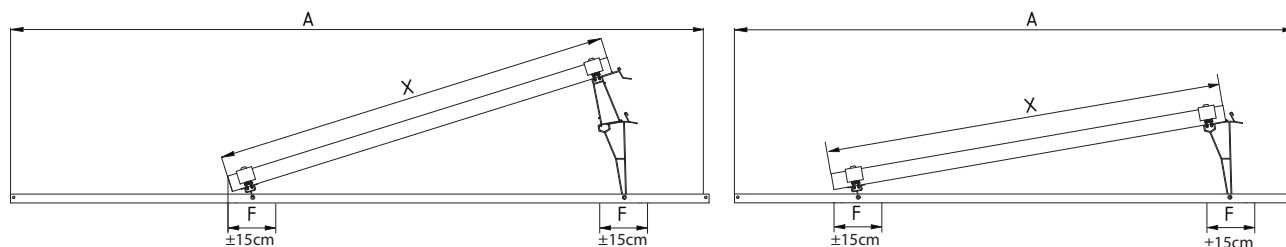
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FS10-EW - 90°

Page: 15

FS10-EW - 0°

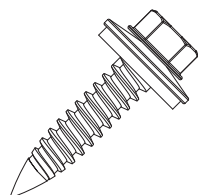
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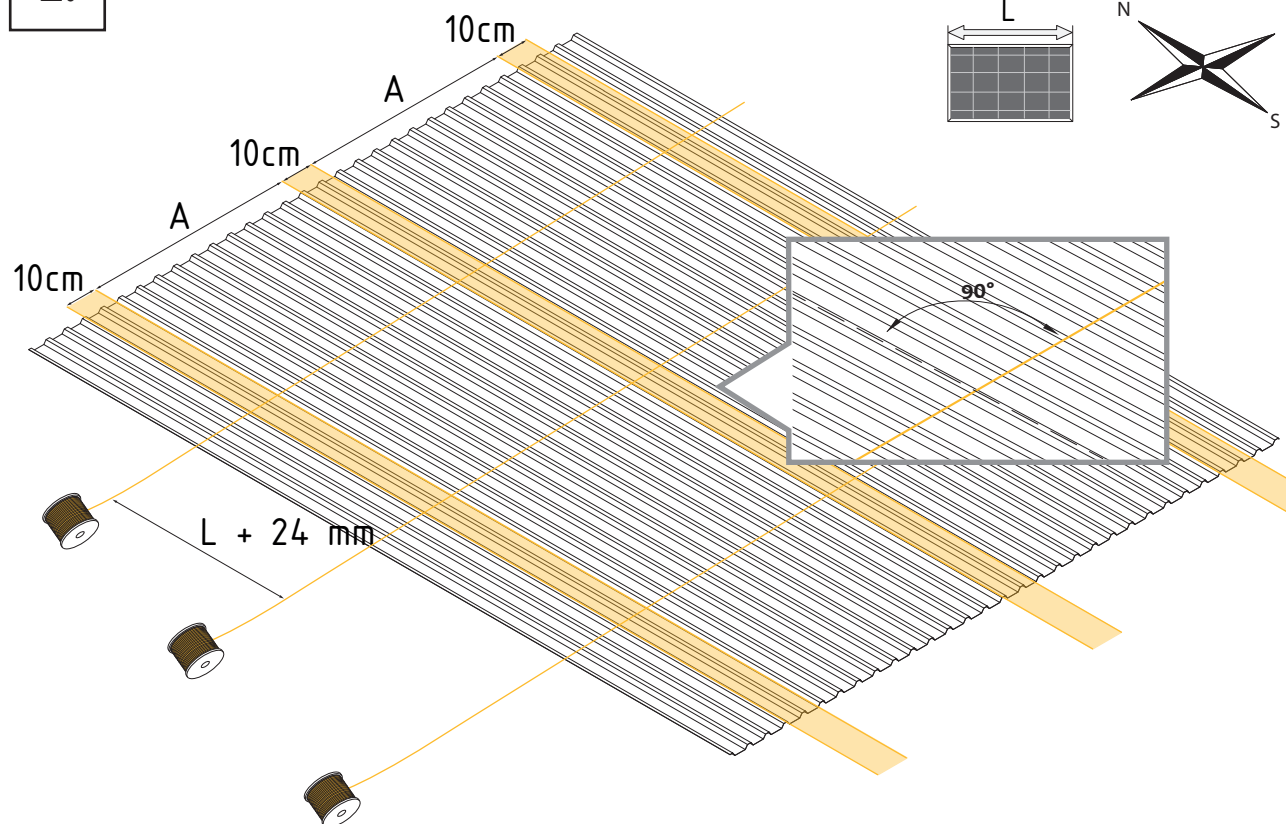
FS10-S

FS18-S

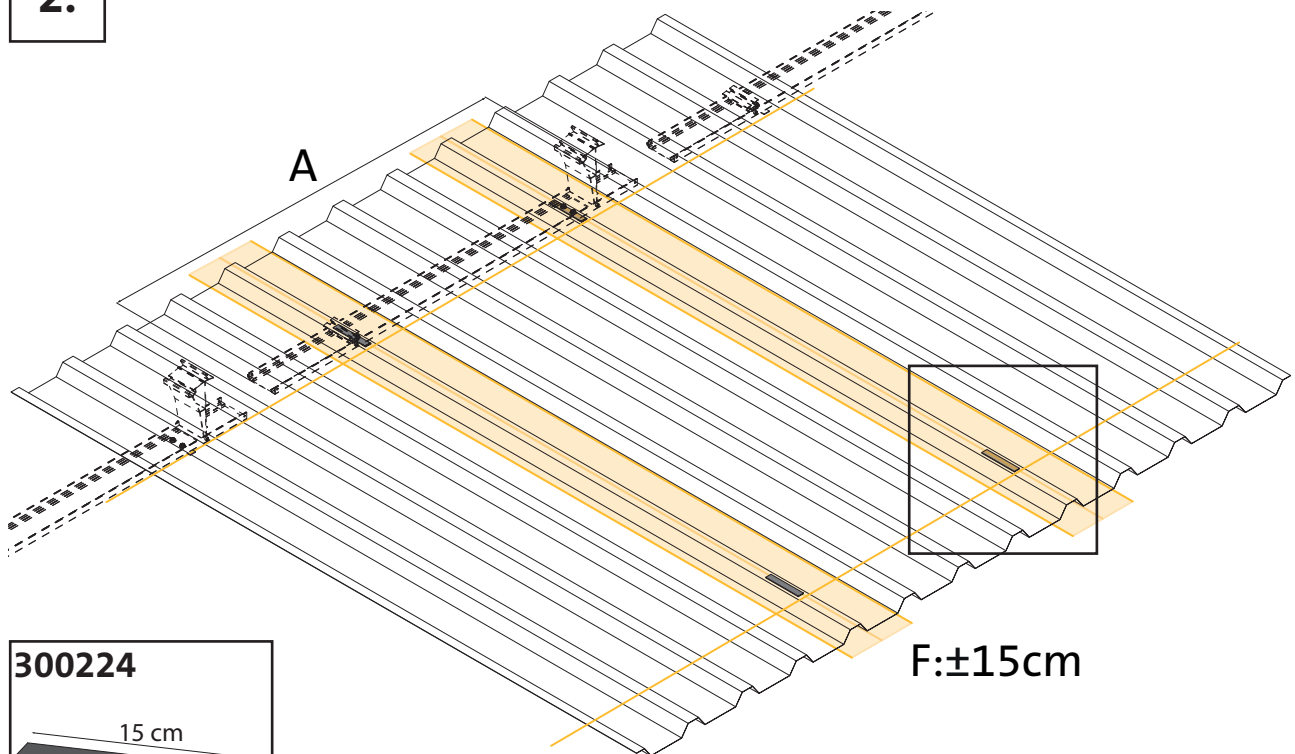
R500400 A=1389 mm	R500401 A= 1739 mm
R500407 A=1639 mm	R500403 A= 1989 mm
Module length X	Module length X
minimum = 950 mm	minimum = 950 mm
maximum = 1052 mm	maximum = 1011 mm
F:	zulässige Befestigung auf dem Dach im Bereich von F
F:	allowable fixation to the roof within area of F
F:	fixation autorisée sur le toit dans la zone de F
F:	fissaggio consentito al tetto entro l'area di F
F:	fi jación permitida al techo dentro del área de F



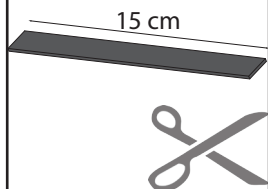
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2.

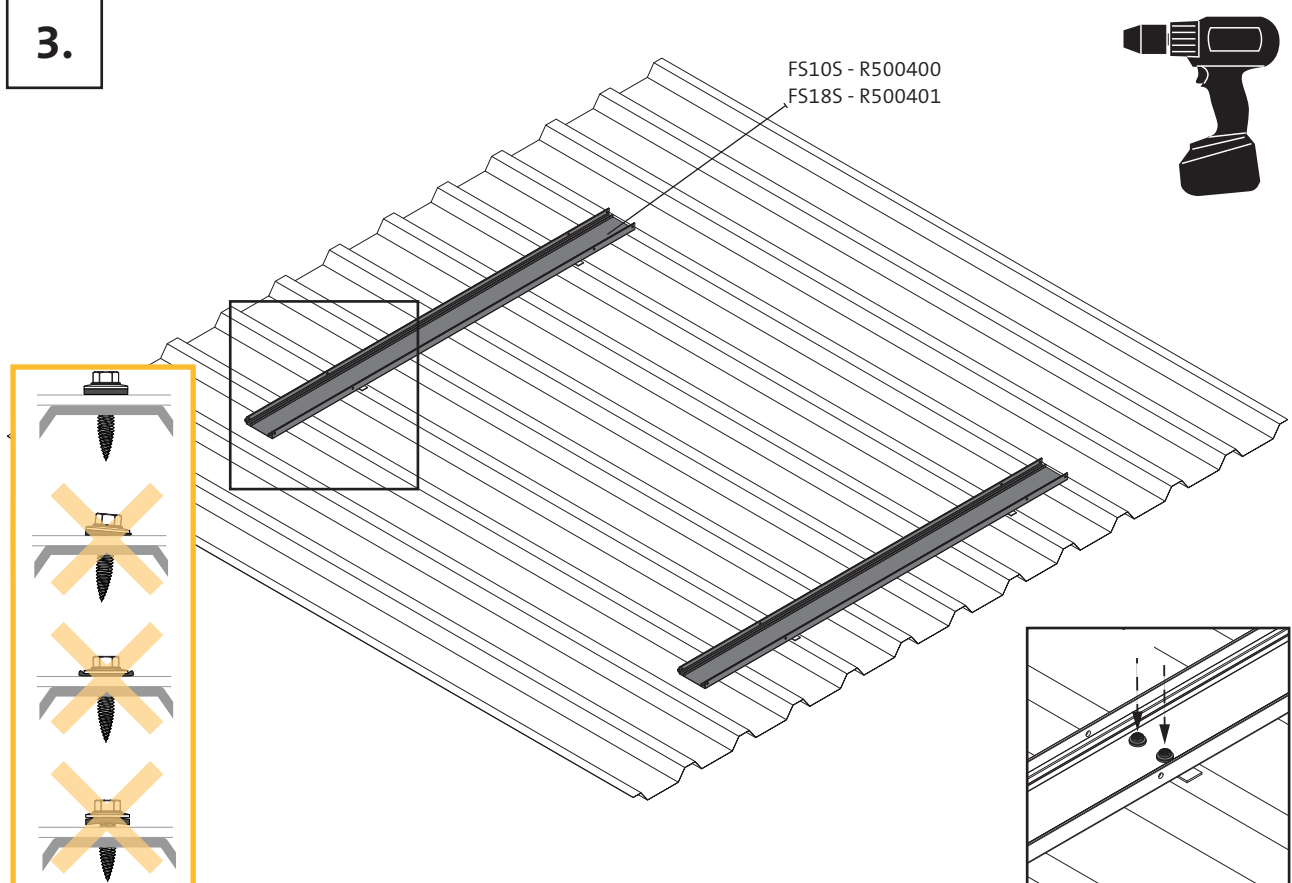


300224

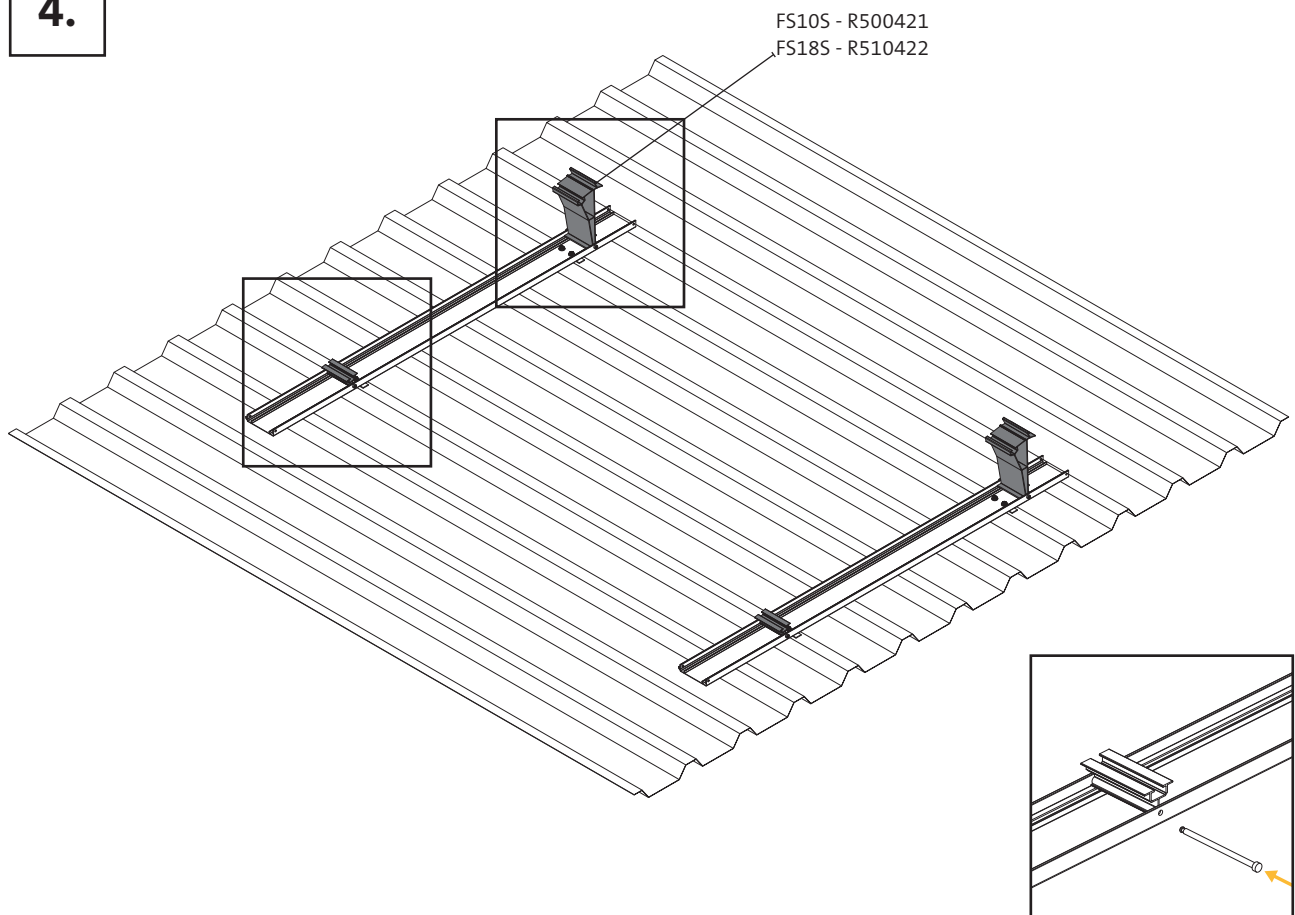


FS10S/FS18S - 90°

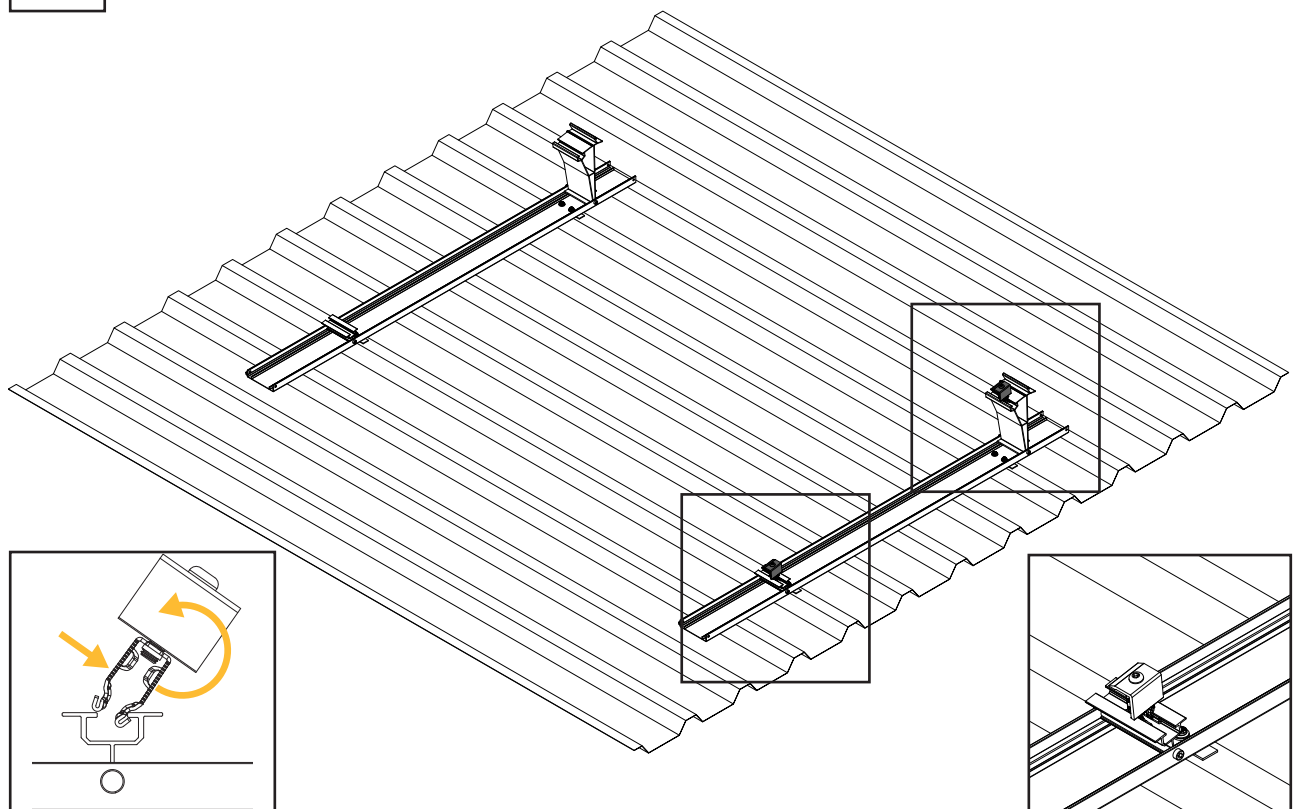
3.



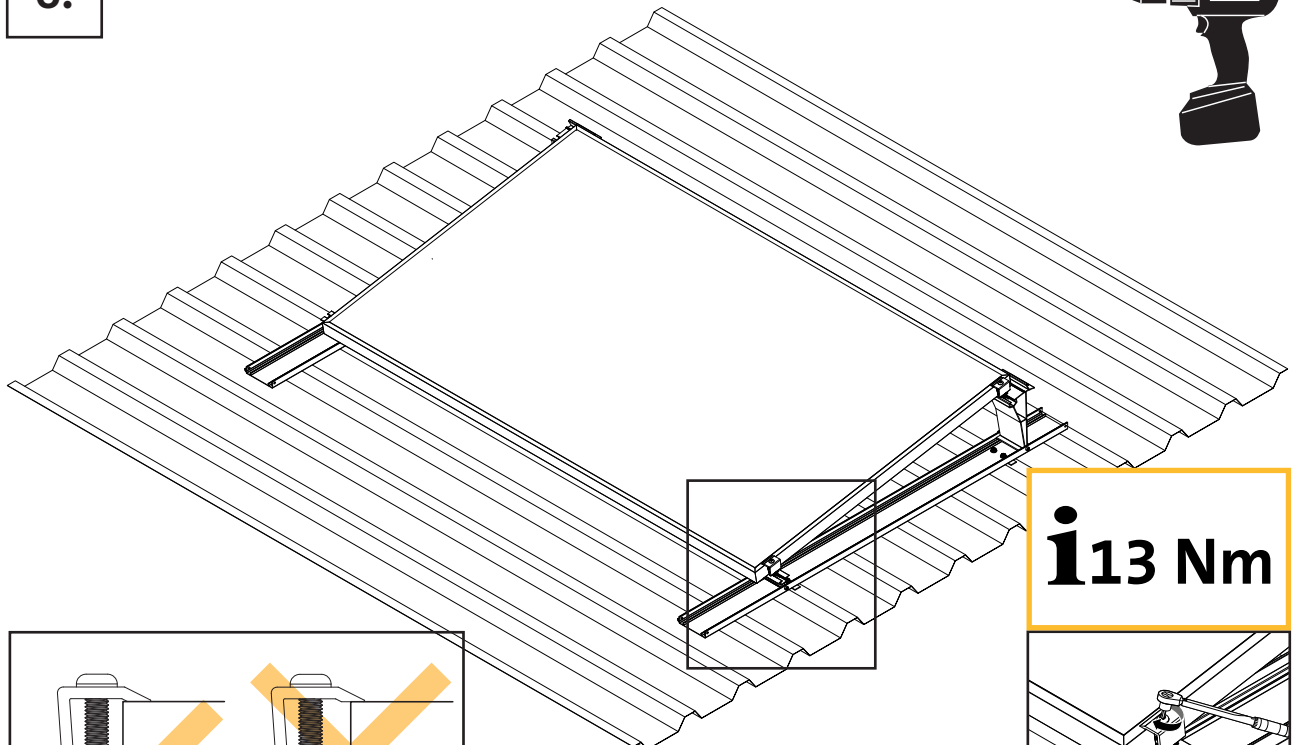
4.



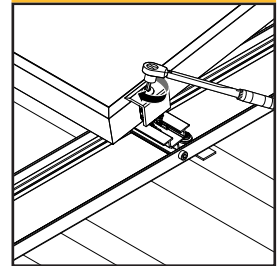
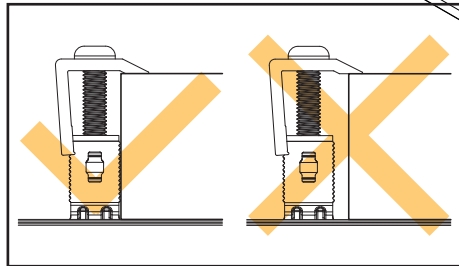
5.



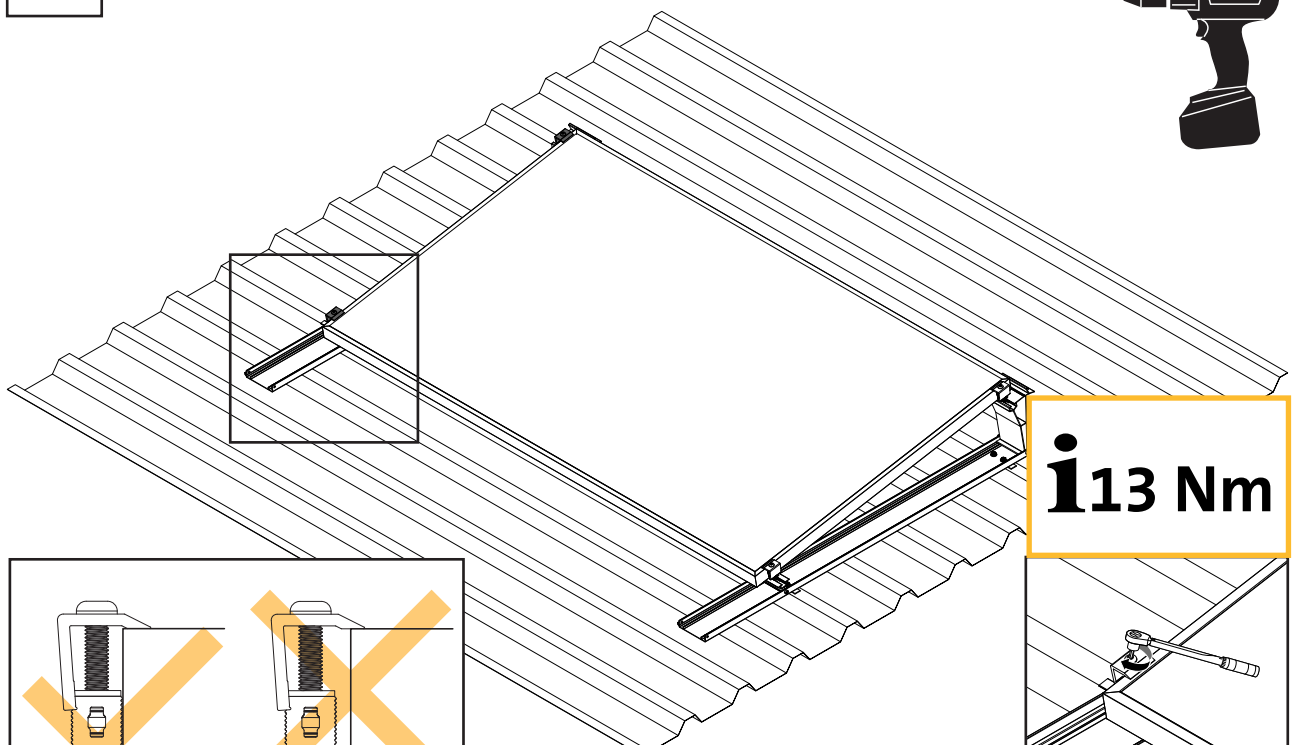
6.



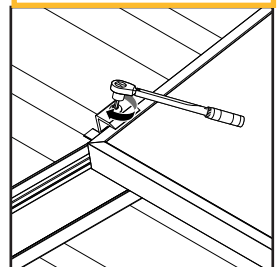
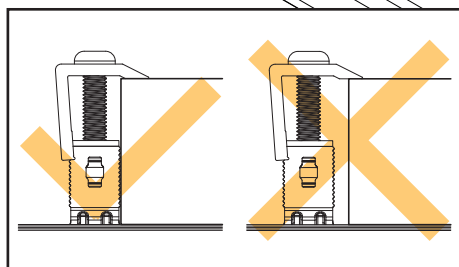
i13 Nm

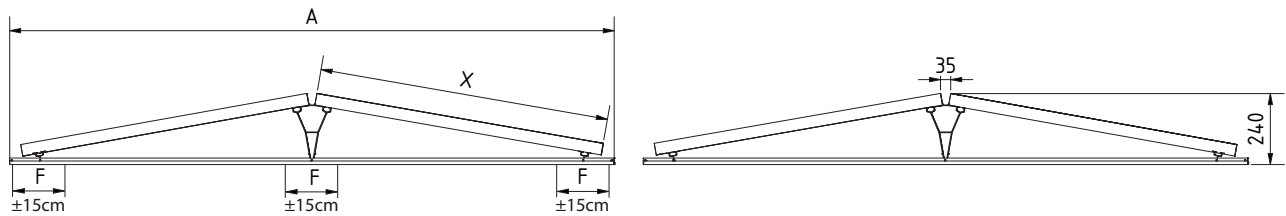


7.



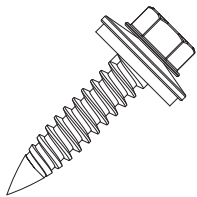
i13 Nm



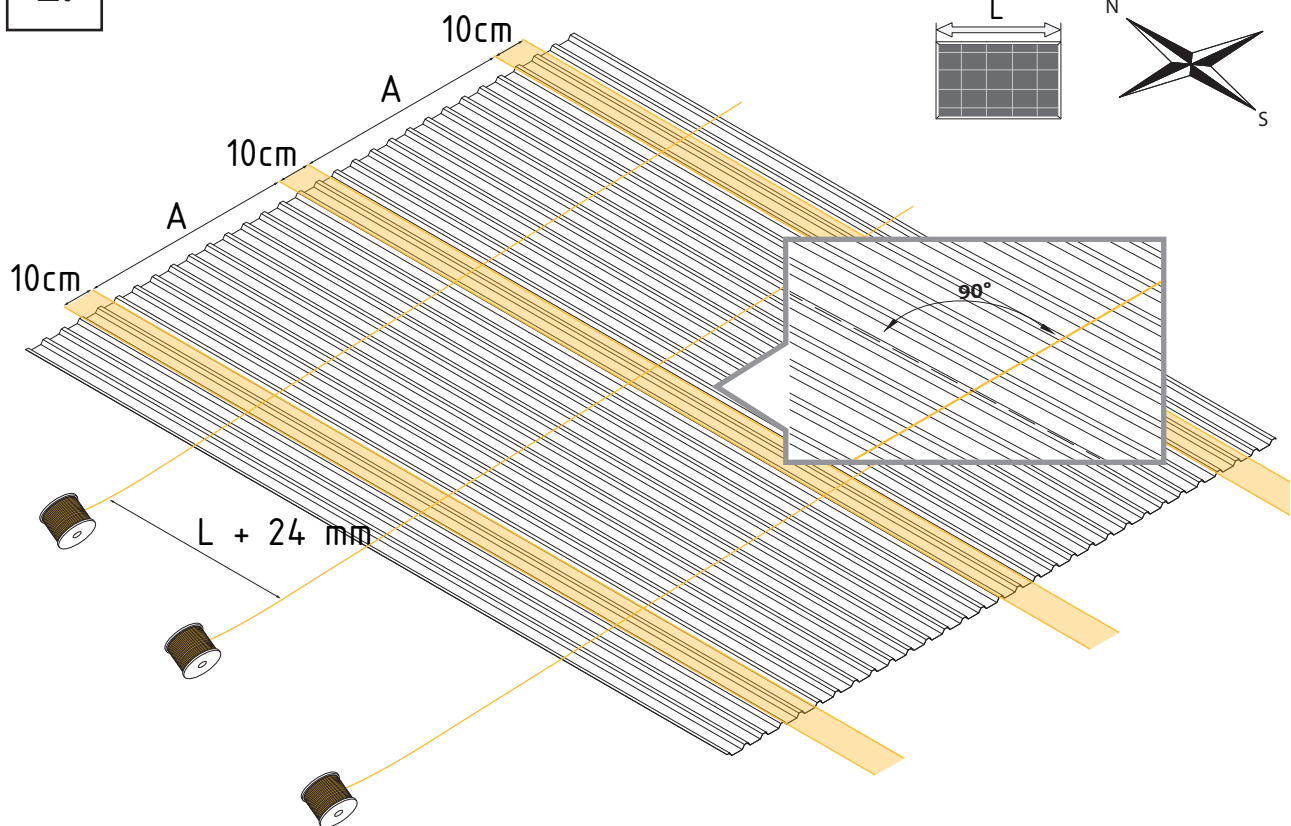


FS10-EW

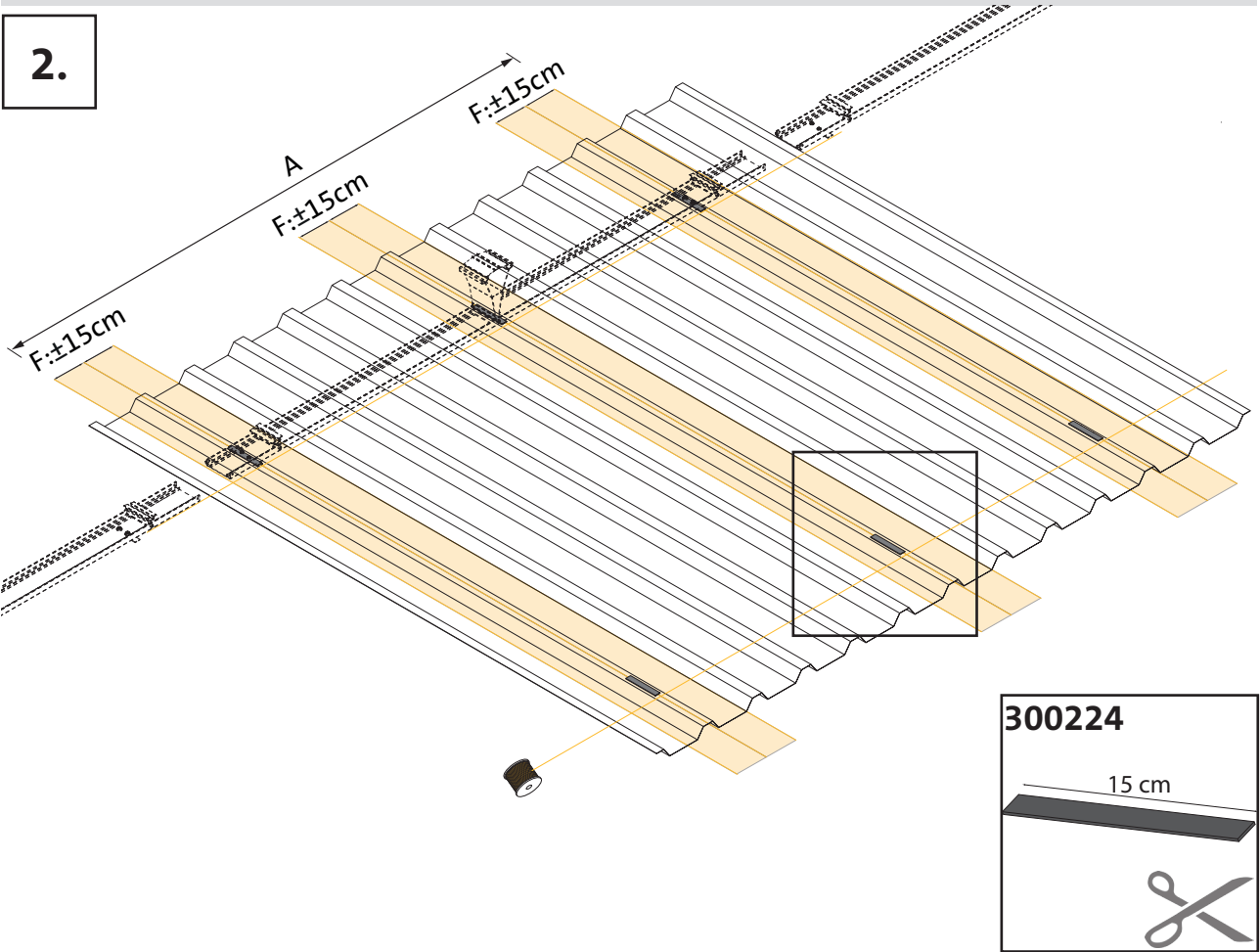
R500500 A=2260 mm	
R500407 A=2060 mm	
R500501 A=1989 mm	
Module length X	
minimum = 950 mm	
maximum = 1050 mm	
F:	zulässige Befestigung auf dem Dach im Bereich von F
F:	allowable fixation to the roof within area of F
F:	fixation autorisée sur le toit dans la zone de F
F:	fissaggio consentito al tetto entro l'area di F
F:	fi jación permitida al techo dentro del área de F



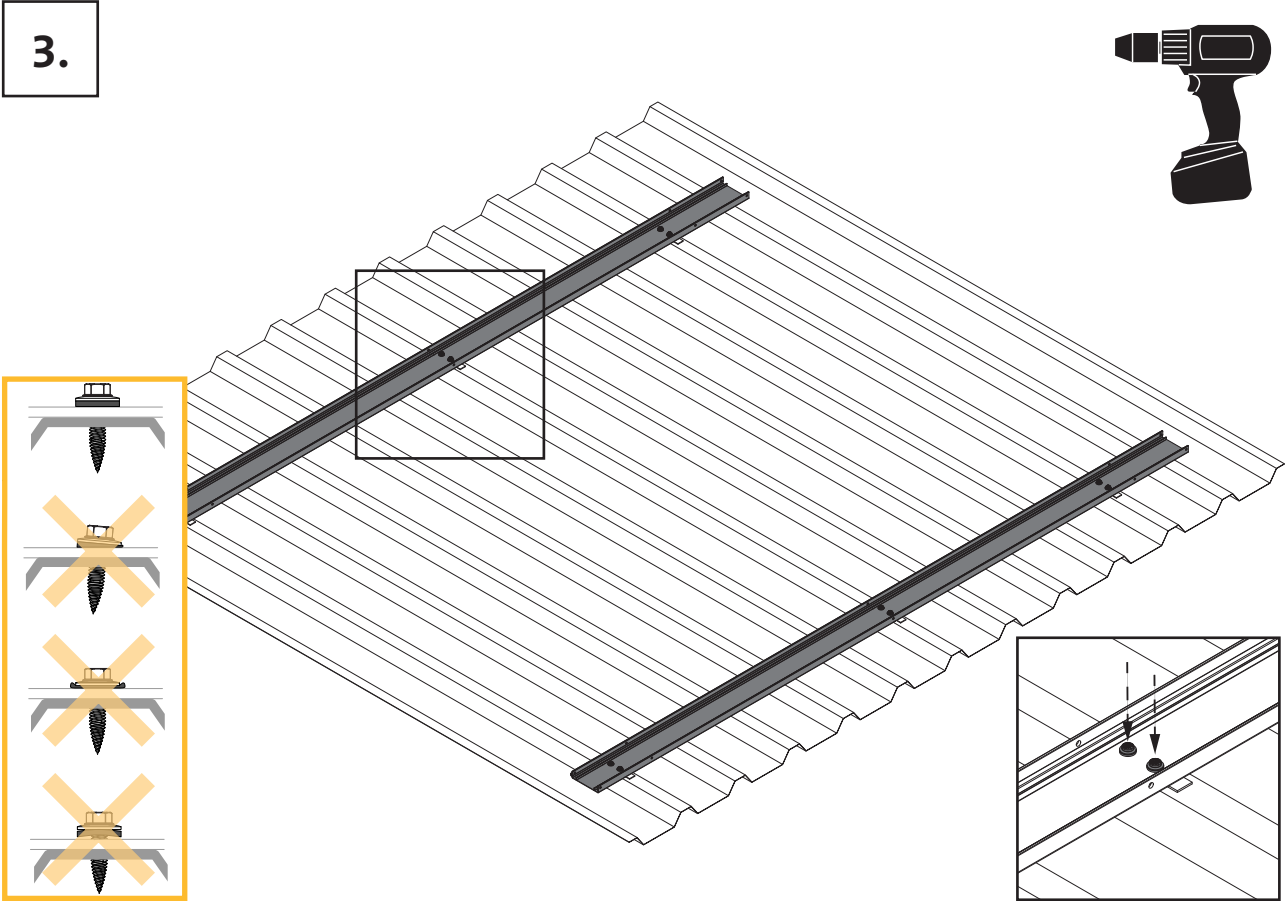
1.



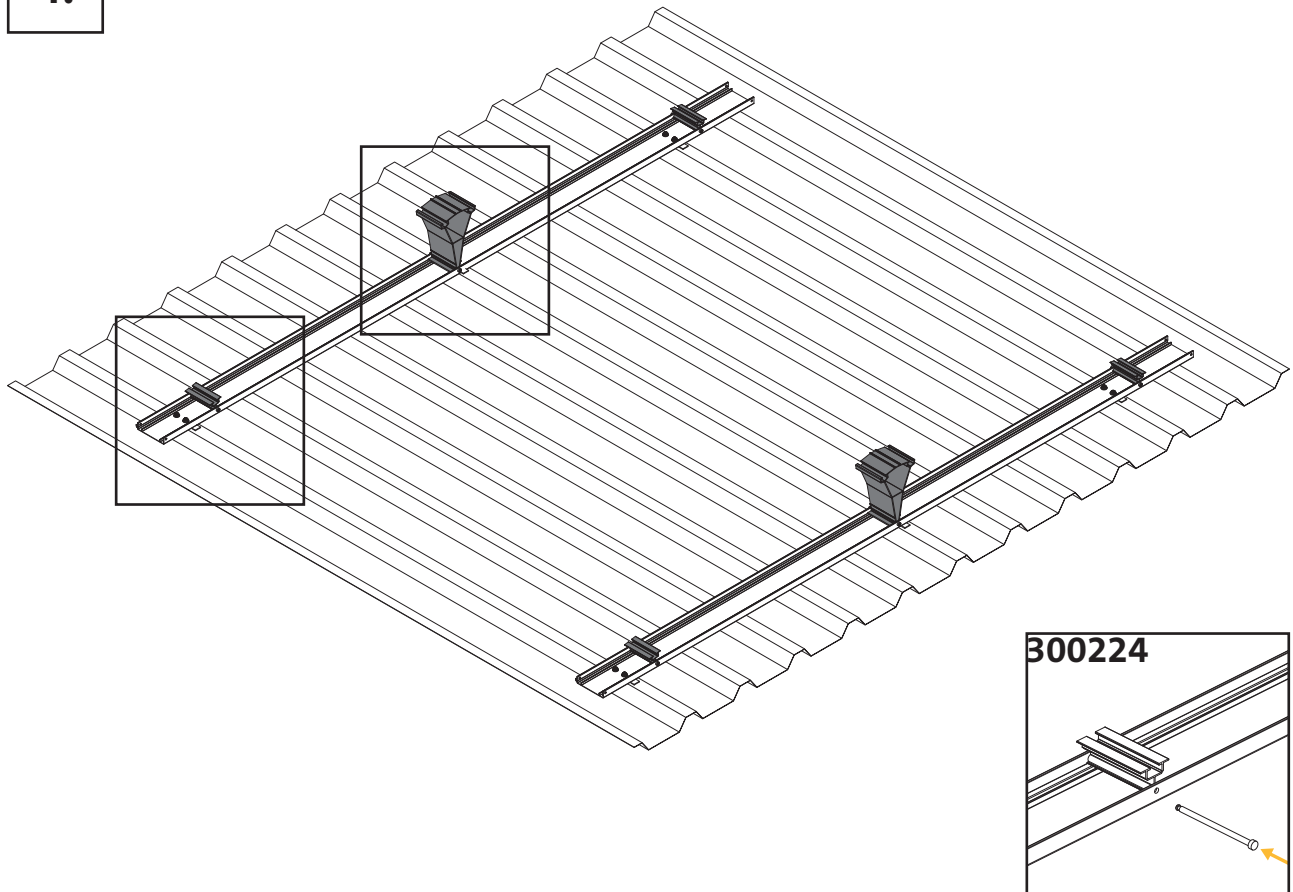
2.



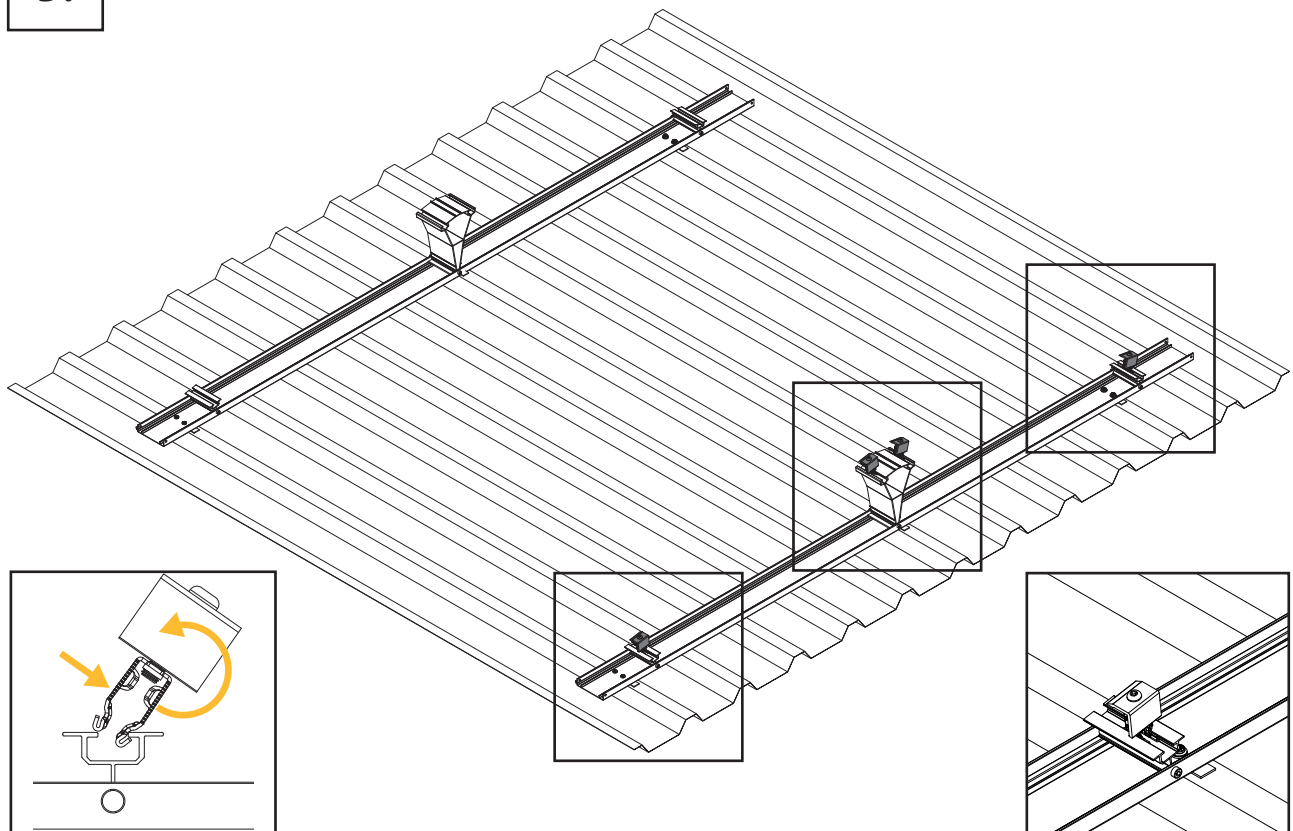
3.



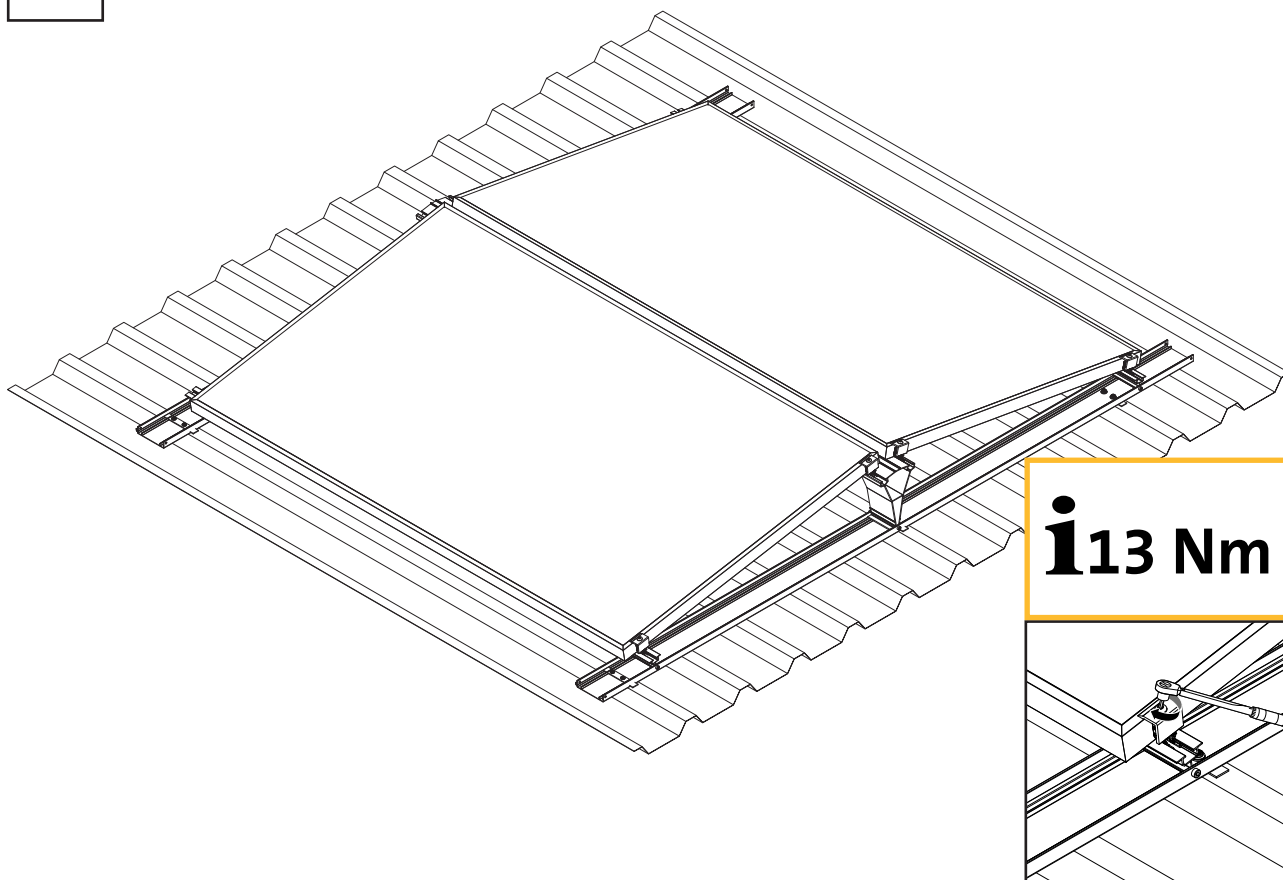
4.



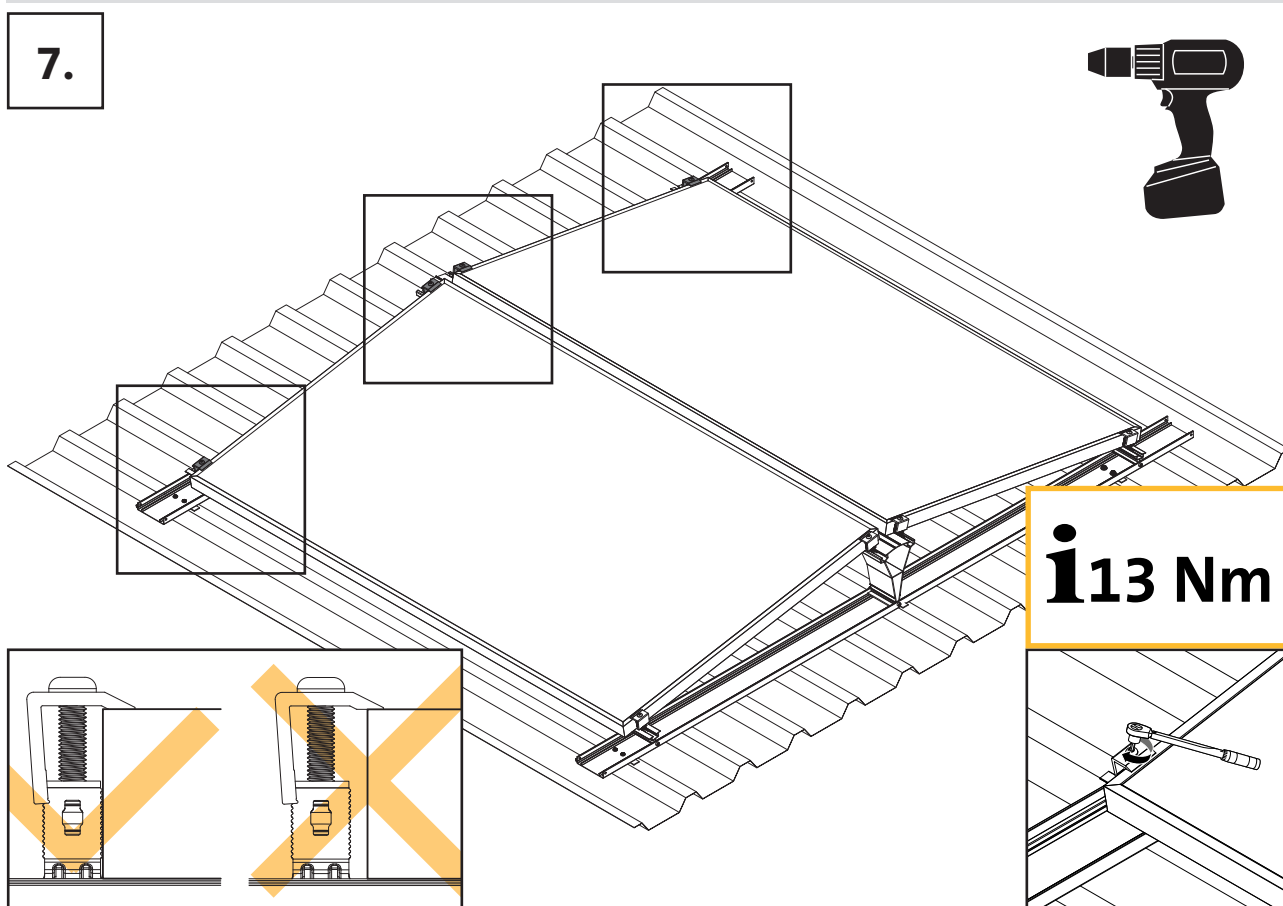
5.

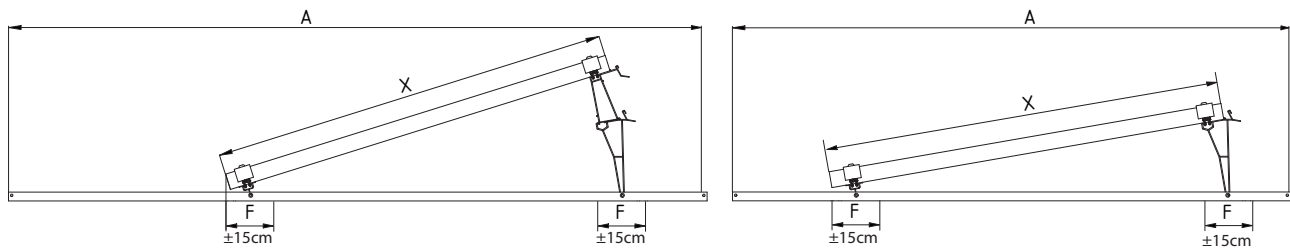


6.



7.

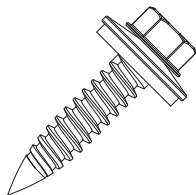




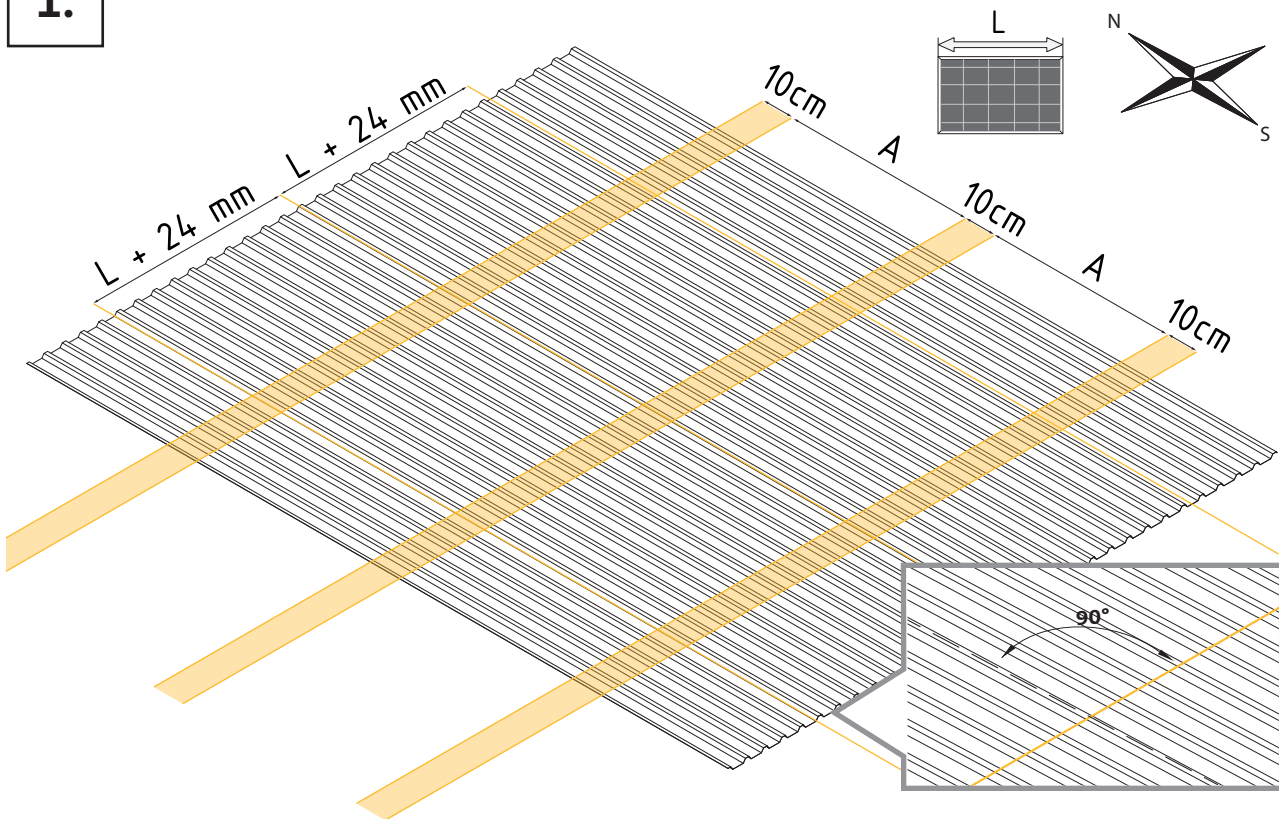
FS10S

FS18S

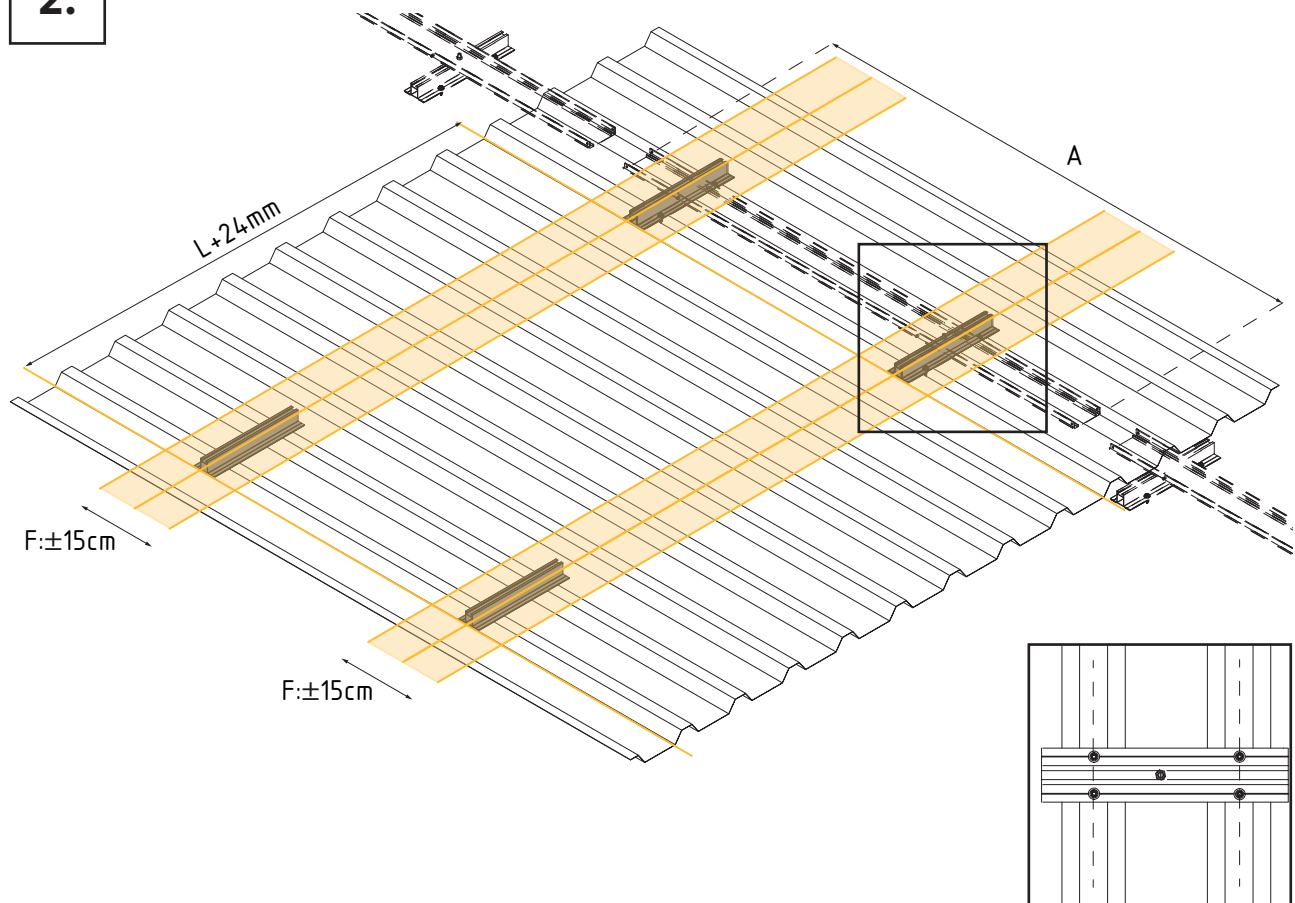
R500400 A=1389 mm	R500401 A= 1739 mm
R500407 A=1639 mm	R500403 A= 1989 mm
Module length X	Module length X
minimum = 950 mm	minimum = 950 mm
maximum = 1052 mm	maximum = 1011 mm
F:	zulässige Befestigung auf dem Dach im Bereich von F
F:	allowable fixation to the roof within area of F
F:	fixation autorisée sur le toit dans la zone de F
F:	fissaggio consentito al tetto entro l'area di F
F:	fi jación permitida al techo dentro del área de F



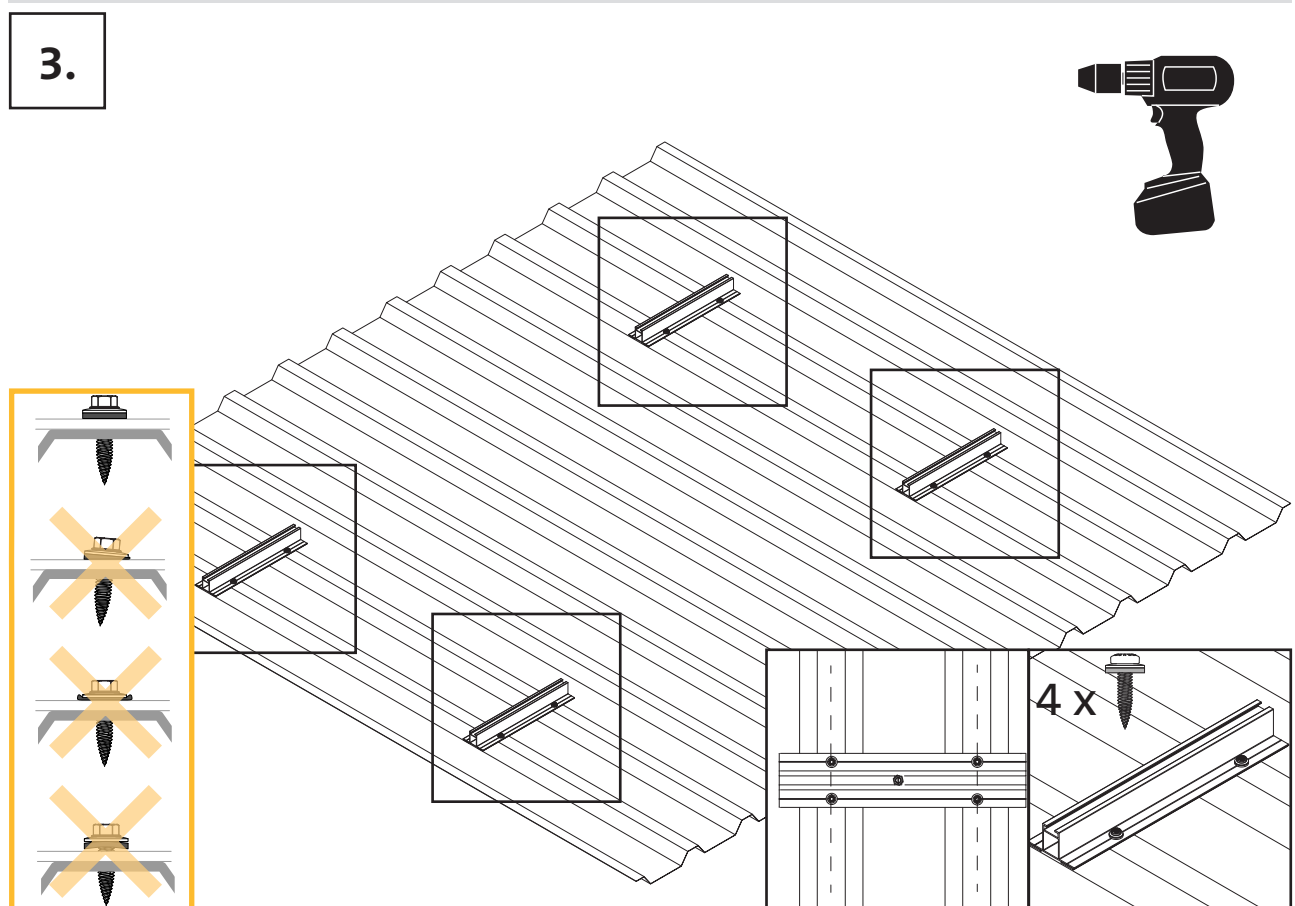
1.



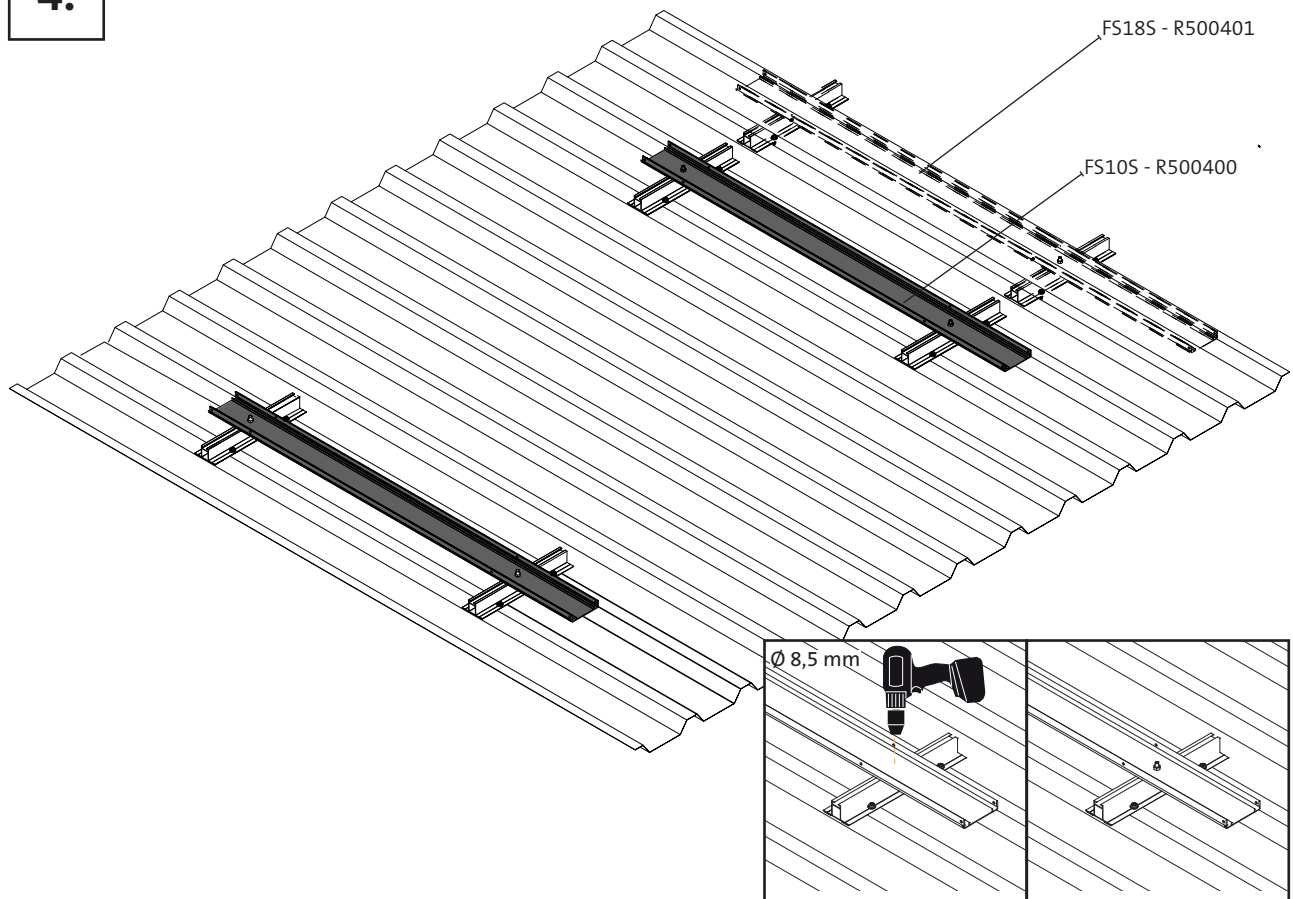
2.



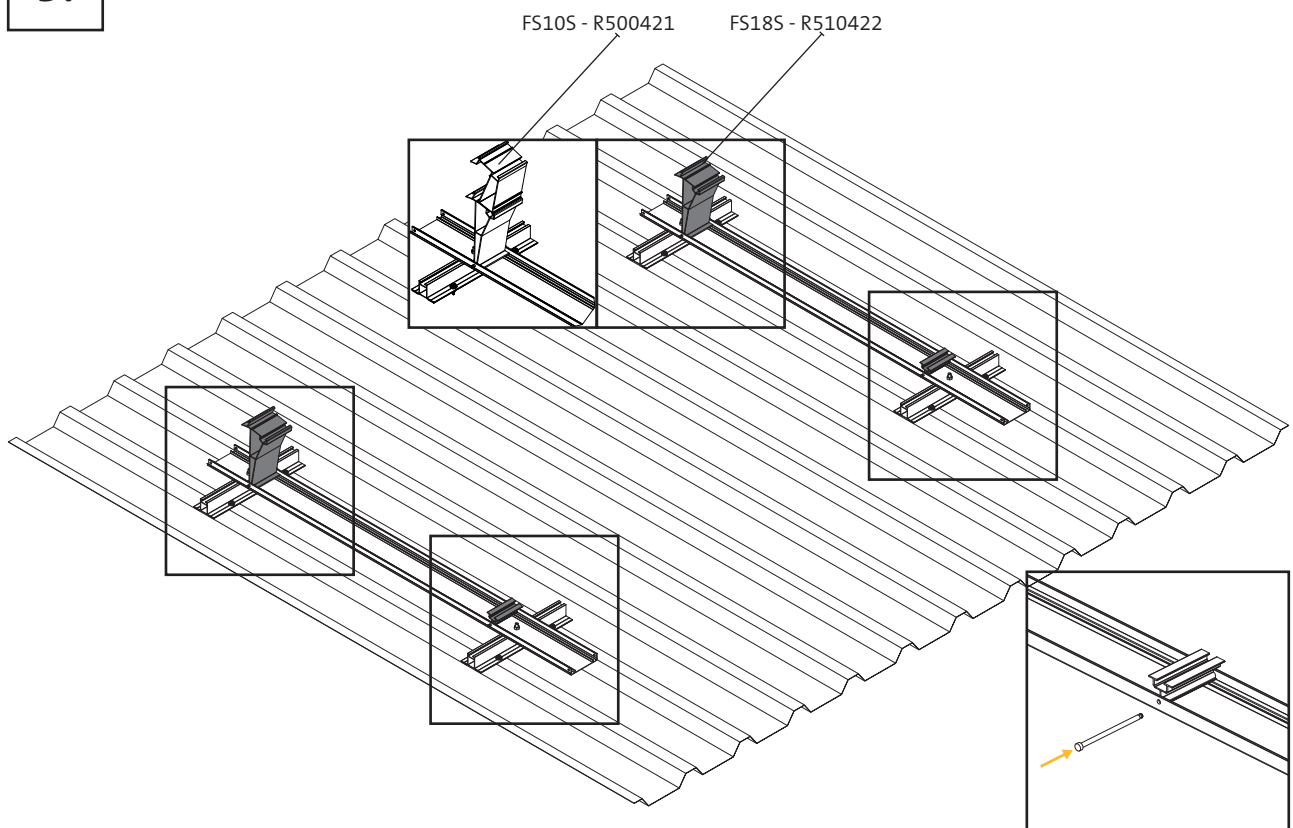
3.



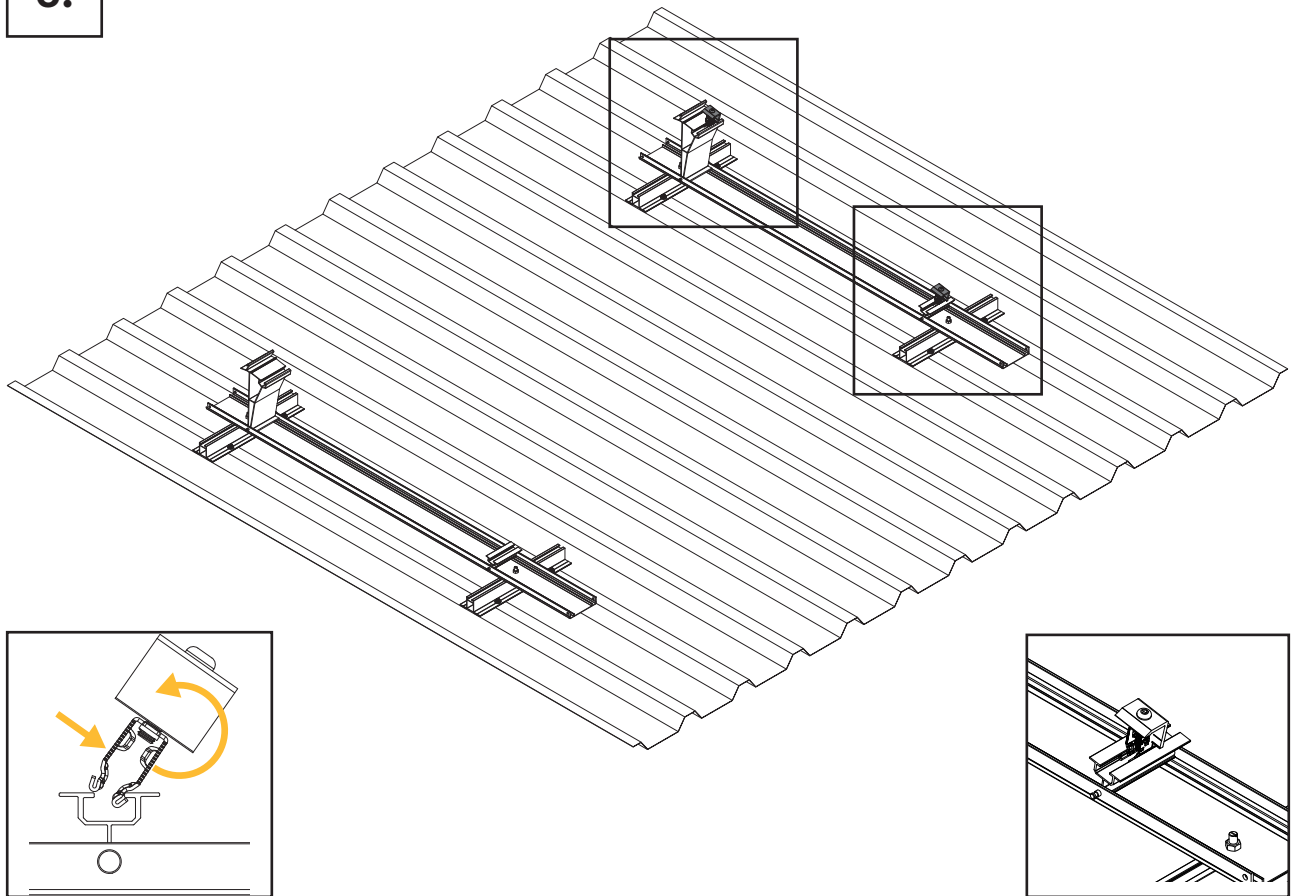
4.



5.

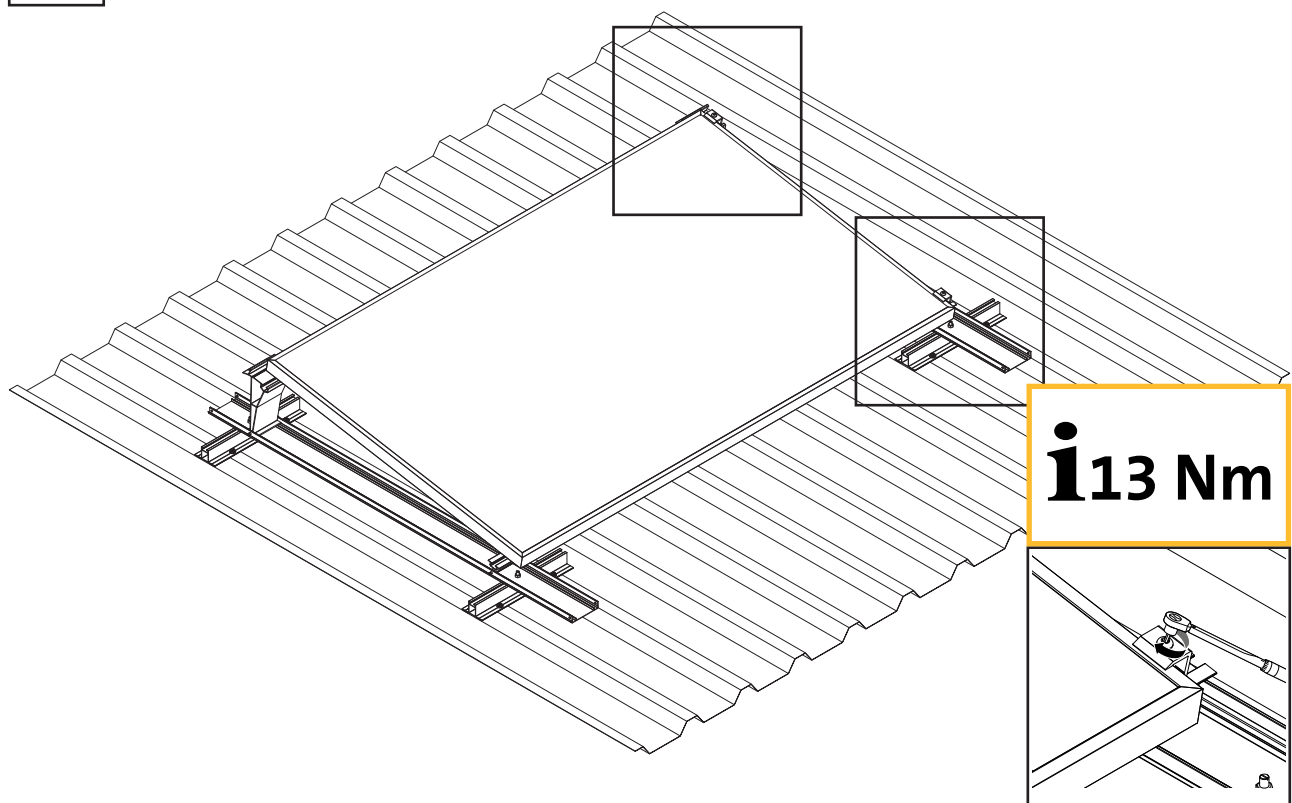


6.



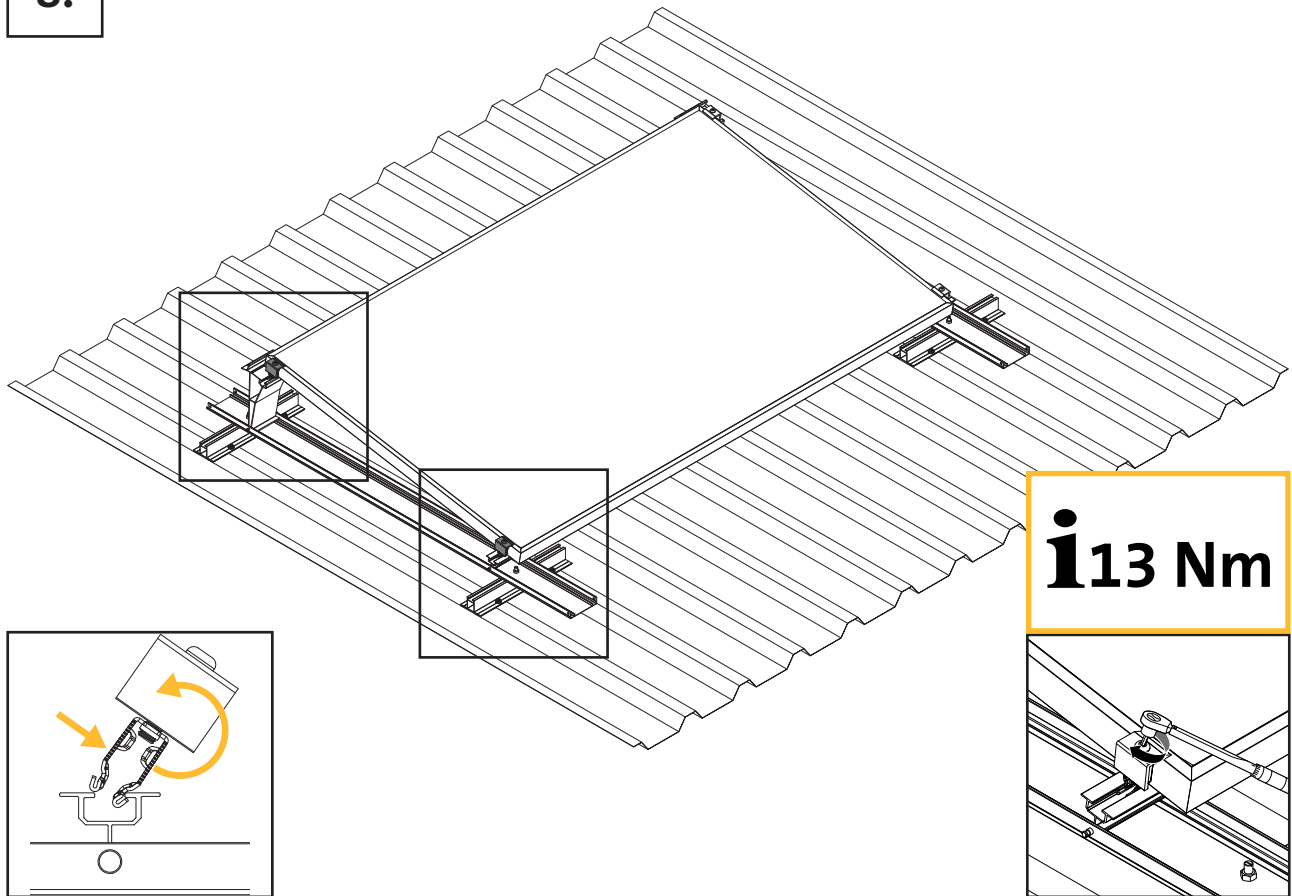
FS10S/FS18S - 0°

7.

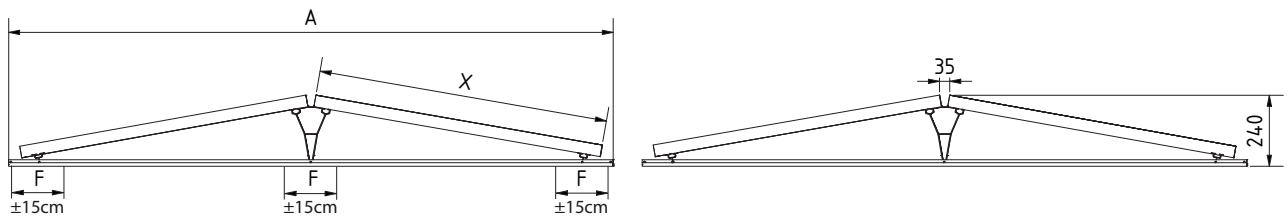


i13 Nm

8.



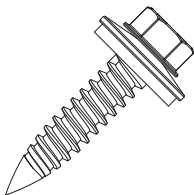
FS10EW - 0°



FS10S

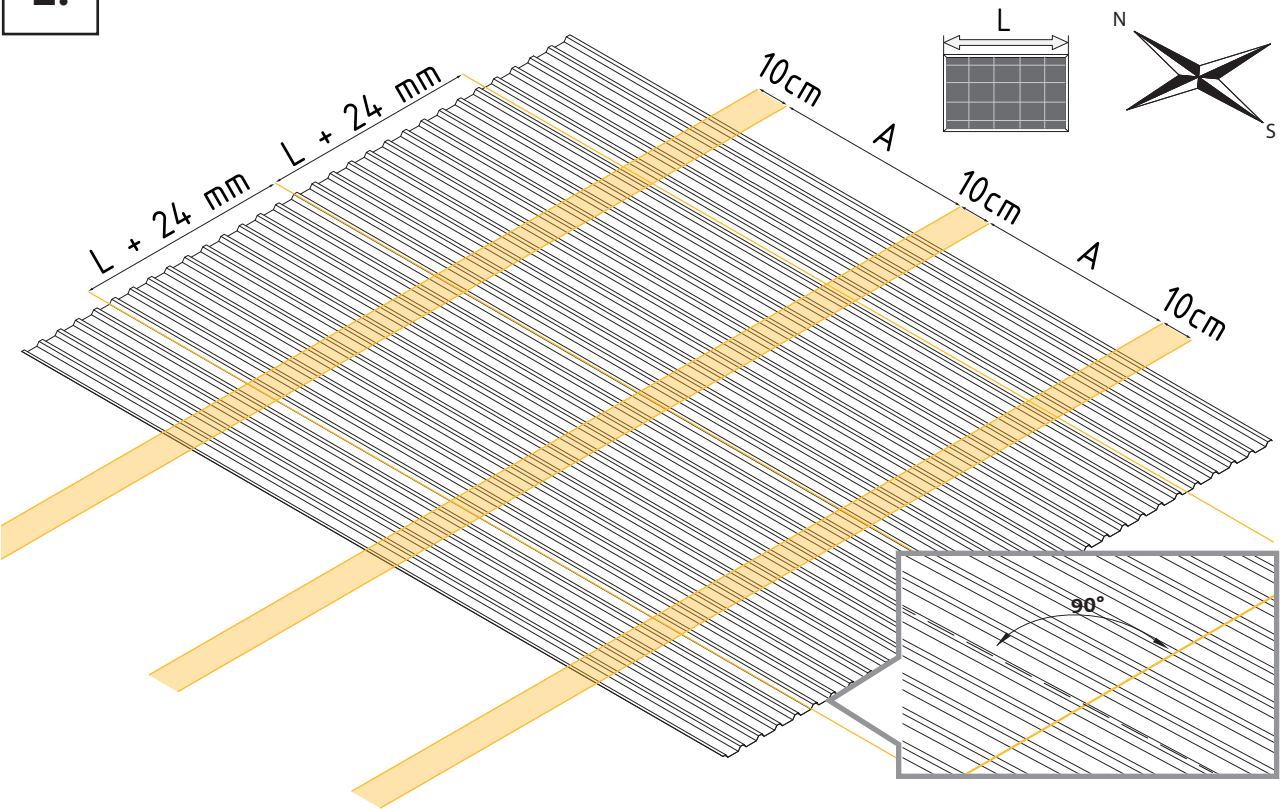
FS18S

R500400 A=1389 mm	R500401 A= 1739 mm
R500407 A=1639 mm	R500403 A= 1989 mm
Module length X	Module length X
minimum = 950 mm	minimum = 950 mm
maximum = 1052 mm	maximum = 1011 mm
F:	zulässige Befestigung auf dem Dach im Bereich von F
F:	allowable f ixation to the roof within area of F
F:	fixation autorisée sur le toit dans la zone de F
F:	fissaggio consentito al tetto entro l'area di F
F:	fi jación permitida al techo dentro del área de F

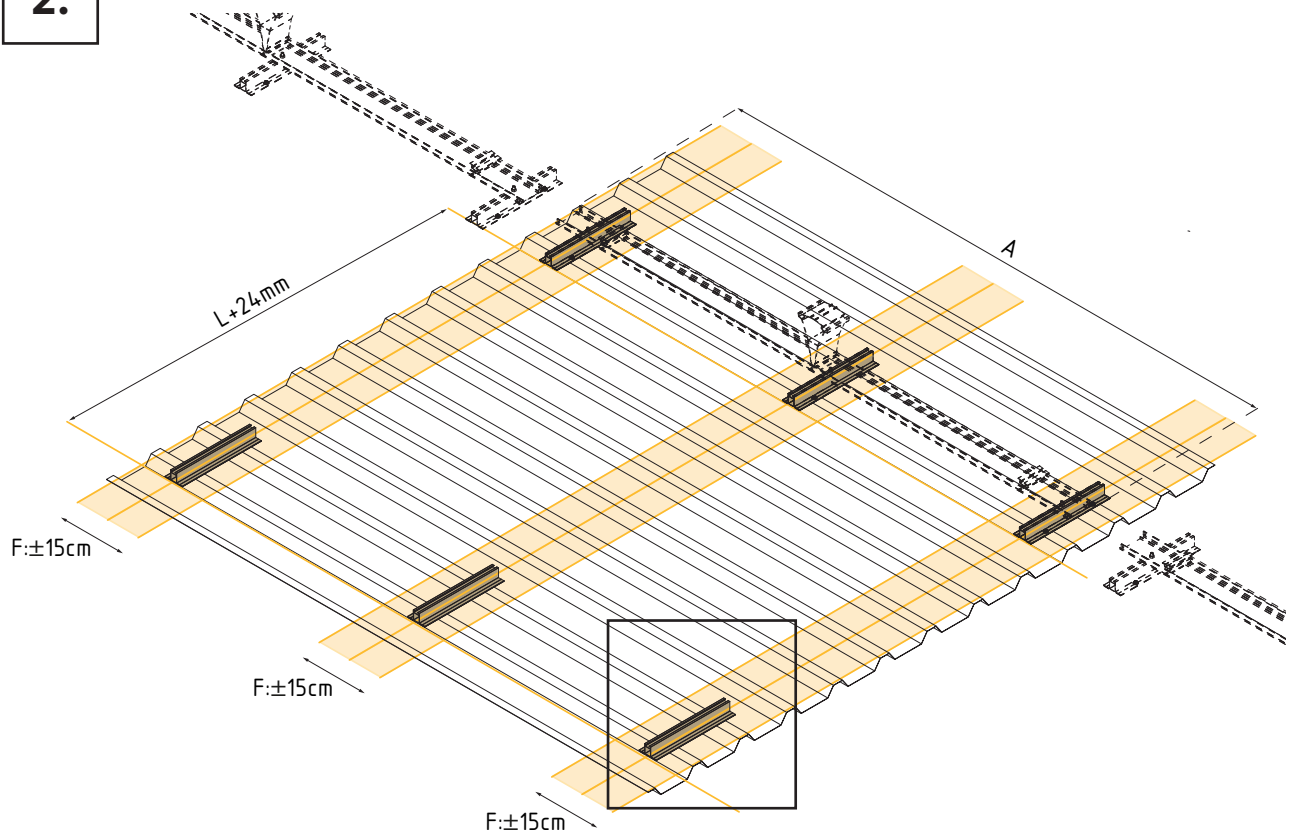


FS10EW - 0°

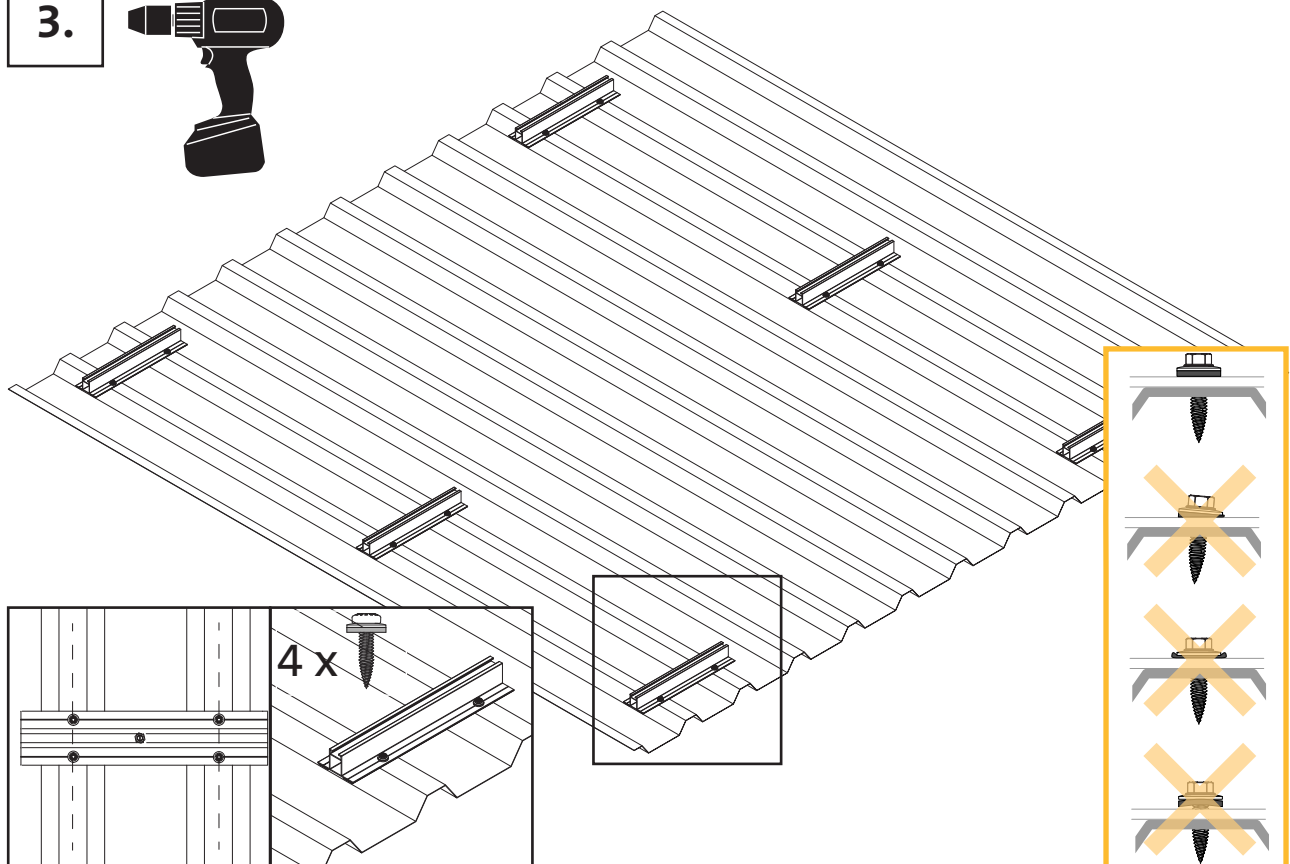
1.



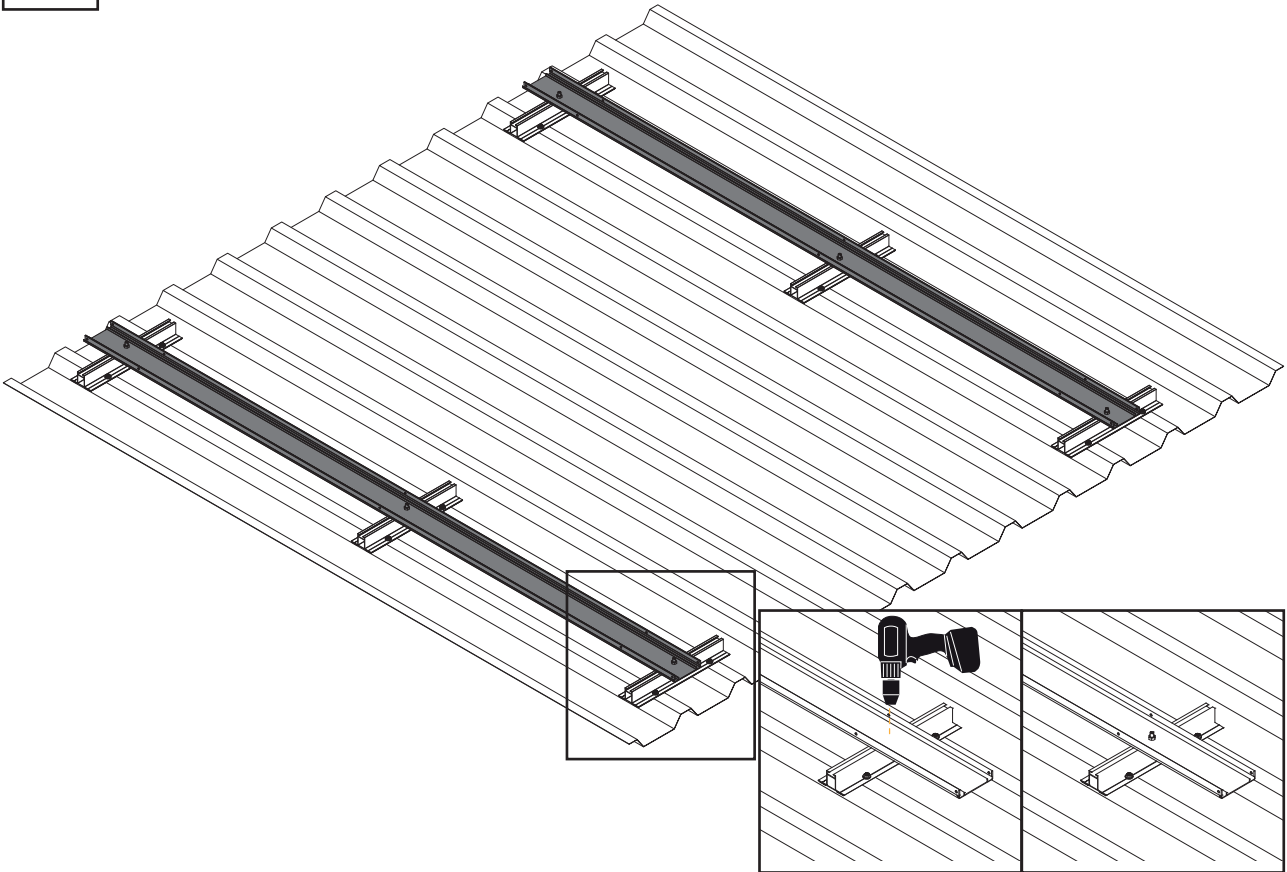
2.



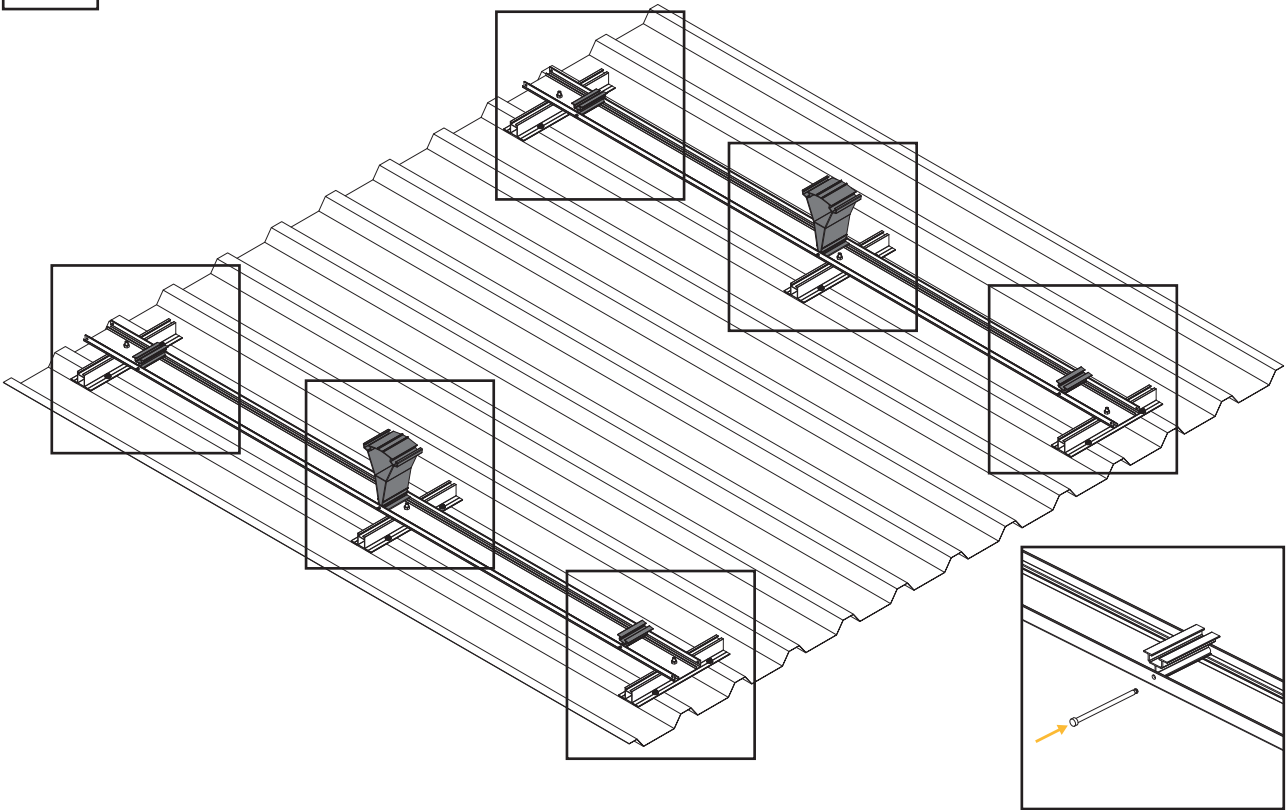
3.



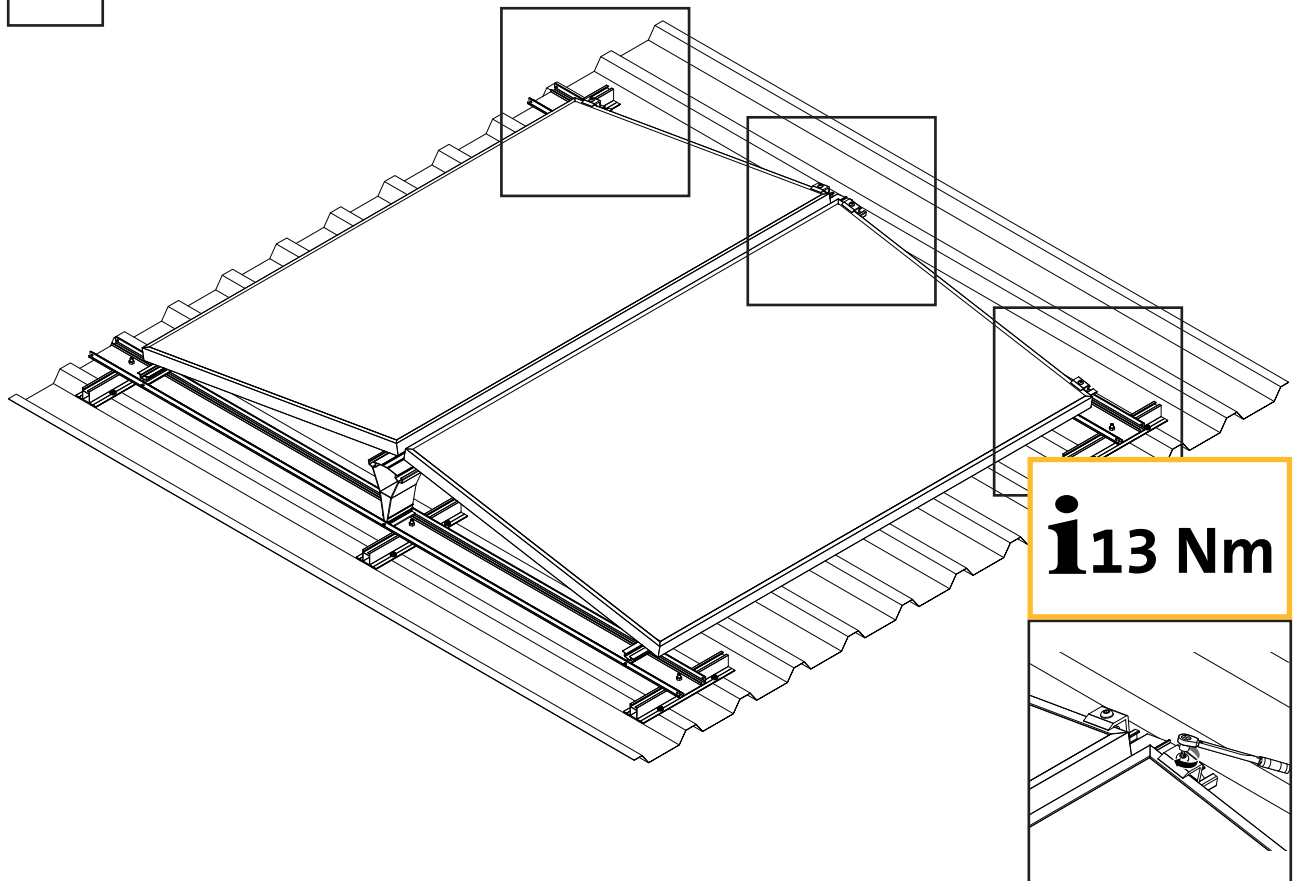
4.



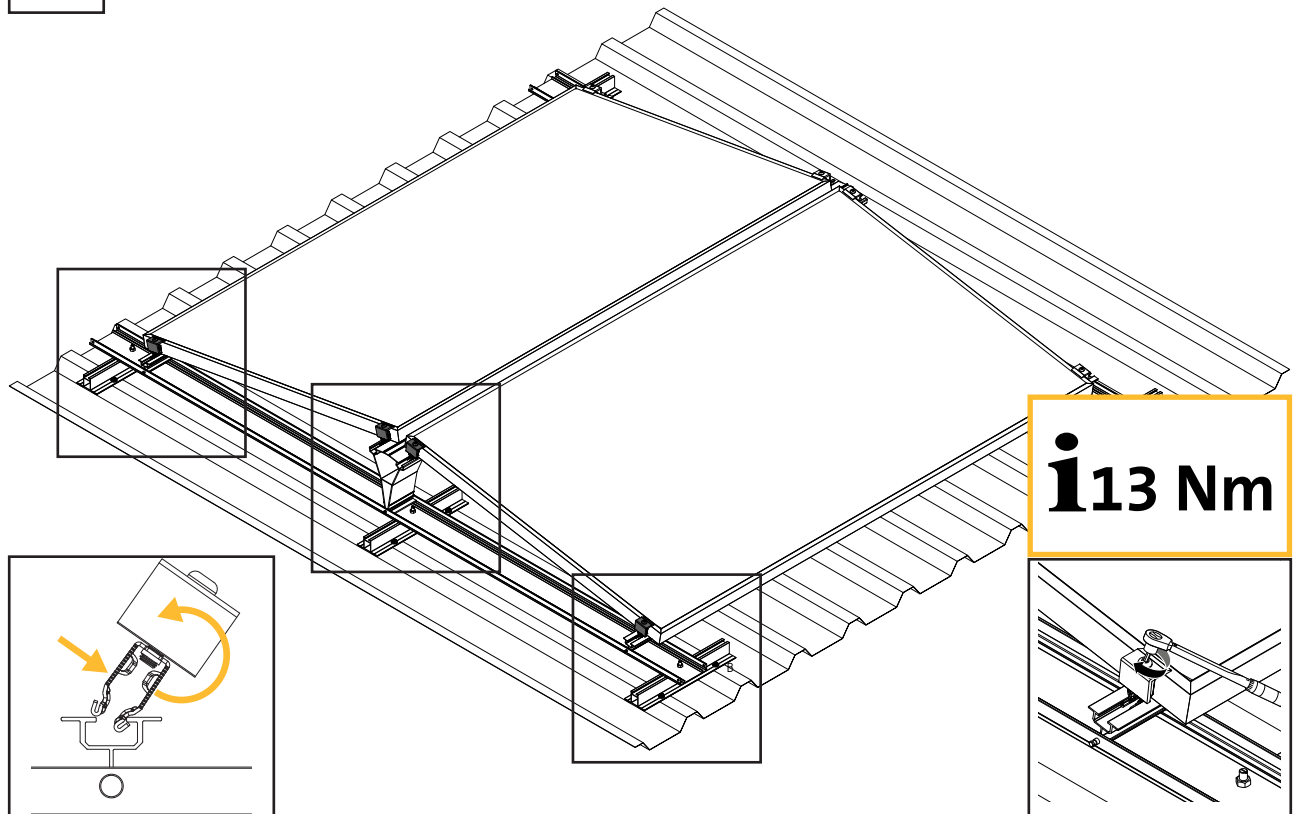
5.



6.



7.



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IT | Figure e testi corrispondono allo stato più attuale della tecnica al momento dell'ordine di stampa. Con riserva di modifiche.

ES | Las imágenes y los textos se corresponden al estado actual de la técnica en el momento de la impresión, reservado el derecho a las modificaciones.

NL | Afbeeldingen en teksten voldoen aan de actuele stand van de techniek op het moment van ter perse gaan. Wijzigingen voorbehouden.

DK | Afbildninger og tekster overholder den tekniske stand ved trykning, der tages forbehold for ændringer.

SE | Bilder och texter motsvarar den nuvarande tekniska tillstånd vid tidpunkten för tryckning, med förbehåll för ändringar.

CZ | Vyobrazení a texty odpovídají aktuálnímu technickému stavu při odevzdání do tisku. Změny vyhrazeny.

PL | Ilustracje i teksty odpowiadają stanowi techniki aktualnemu w chwili oddania instrukcji do druku. Zastrzega się prawo do zmian.

LT | Spausdinami paveikslėliai ir tekstas atitinka naujausią technikos lygį. Pasilieka teisė į pakeitimus.

HU | Az ábrák és a szövegek a nyomtatás időpontjában rendelkezésünkre álló legfrissebb műszaki ismereteknek felelnek meg; a módosítások jogát fenntartjuk.

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