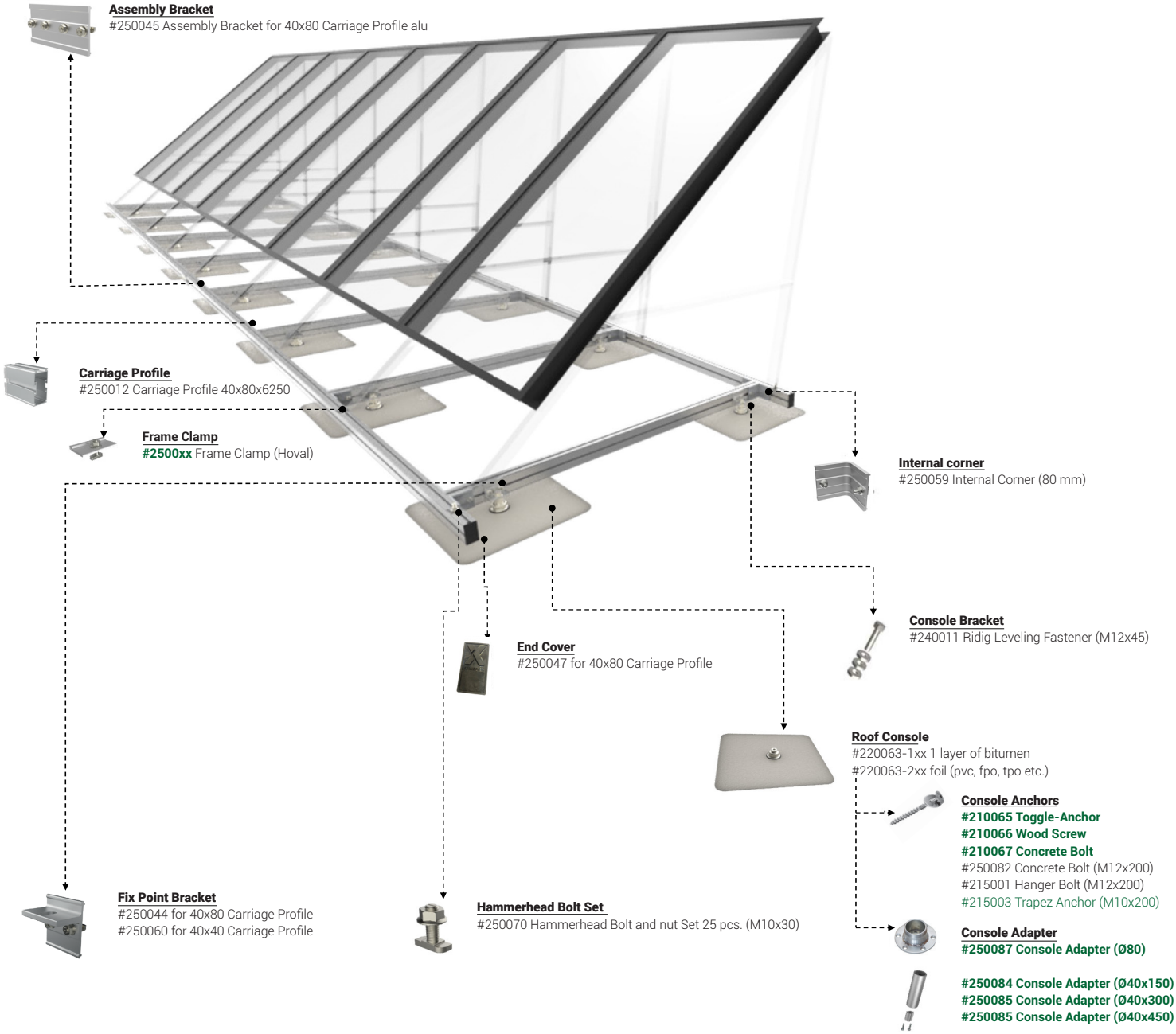
FIXNORDIC.DK

Installation Guide
Thermal Console System

FIXNORDIC
proof enough.

System Overview



Assembly Bracket
#250045 Assembly Bracket for 40x80 Carriage Profile alu

Carriage Profile
#250012 Carriage Profile 40x80x6250

Frame Clamp
#2500xx Frame Clamp (Hoval)

Internal corner
#250059 Internal Corner (80 mm)

Console Bracket
#240011 Ridig Leveling Fastener (M12x45)

End Cover
#250047 for 40x80 Carriage Profile

Roof Console
#220063-1xx 1 layer of bitumen
#220063-2xx foil (pvc, fpo, tpo etc.)

Console Anchors
#210065 Toggle-Anchor
#210066 Wood Screw
#210067 Concrete Bolt
#250082 Concrete Bolt (M12x200)
#215001 Hanger Bolt (M12x200)
#215003 Trapez Anchor (M10x200)

Console Adapter
#250087 Console Adapter (Ø80)

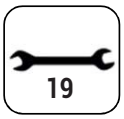
#250084 Console Adapter (Ø40x150)
#250085 Console Adapter (Ø40x300)
#250085 Console Adapter (Ø40x450)

Fix Point Bracket
#250044 for 40x80 Carriage Profile
#250060 for 40x40 Carriage Profile

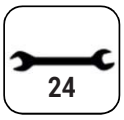
Hammerhead Bolt Set
#250070 Hammerhead Bolt and nut Set 25 pcs. (M10x30)

Tools and symbol overview

Leveling device
laser or similar



Wrench (19 mm)



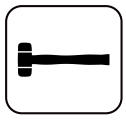
Wrench (24 mm)

Miter Saw

Impact wrench (13 mm socket)
Capacity: (100 - 120 Nm)

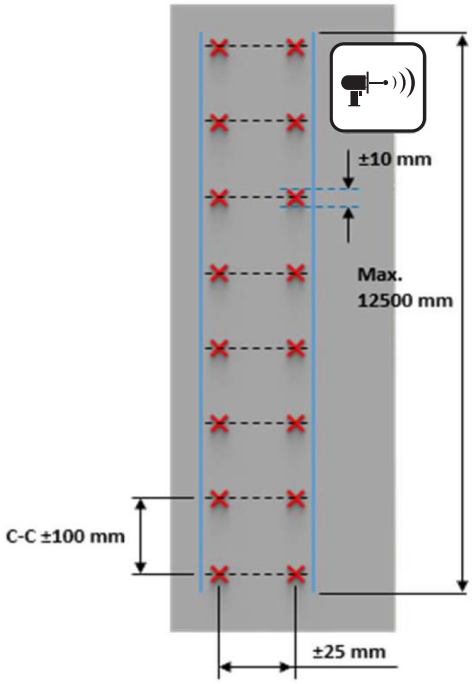
13 mm Socket incl. 1/4" adapter
Article number: #250090
Max. out side diameter Ø17,5 mm

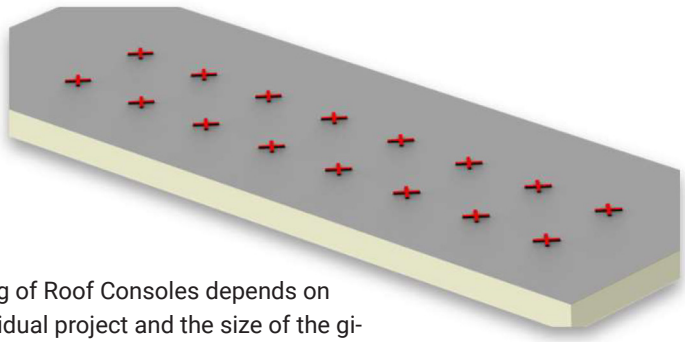
Caulking gun
Must be applicable for 300 ml and 1000 ml cartridges



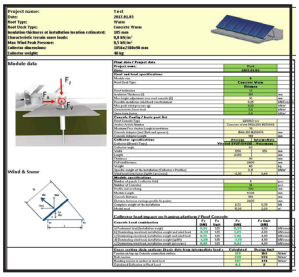
Soft hammer

1. Positioning of Roof Consoles



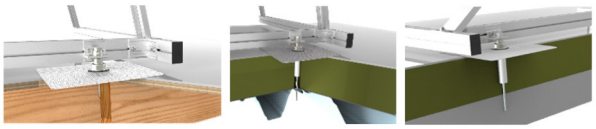


Positioning of Roof Consoles depends on each individual project and the size of the given module. Specific module dimensions are defined in the corresponding technical design report or technical specifications created for the project by Fixnordic.

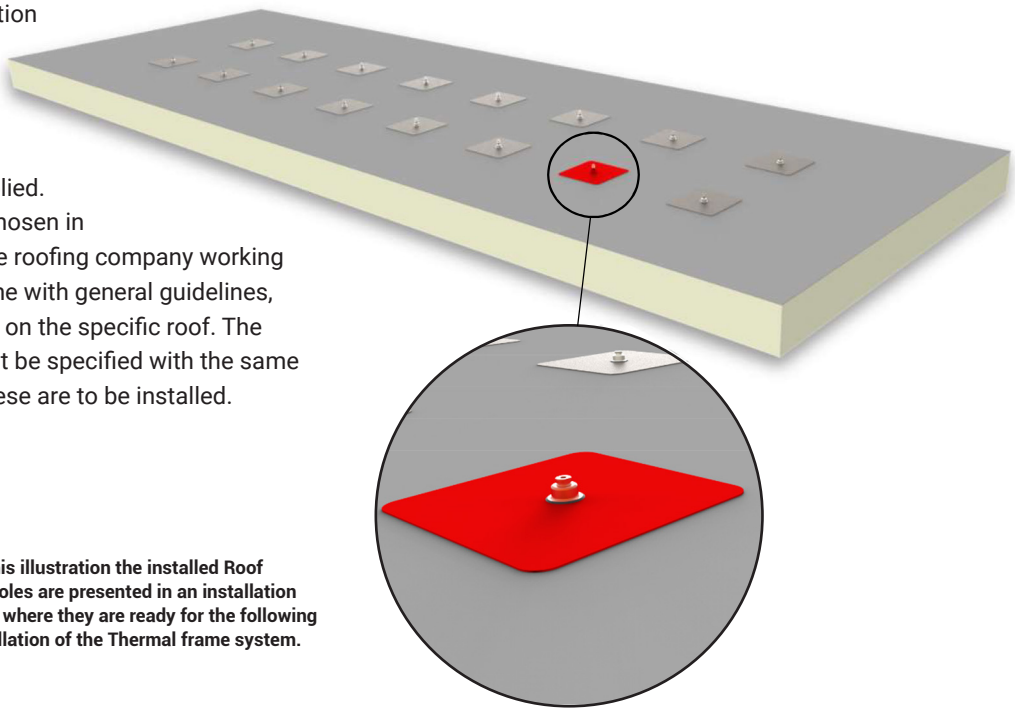


The illustration above shows the generally allowed tolerances for positioning of Roof Consoles. If a larger play is required Fixnordic must be contacted.

2. Installation of Roof Consoles



Detailes about how to install Fixnordic Roof Consoles correctly are found in the separate installation guide lines and videos available at www.fixnordic.dk. Please note that each guide is specific for one roof type only. Please also notice that project specific installation guide lines may have to be applied. The exact type of Roof Console must be chosen in collaboration with Fixnordic A/S or with the roofing company working on the installation. This must be done in line with general guidelines, best practices and warranty specifications on the specific roof. The general rule is that the Roof Consoles must be specified with the same type of membrane as the roof on which these are to be installed.

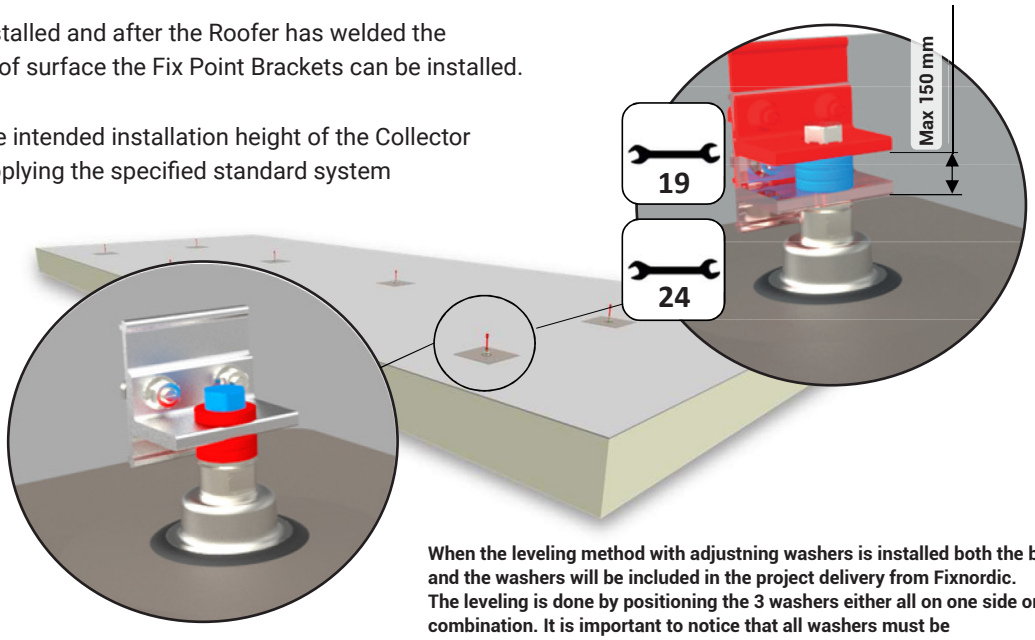


On this illustration the installed Roof Consoles are presented in an installation state where they are ready for the following installation of the Thermal frame system.

3. Rigid leveling of the collector module relativ to the surface of the roof

Once the Roof Consoles have been installed and after the Roofer has welded the integrated roofing membrane to the roof surface the Fix Point Brackets can be installed.

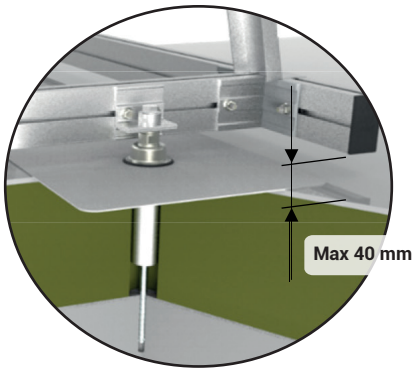
For this process it is important that the intended installation height of the Collector Module is consided and reached by applying the specified standard system components.
For the Thermal Console System one standard solution is offered where the Fix Point Bracket is positioned directly on top of the Roof Console and where a possibly leveling can be accheived with the spacing washers supplied with the Console Bracket
(Bolt + Spacing washers),
while keeping the rigidty of the anchor system intact.
Further vertical flexibility can be acchieved by paying attension to installation step. 4.



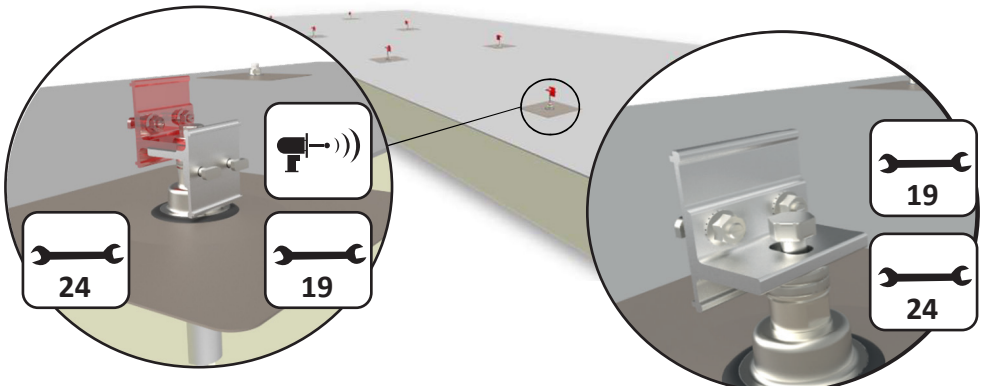
When the leveling method with adjustning washers is installed both the bolt and the washers will be included in the project delivery from Fixnordic. The leveling is done by positioning the 3 washers either all on one side or a combination. It is important to notice that all washers must be mounted due to the lenght of the bolt.

4. Fix Point Bracket flexibility and installation

In order to ensure both the vertical -and the horizontal installation flexibility of the framing system the Fix Point Bracket has been designed with a lot of flexibility which is illustrated on the following detailed illustrations:



Minimum distance between Carriage Profiles and the roof surface

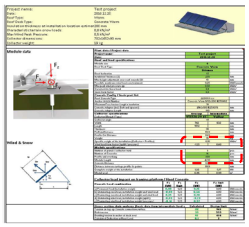


The Fix Point Bracket can be rotated or turned until the right height and position is reached.

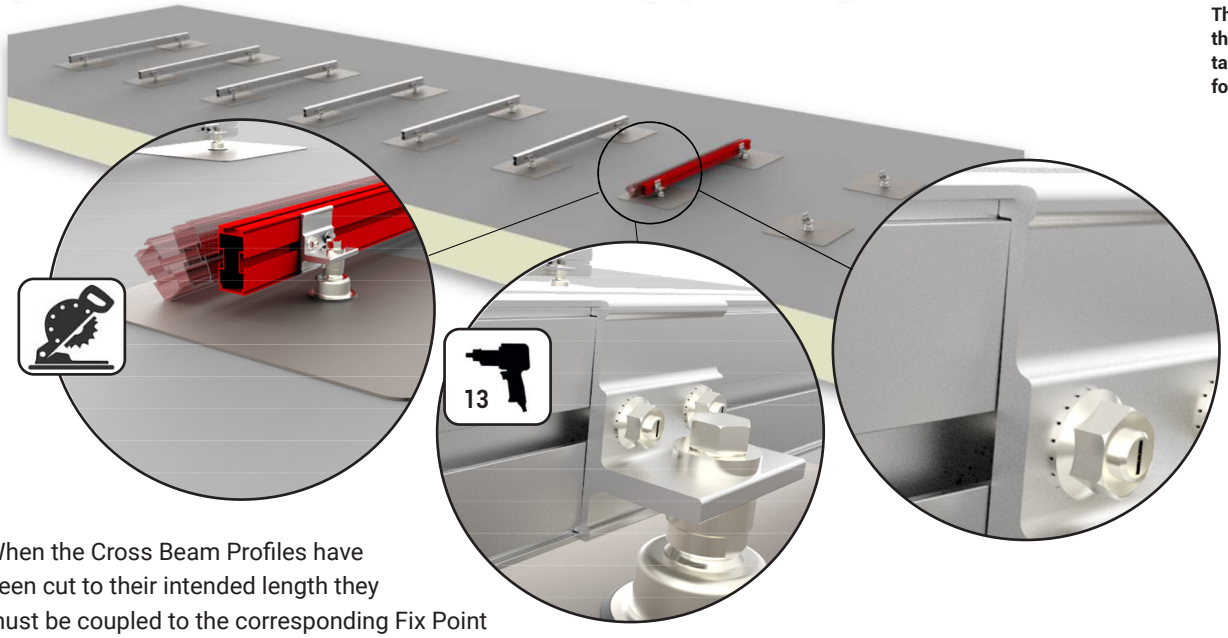
The long hole in the Fix Point Bracket helps to provide a horizontal play for the positio-ning of the cross beam carrige profiles.

5. Installation of Cross Beam Carriage Profiles

With the Fix Point Brackets installed in their intended positions the next step is to install the Cross Beam Carriage Profiles. For this purpose the current module specification must be cross checked in order to set the right profile cut length.

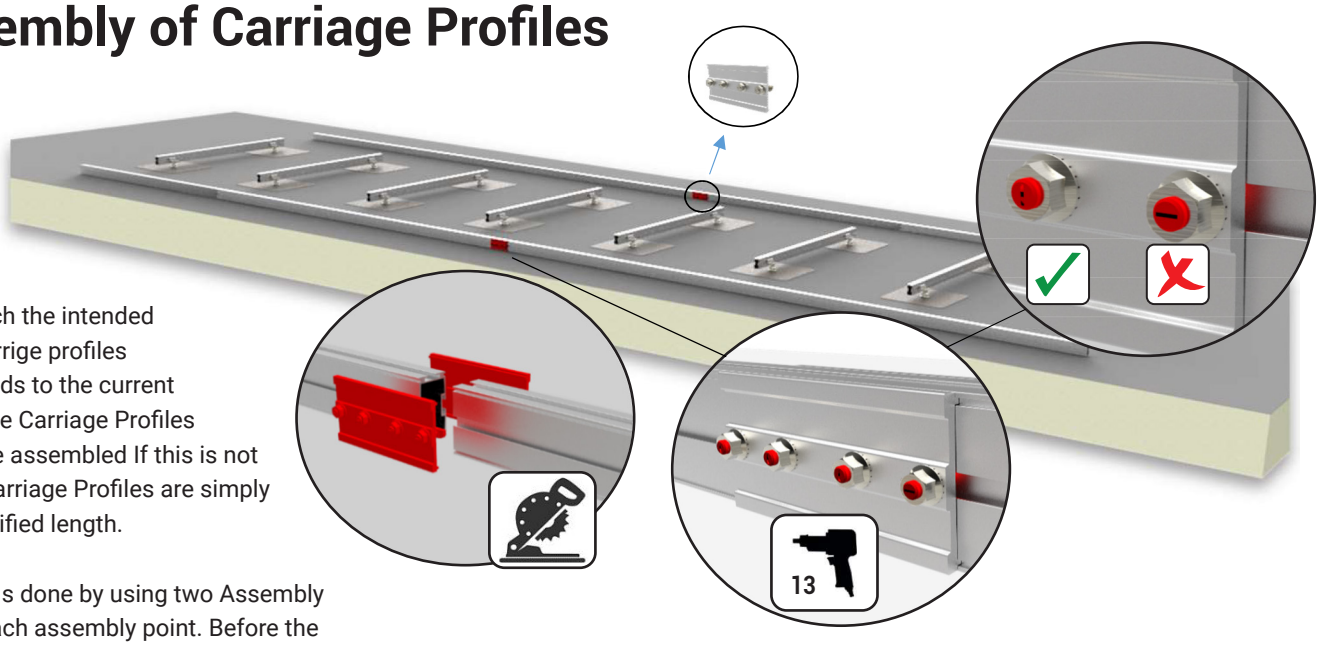


The design calculation for the current module also contains the specified cut lenght for Cross Beam Profiles



When the Cross Beam Profiles have been cut to their intended length they must be coupled to the corresponding Fix Point Brackets. The illustrations above presents this process and the detailed close ups shows the how the directional tracks in each Profile must be aligned with the two reinforcement rips on the Fix Point Brackets and finally how the Hammerhead bolts must be constrained with the cross oriented position mark.

6. Assembly of Carriage Profiles

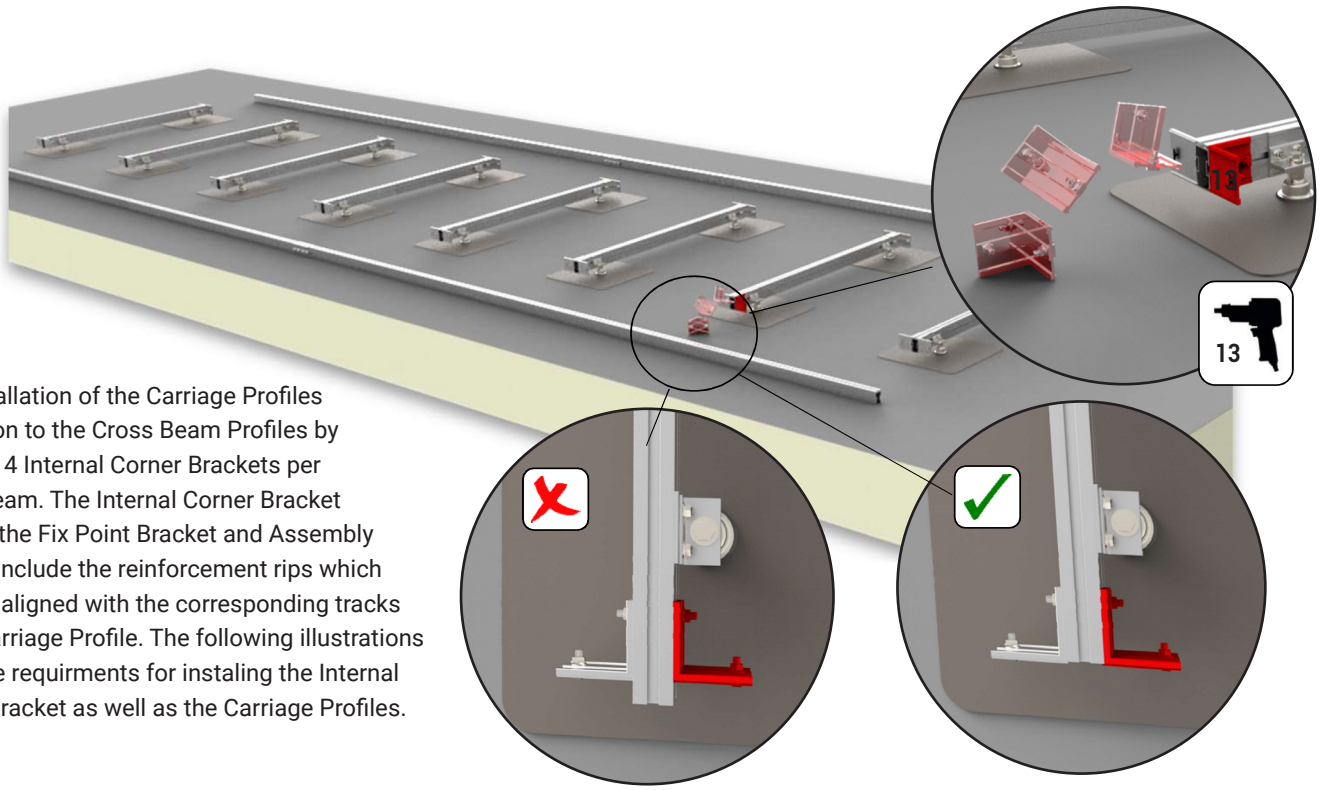


In order to reach the intended lengt of the carrige profiles hich corresponds to the current odule length the Carriage Profiles may need to be assembled If this is not the case the Carriage Profiles are simply cut to the specified length.

The assembly is done by using two Assembly Brackets for each assembly point. Before the bolts are fixed, the Carriage Profiles must be pushed together whereafter all the hammer-head bolts are turned and tightened.

This illustration shows how the two Assembly Brackets are positioned in each profile assembly point.

6. Installation of Carriage Profiles (Internal Corner Bracket)

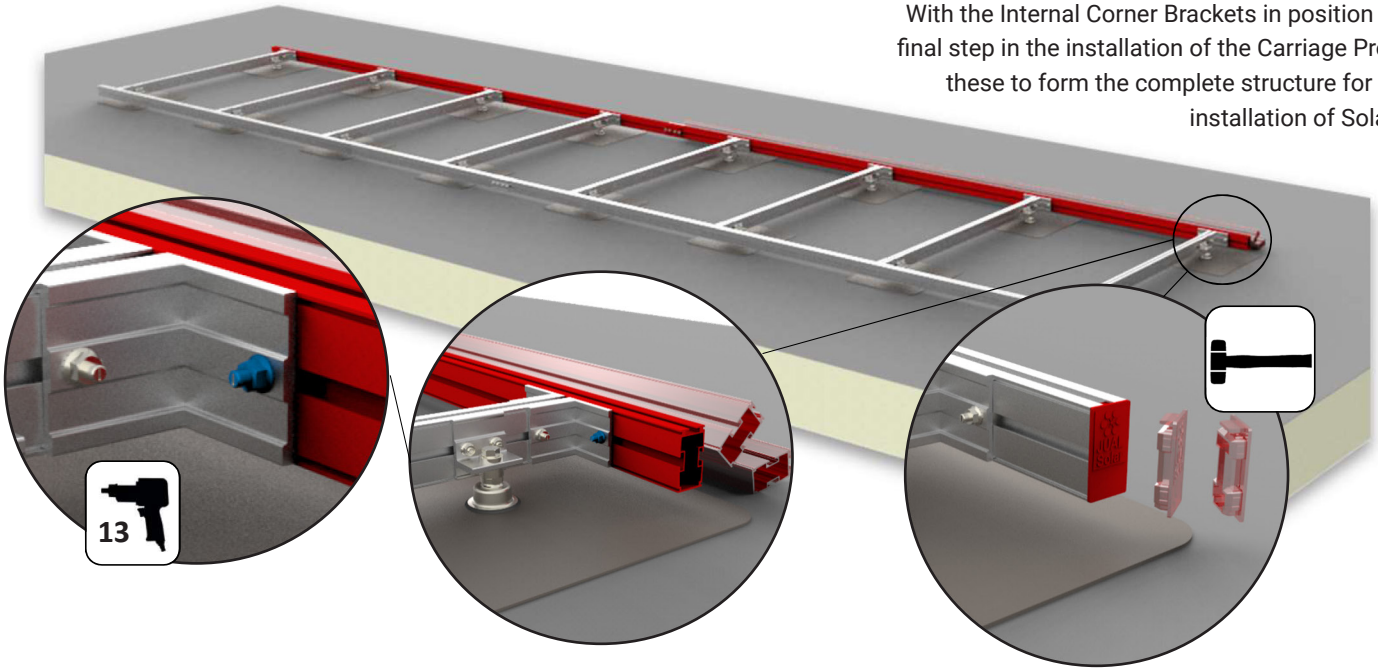


The installation of the Carriage Profiles is done on to the Cross Beam Profiles by applying 4 Internal Corner Brackets per Cross Beam. The Internal Corner Bracket does as the Fix Point Bracket and Assembly Bracket include the reinforcement rips which must be aligned with the corresponding tracks in the Carriage Profile. The following illustrations show the requirments for instaling the Internal Corner Bracket as well as the Carriage Profiles.

The Internal Corner Bracket must align with the end of the Cross Beam Profiles and the Cross Beam rofile may not extend beyond the connecting surface ofthe Bracket.

7. Installation of Carriage Profiles (Fixation)

With the Internal Corner Brackets in position and fixed the final step in the installation of the Carriage Profiles is to fix these to form the complete structure for the following installation of Solar Collectors.



The Internal Bracket is finally fixed to the Carriage Profiles by constraining the Hammer-head bolt while assuring that the position mark is oriented correctly.

The illustration above shows the insertion of the Carriage Profile End Cover which is the final step in the installation process of the Fixnordic Solar Collector Platform.

FIXNORDIC EAST/WEST CONSOLE SYSTEM

The Console system has been designed with the intension of creating the basis for a trouble free PV-installation with a long life time for flat roofs with bituminous- or synthetic roofing membranes.

A technical design report which describe how the PV-installaion influences the current roof surface is generated for each individuel project and the specific requirements for the roof surface has been validated through out the project planning.

Design calculations are based upon the EuroCode EN1991 1-3 and EN1991 1-4 where aerodynamic values derived from specific wind tunnel tests forms the foundation for the wind related fixation into the building structure. Besides the wind technical aspect the snow related design is also an important part of the load design as this forms the basis for how the pressure load will be distributed from the framing structure to the roof surface.

The precondition for a succesfull result is that each element in the installation is carried out in full compliance with both the Technical Design Report as well as the relevant installation guide lines.
It is therefore recommended that the installation guide line is thouroughly studied and that Fixnordic is contacted if uncertainties, questions or if the need for changes arises.