Alpha Solar FFH 4L 2C 4000

Data Sheet/Installation Manual

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Installation Safety

The maintenance of a safe and healthful working environment is of the utmost importance. Safety requirements must be considered fundamental to the construction of any project. It is essential that the workforce be trained to follow procedures consistent with applicable safety standards. Each person must be constantly alert to his or her personal obligation to observe safe operating procedures. The continued cooperation of all personnel is required to support and sustain an effective safety environment.

Make sure that all machine operators are trained in the use and safety of all machinery and are licensed to use the equipement.

Use of the following is Mandatory for Safety:

Hard Hat

Safety Footwear

Protective Clothing

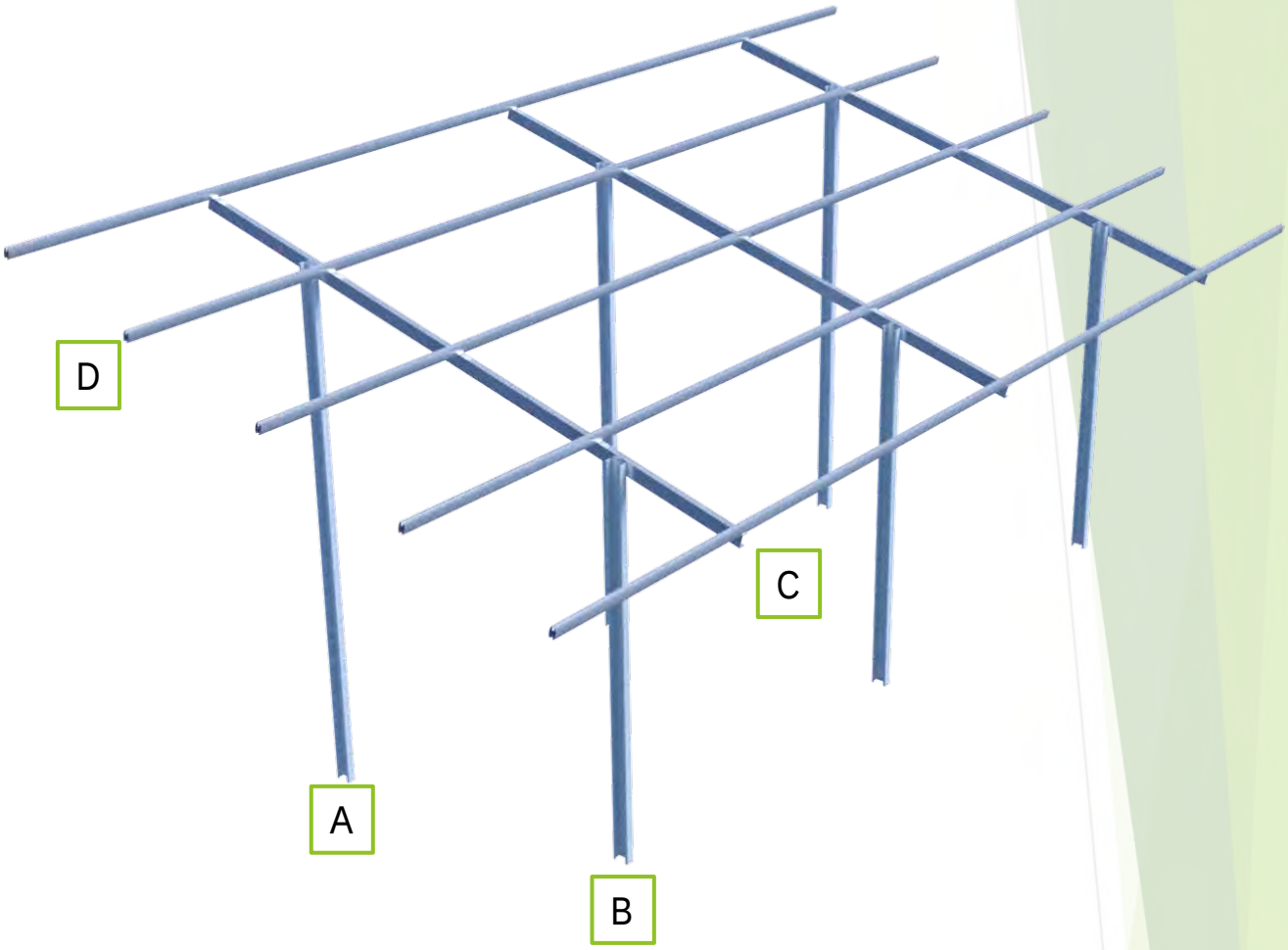
Eye Protection

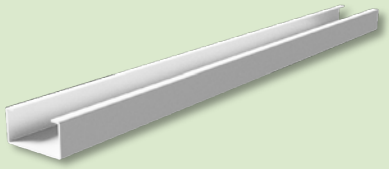
High Visibility Vest

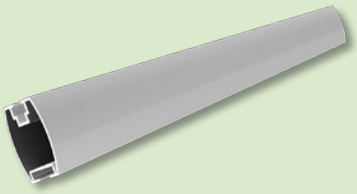
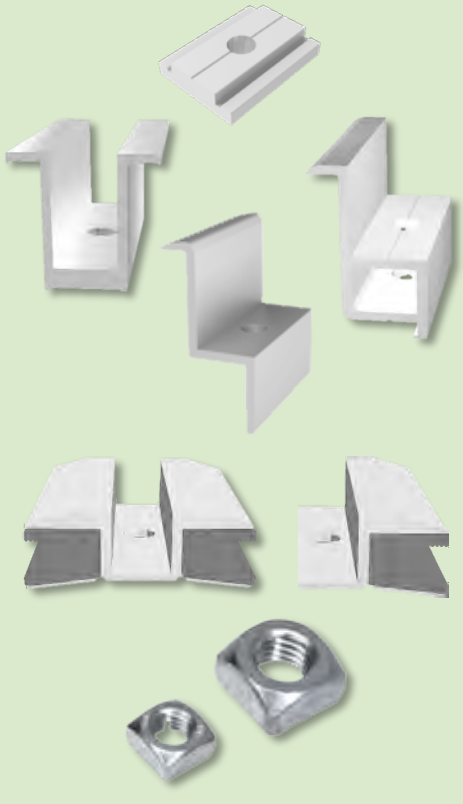
Hearing Protection

Hand Protection

FFH 4L 2C 4000 - Parts List



Part	Technical Description	Image
A	CST 100x50x15x3 ▪ Hot Galvanized (min. 55µm) ▪ S275 ▪ Length: Varies by application	
B	CST 120x40x15x3 ▪ Hot Galvanized (min. 55µm) ▪ S275 ▪ Length: Varies by application	
C	CST 100x40x3 ▪ Hot Galvanized (min. 55µm) ▪ S275 ▪ Length: Varies by application	

Part	Technical Description	Image
D	**Mounting Beam** ▪ ALU 60x40x2mm ▪ Aluminium 6063T66 ▪ Length: Varies by application	
	Module Support Beam Connectors ▪ ALU 36x33x1.5mm ▪ Aluminium 6063T66 ▪ Length: ~250mm	
	Module Clamps Aluminum 6063T66 Polycrystalline Clamps Middle Clamp - 50mm End Clamp - 50mm Thin Film Clamps Various Types Bolt(s) : DIN 912 M8 (Various Lengths depending on module thickness) - DIN 557 M8 A2 or DIN933 M8x60 HEX BOLT / DIN934 M8 HEX NUT for 4L	

FFH 4L 2C 4000 - Parts List

Part	Image	Torque
DIN933 M10x30 HEX BOLT		~30 Nm** See Tightening Torque Chart
DIN934 M10 HEX NUT		N/A
DIN9021 M10.5 WASHER		N/A
9097 M8x25 Hammer Head Bolt		~25 Nm** See Tightening Torque Chart
DIN934 M8 HEX NUT		N/A
DIN125 M8.5 WASHER		N/A

Planning and Design

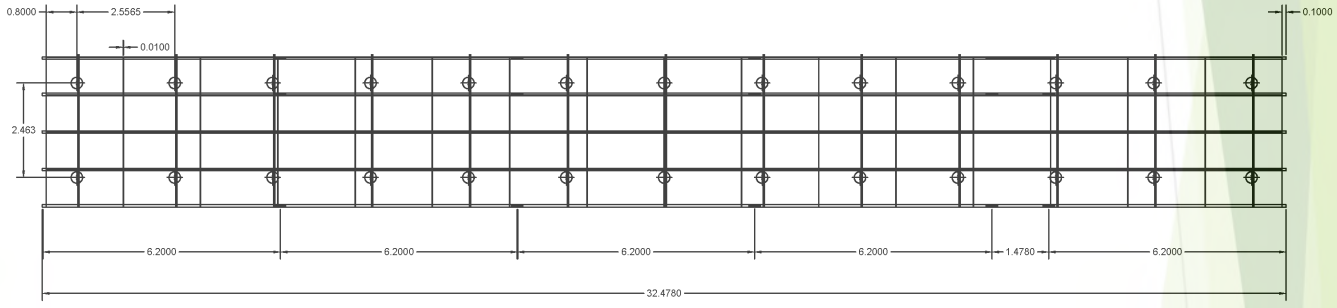
The Free Field (FF) 4L 2C mounting system is designed and engineered individually for each project site and location. A geotechnical and static study will need to be performed for each site in order to able to plan and design the mounting system.

For the mounting system installation there are certain tolerances that you will need to adhere to in order to make sure that the installation is completed correctly, and the project is built to standards.

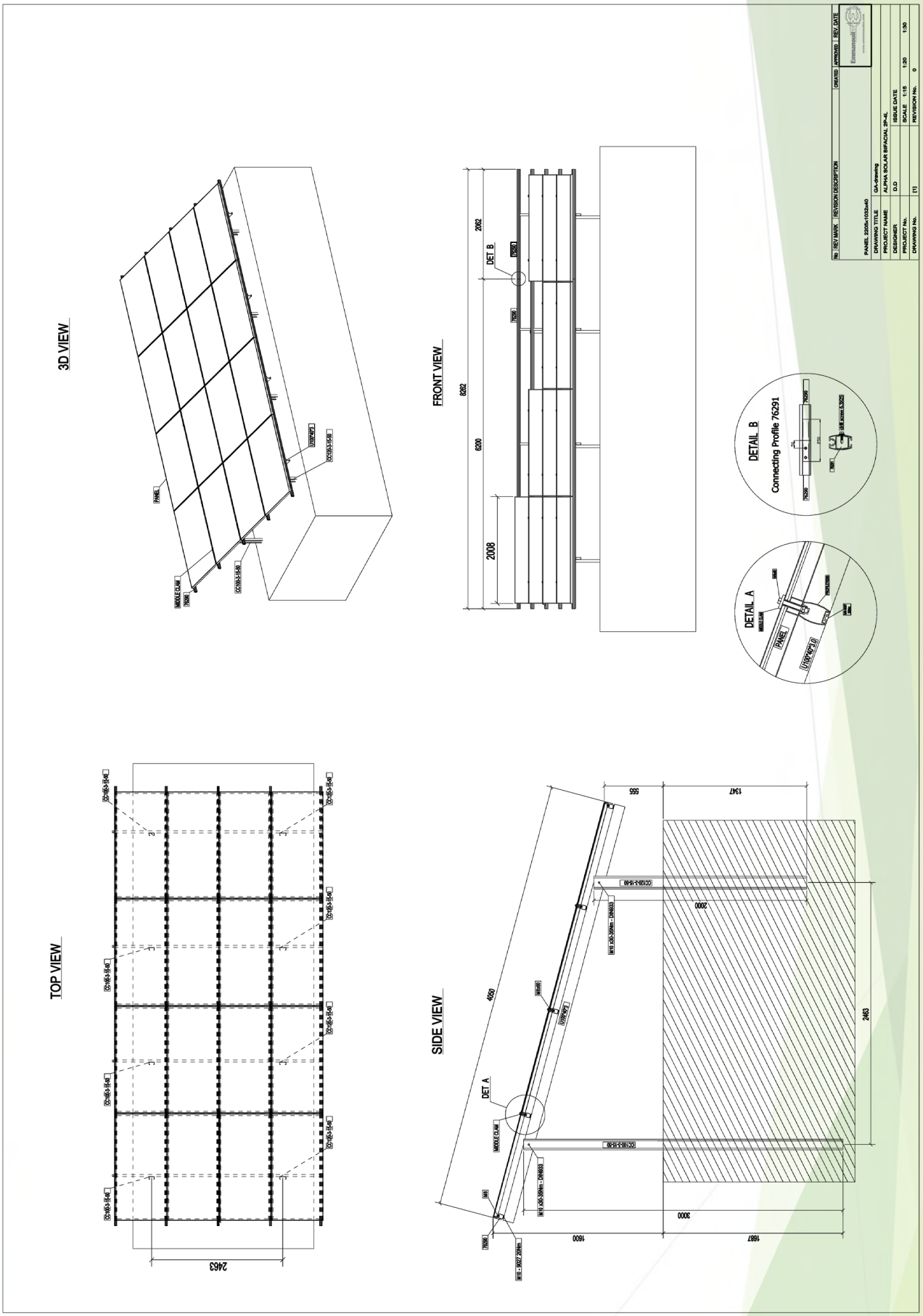
Each site will need a general layout plan with ramming point positions and general layout plan of the mounting system. It is important to follow the design so that the system is installed correctly.

Following you will find examples of a general table layout and mounting system section layout.

Alpha Solar FFH 4L 2C 4000 – Mounting System Layout Example



FFH 4L 2C 4000 – Planning and Design – Layout Example

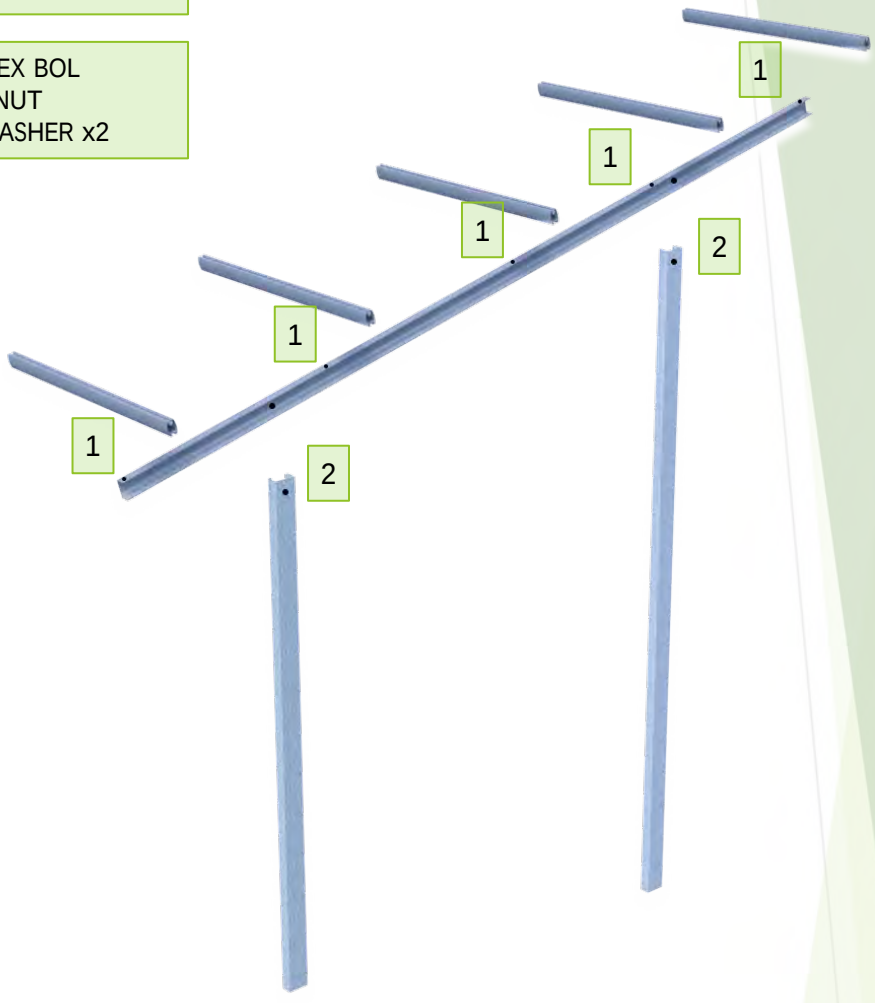


Alpha Solar FFH 4L 2C 4000 – Typical Model Example
Profiles may differ

FFH 4L 2C 4000 - Mounting System Assembly

1. 9097 M10x25 Hammer Head Bolt
   DIN934 M10 HEX NUT
   DIN125 M10.5 WASHER

2. DIN933 M10x30 HEX BOL
   DIN934 M10 HEX NUT
   DIN9021 M10.5 WASHER x2

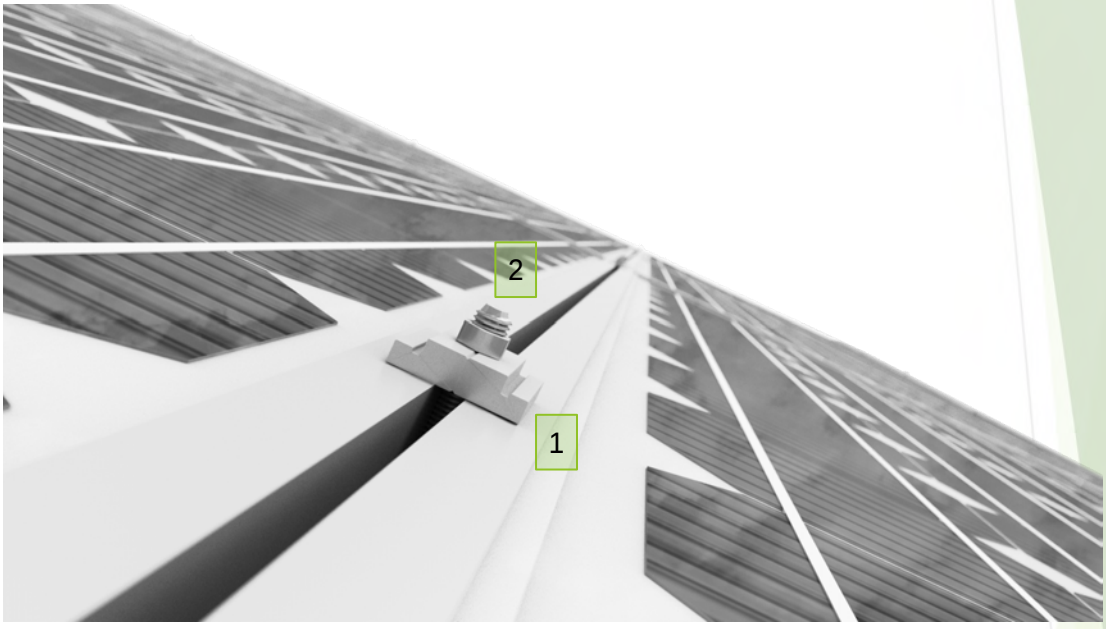


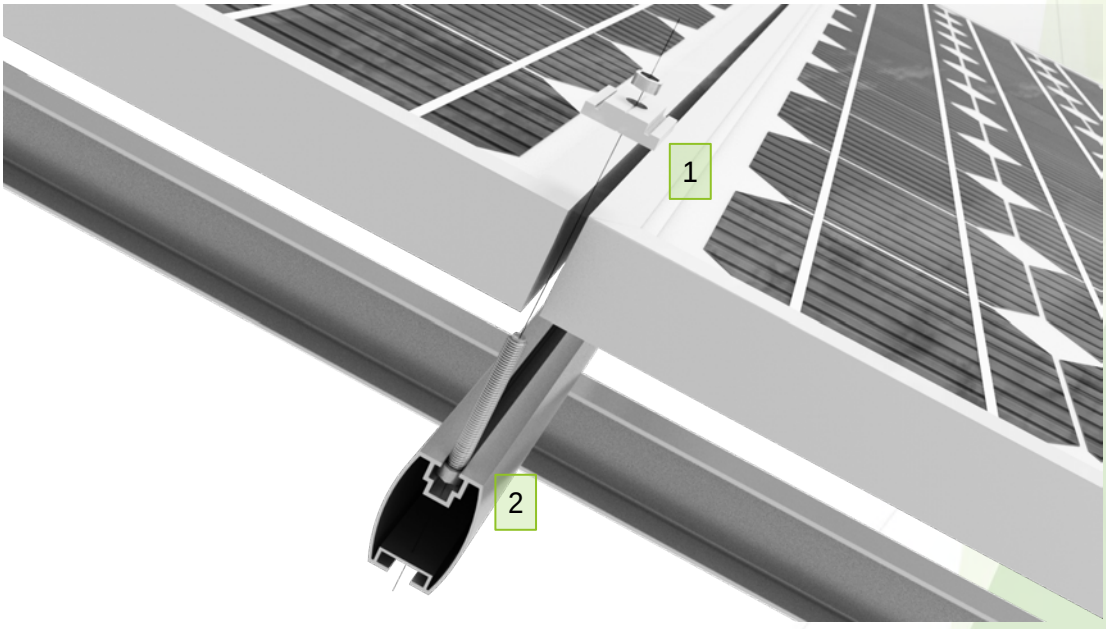
Ramming Post Tolerances	
Heigth	+/- 20mm
North / South	+/- 2 °
East / West	+/- 2 °

FFH 4L 2C 4000 – Mounting System Panel Assembly

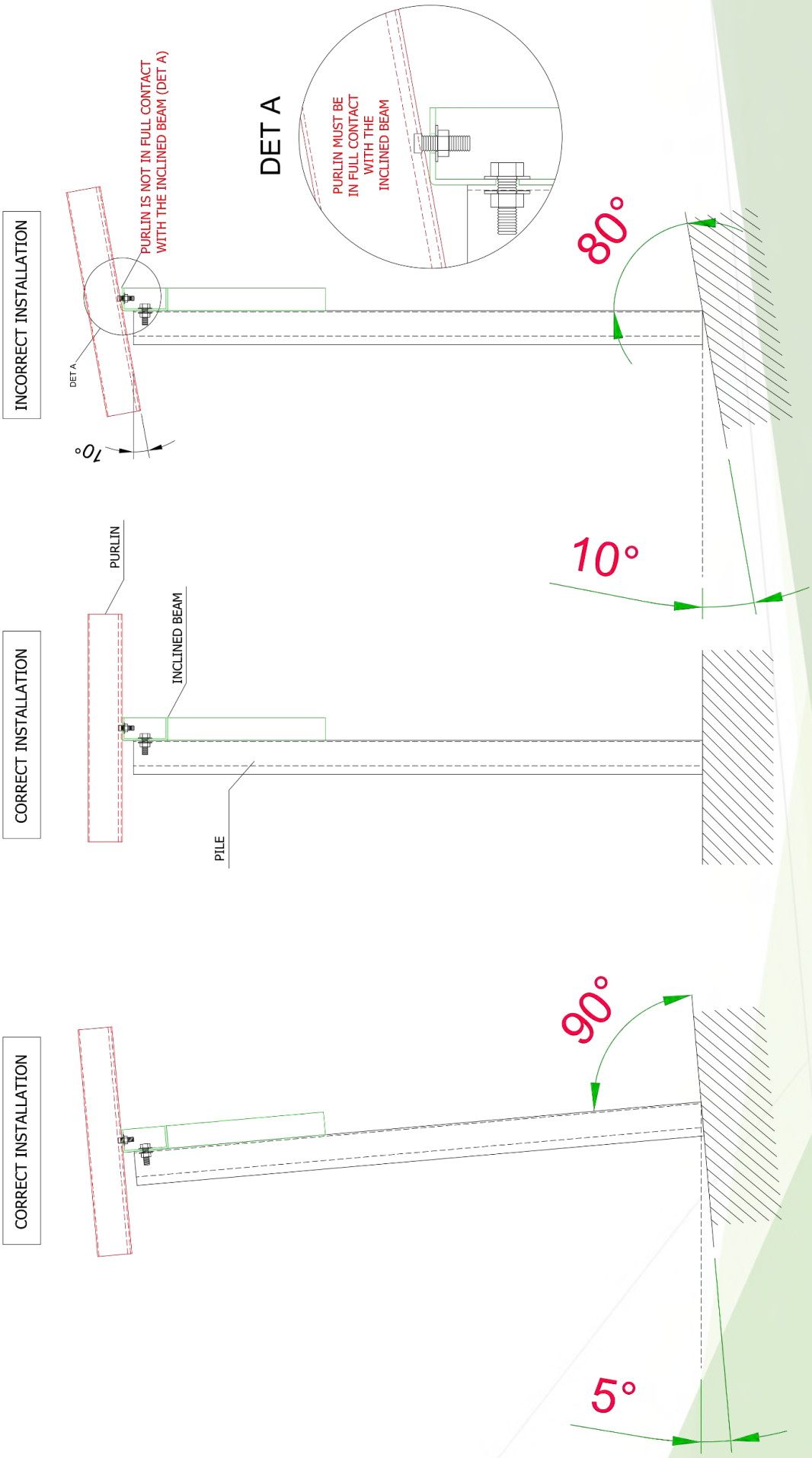
1. 4L System Module Clamp

2. DIN933 M8x60 HEX BOLT
   DIN934 M8 HEX NUT





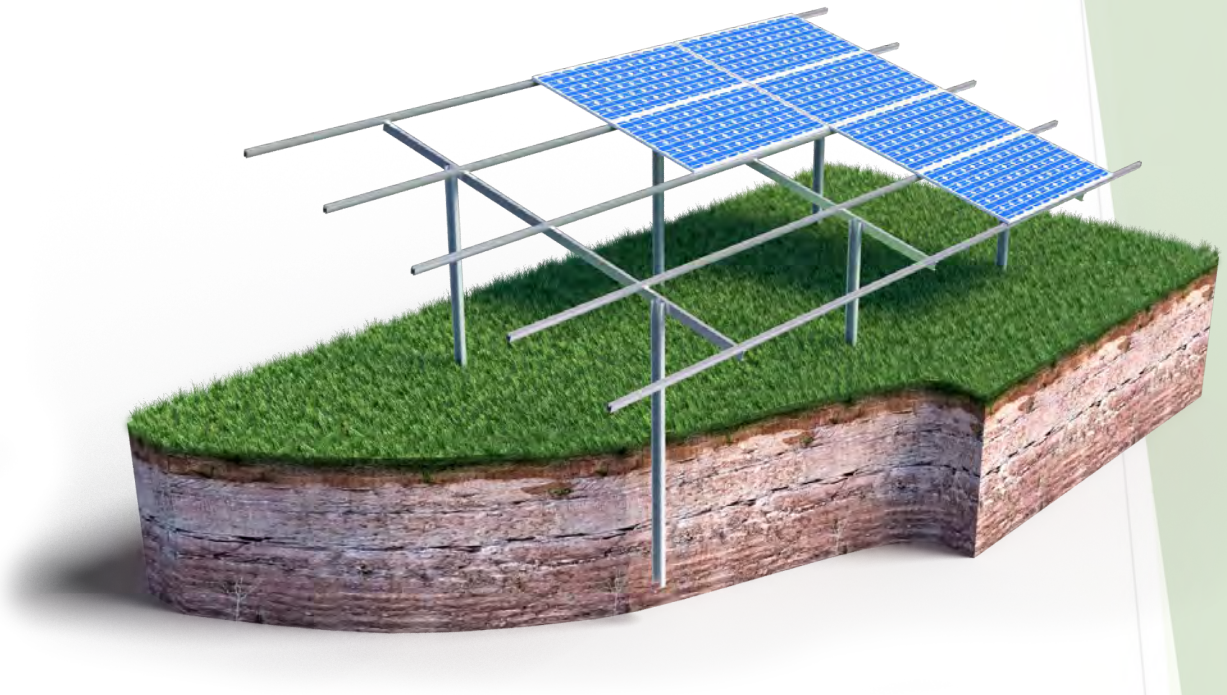
FFH 4L 2C 4000 – Purlin Installation



Tools Needed for Assembly

Part	Technical Description	Image
1	**Allen Wrench 6mm**	
2	**Torque Wrench**	
3	**Wrench 13mm and 17mm**	

FFH 4L 2C 4000 - Preventative Maintenance



FFH 4L 2C Preventative Maintenance

It is important for the mounting system to be checked every 12 months and to use a torque wrench to check the mounting cap bolts and other screws for proper tightened torque.

**Stainless Steel Fasteners - Pre-load and Tightening Torques

Thread	Coeff Friction	Preload (Kn) Property class			Tightening Torque (Nm) Property class			Min Breaking Torque		
		A1-50	A2-70	A4-80	A1-50	A2-70	A4-80	A1-50	A1-70	A4-80
M10.0	0.1	9.32	20	26.6	13.7	30	39.4	46	65	74
	0.2	7.58	16.2	16.2	20.3	44	58			
	0.3	6.14	13.1	13.1	24	51	69			
M8.0	0.1	5.86	12.6	12.6	6.8	14.5	19.3	23	32	37
	0.2	4.75	10.2	10.2	10.1	21.4	28.7			
	0.3	3.85	8.85	8.85	11.9	25.5	33.9			

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