

Installation manual

Use in combination with the project report of the ValkKITsplanner

VAN DER VALK



Van der Valk Solar Systems

Developer and producer of
solar mounting systems



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Please note

- This manual is not project specific.
- This manual is not legally binding.
- No rights may be derived from this manual.
- Use this manual in combination with the ValkPVplanner project report.
- Check 'Datasheet Cable management' for cable suggestions.
- The system is placed in the middle zone of the roof.





Disclaimer

This installation manual must be seen in addition to the project report which shows you specific information about your project like a project drawing and ballast plan for flat roofs.

The project report is a result of the calculation tool, the ValkPVplanner. This online calculation tool and/or the project reports derived from this tool were composed with the greatest possible care. Nonetheless, it is possible that some information might not be entirely correct as the results for each project report can be based on default values, which values always need to be checked by you. The instructions provided in this project report must be observed at all times. All applicable standards and appendixes have been integrated in this online calculation tool.

All current structural, safety and building regulations must be observed. Solar mounting systems installed on roofs will be exposed to wind and snow. The building in question will be subject to a load as a result of the PV system. A design calculation must be used to establish whether or not the building will be able to withstand the extra load. Where necessary, modifications need to be made.

Flat roof systems should either be attached to the roof or need to be supported by ballast, to make sure that the system is unable to be lifted or tipped over. The ballast specified in the ValkPVplanner project report will be vital to ensure that the mounting system can be used. Flat roofs with an angle above 5 degrees must be attached to the roof.

The calculations in the online calculation tool do not take into account obstacles in the near surrounding like high buildings, cliffs and mountains. Restrictions also apply for the position of the system on a roof. The solar panels must be installed at a certain distance from edge of the roof as shown in this project report and the installation manual.

The standard warranty for pitched roof, flat roof and ground mount systems is 10 years, which can be extended under certain conditions. The guarantee provided is subject to the guarantee conditions stated in the general terms and conditions stipulated by Van der Valk Solar Systems B.V. Our terms and conditions shall apply to all our products and can be found on our website: www.valksolarsystems.com.

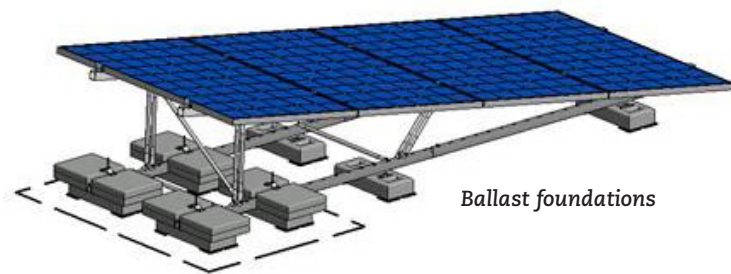
Van der Valk Solar Systems B.V. does not accept any liability for any direct and/or indirect consequences of any act (or omission) ensuing from the information in or the failure to observe the instruction provided in the project report and the installation manual and for possible incorrect results resulting from the use of this online calculation tool which was made available to you.

Required ballast | The Netherlands

General

The ValkQuattro® mounting system must be reinforced by means of tiles, which must be placed on the indicated ballast foundations. In **three steps** you can easily calculate the required ballast;

- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg



Surrounding parameters

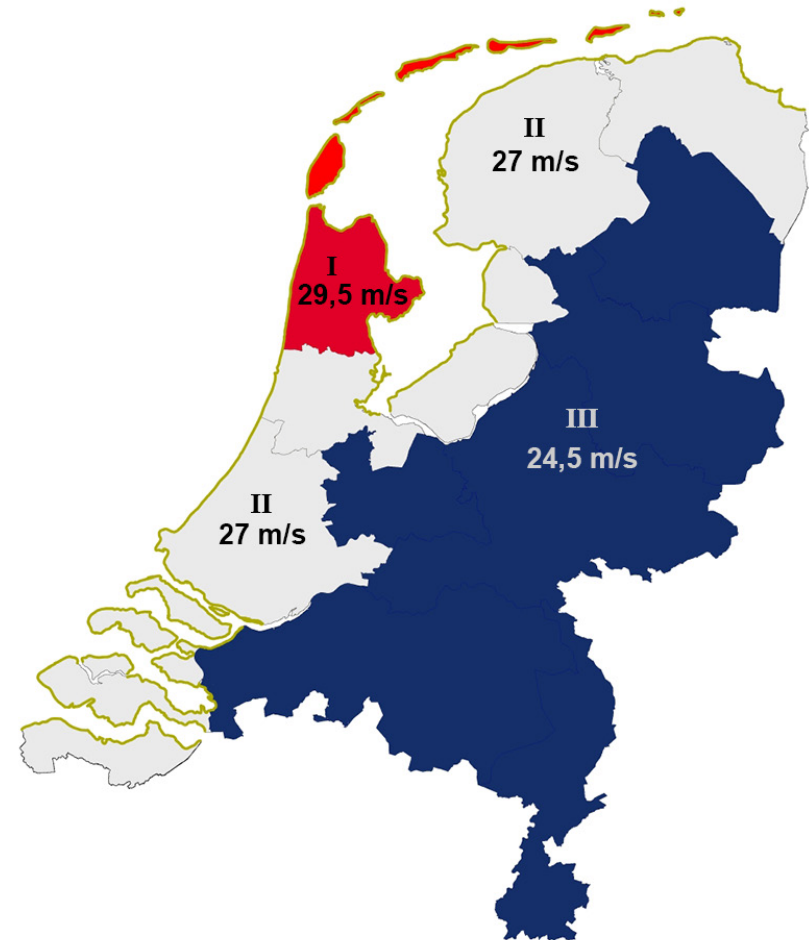
Panelsize	Length approx. 1650 mm - Width max 1005 mm
	Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Built environment
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
I (29,5 m/s)	201	201	258	326	382	kg
	22,5	22,5	29	na**	na**	tiles
II (27 m/s)	122	122	169	226	271	kg
	14	14	19	25,5	30,5	tiles
III (24,5 m/s)	50	50	88	135	172	kg
	6	6	10	15	19,5	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations.

Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Windmap The Netherlands



* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

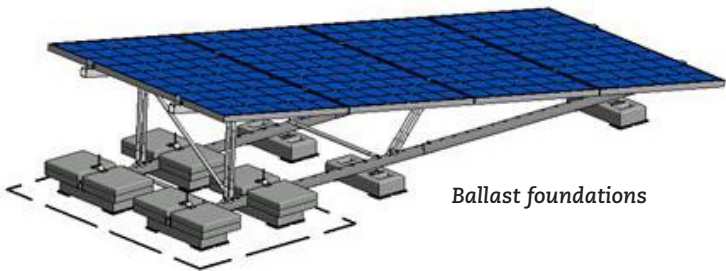
** Not available due to exceedance maximum number of tiles.

Required ballast | Belgium

General

The ValkQuattro® mounting system must be reinforced by means of tiles, which must be placed on the indicated ballast foundations. In **three steps** you can easily calculate the required ballast;

- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg



Surrounding parameters

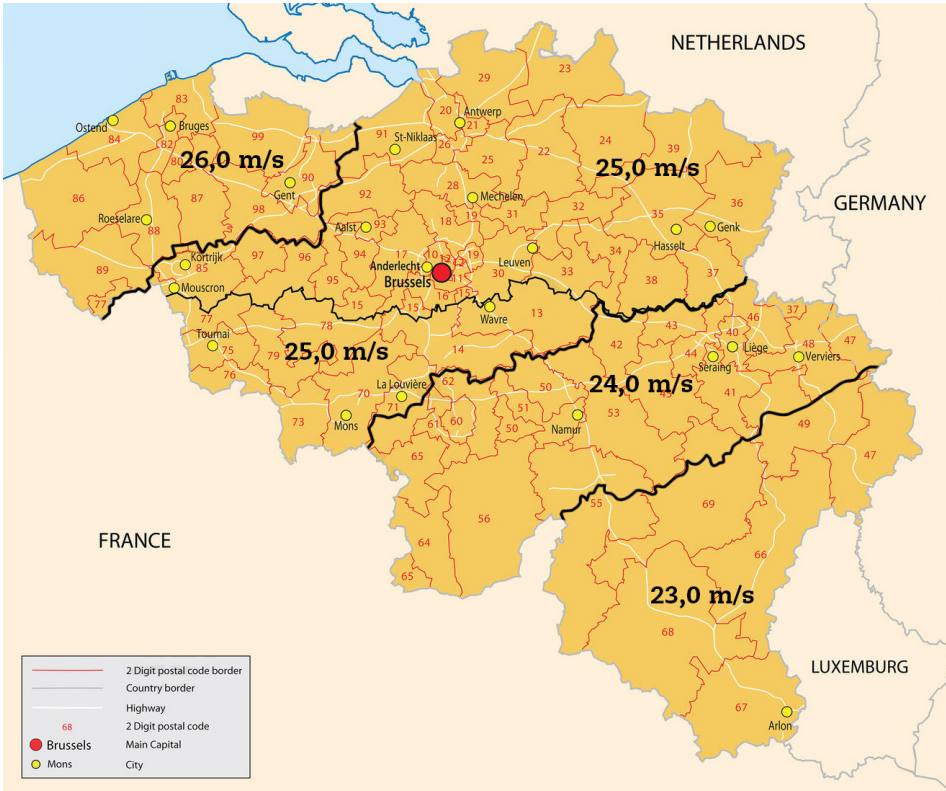
Panelsize	Length approx. 1650 mm - Width max 1005 mm
Position	Height 28-50 mm - Weight approx. 19 kg
Terrain category	Middle zone roof
Roofing materials	Villages, suburbs, industry, forests
Tile size*	Bitumen
Flat roof	30 x 30 x 4,5 cm á 9 kg
	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
23 m/s	0	18	43	78	107	kg
	0	2	5	9	12	tiles
24 m/s	7	38	70	108	139	kg
	1	4,5	8	12	15,5	tiles
25 m/s	22	63	98	140	173	kg
	2,5	7	11	16	19,5	tiles
26 m/s	41	90	128	173	209	kg
	5	10	14,5	19,5	23,5	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations.

Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Windmap Belgium



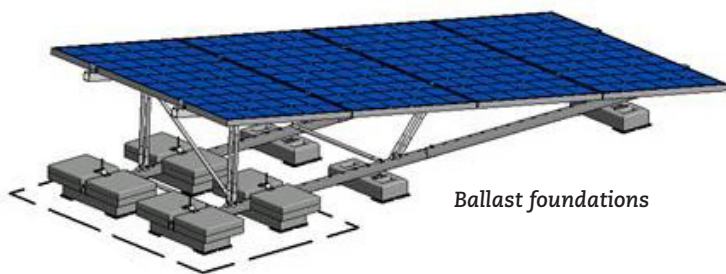
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Required ballast | Germany

General

The ValkQuattro® mounting system must be reinforced by means of tiles, which must be placed on the indicated ballast foundations. In **three steps** you can easily calculate the required ballast;

- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg



Surrounding parameters

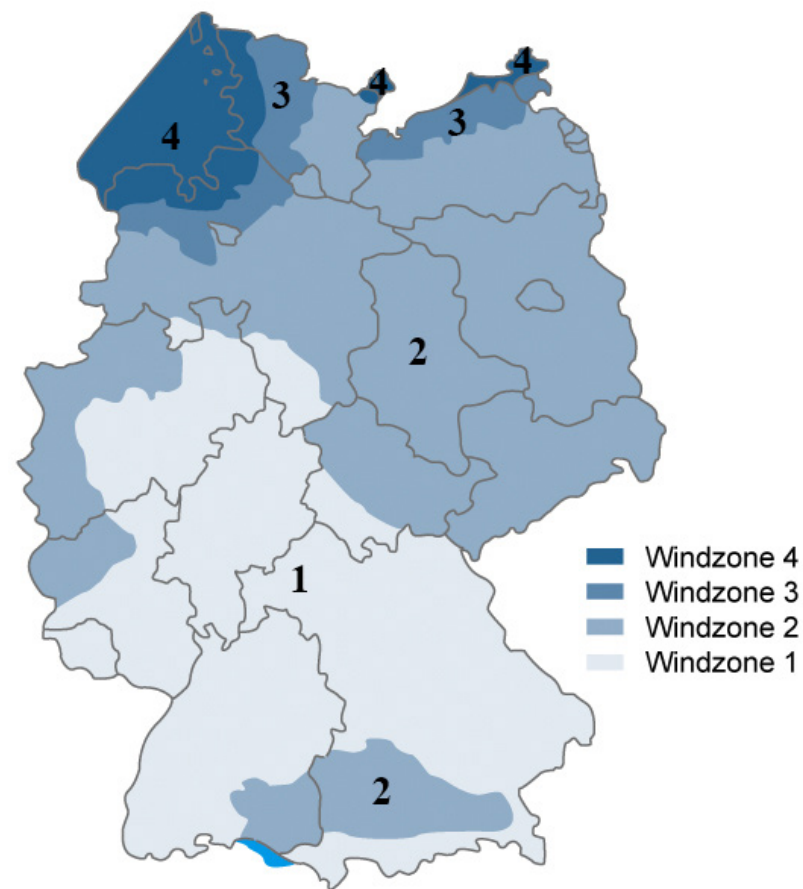
Panelsize	Length approx. 1650 mm - Width max 1005 mm
	Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Town
Height above sea level	350 m
(Excluding North German Lowland)	
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
1 (22,5 m/s)	0	0	0	0	0	kg
	0	0	0	0	0	tiles
2 (25 m/s)	36	36	36	36	36	kg
	4	4	4	4	4	tiles
3 (27,5 m/s)	99	99	99	99	99	kg
	11	11	11	11	11	tiles
4 (30 m/s)	167	167	167	167	167	kg
	19	19	19	19	19	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations.

Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

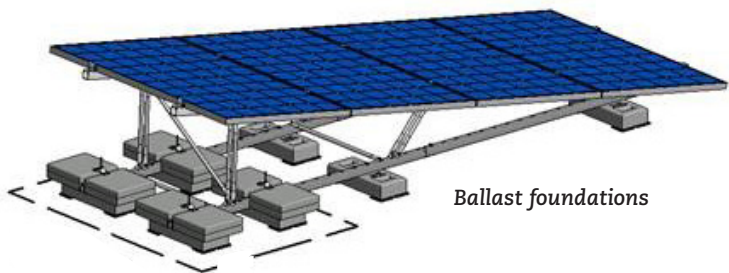
Windmap Germany



* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Required ballast | United Kingdom

General



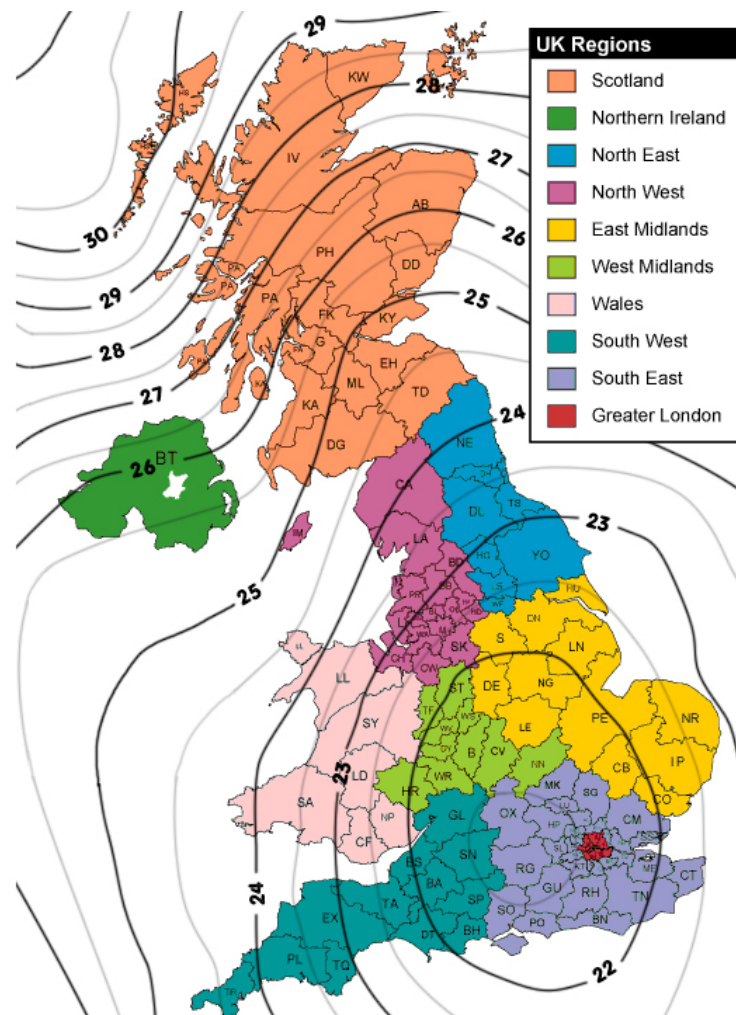
Surrounding parameters

Panelsize	Length approx. 1650 mm - Width max 1005 mm Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Builed enviroment
Height above sea level	50 m
Distance to coast linet	5 km
Distance to city boarder:	5 km
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	53	117	143	221	221	kg
	6	13	16	25	25	tiles
23 m/s	83	153	181	266	266	kg
	9,5	17	20,5	30	30	tiles
24 m/s	113	189	220	313	313	kg
	13	21	24,5	na**	na**	tiles
25 m/s	145	228	261	362	362	kg
	16,5	25,5	29	na**	na**	tiles
26 m/s	178	268	304	413	413	kg
	20	30	na**	na**	na**	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations

Windmap United Kingdom



* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

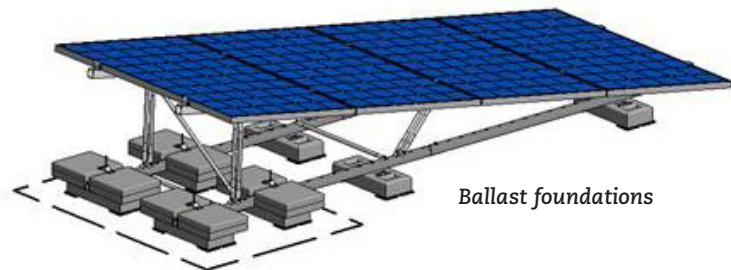
** Not available due to exceedance maximum number of tiles.

Required ballast | Ireland

General

The ValkQuattro® mounting system must be reinforced by means of tiles, which must be placed on the indicated ballast foundations. In **three steps** you can easily calculate the required ballast;

- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg



Surrounding parameters

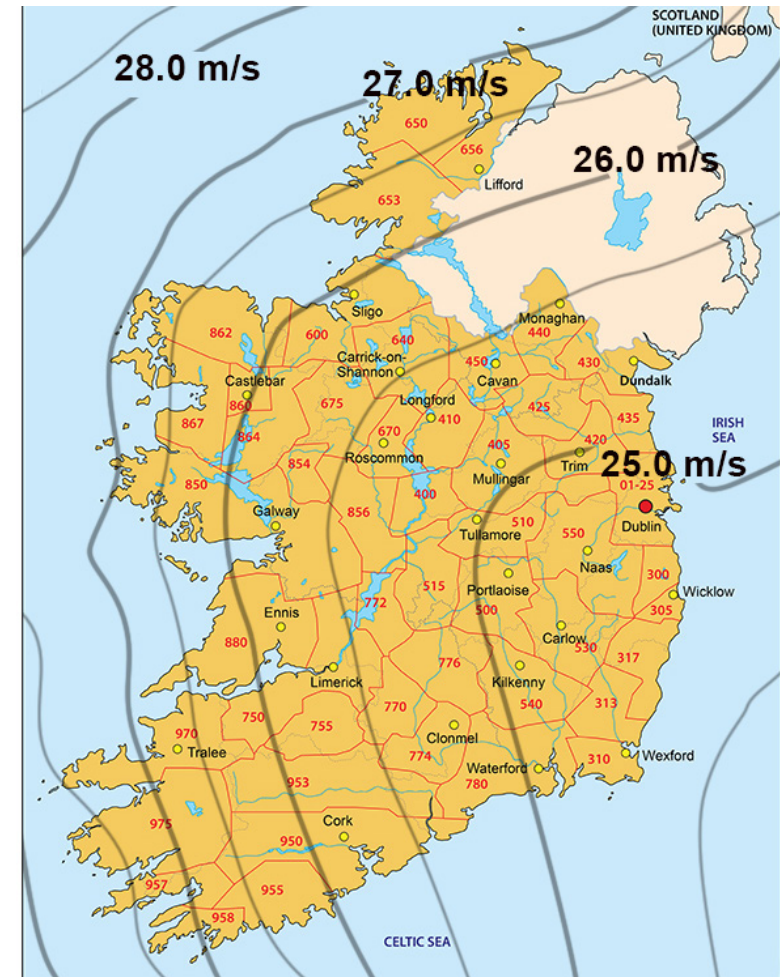
Panelsize	Length approx. 1650 mm - Width max 1005 mm
Position	Height 28-50 mm - Weight approx. 19 kg
Terrain category	Middle zone roof
Height above sea level	Town
Distance to coast line	50 m
Distance to city border	5 km
(Northern Ireland: see United Kingdom)	
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
25 m/s	145	228	261	362	362	kg
	16,5	25,5	29	na**	na**	tiles
26 m/s	178	268	304	413	413	kg
	20	30	na**	na**	na**	tiles
27 m/s	213	309	348	466	466	kg
	24	na**	na**	na**	na**	tiles
28 m/s	249	353	394	521	521	kg
	28	na**	na**	na**	na**	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations.

Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Windmap Ireland



* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

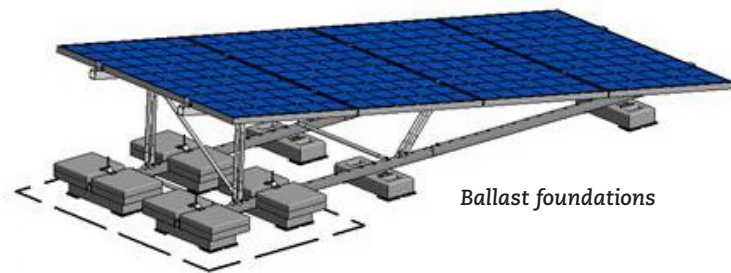
** Not available due to exceedance maximum number of tiles.

Required ballast | Norway

General

The ValkQuattro® mounting system must be reinforced by means of tiles, which must be placed on the indicated ballast foundations. In **three steps** you can easily calculate the required ballast;

- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg



Surrounding parameters

Panel size	Length approx. 1650 mm - Width max 1005 mm
	Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Built environment
Height above sea level	175 m
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area**	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	16	16	16	16	16	kg
	2	2	2	2	2	tiles
25 m/s	89	89	89	89	89	kg
	10	10	10	10	10	tiles
27 m/s	147	147	147	147	147	kg
	16,5	16,5	16,5	16,5	16,5	tiles
29 m/s	210	210	210	210	210	kg
	23,5	23,5	23,5	23,5	23,5	tiles
31 m/s	278	278	278	278	278	kg
	31	31	31	31	31	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations.

Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Norway



* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

** To determine the wind area see next page.

Wind area Norway

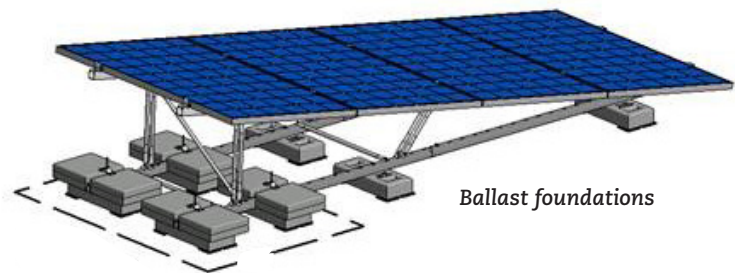
m/s		m/s		m/s		m/s		m/s		m/s			
Province Østfold 22		Province Vestfold 23				Province Møre og Romsdal 30		Province Nord-Trøndelag 26		Province Troms 26			
<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>			
Halden	24	Hof	22	Kvitsøy	29	Rindal	25	Lierne	24	Bardu	24		
Moss	24	Lardal	22	Karmøy	30	Strnadal	25	Meråker	25	Målselv	24		
Rygge	24	Nøtterøy	24	Utsira	30	Nesset	26	Røyrvik	25	Strofjord	24		
Råde	24	Sandefjord	24	Ølen	Municipality isn't in the Wind standard	Norddal	26	Snåsa	25	Gáivuona/Kåfjord	25		
Sarpsborg	24	Stokke	24	Province Hordaland 26		Stordal	26	Flatanger	29	Balsfjord	26		
Våler	24	Tønsberg	24	<i>Except Municipalitys:</i>		Stranda	26	Fosnes	29	Gratangen	26		
Fredrikstad	26	Larvik	25	Etne	24	Sunndal	27	Leka	29	Ibestad	26		
Hvaler	27	Tjøme	26	Etne near the Folgefonna	24	Gjemnes	28	Leka on the mainland	29	Lavangen	26		
Province Akershus 22		Province Telemark 22		Granvin	24	Rauma	28	Nærøy	29	Lyngen	26		
<i>Except Municipality:</i>		<i>Except Municipalitys:</i>		Kvam	24	Sykkylven	28	Vikna	30	Salangen	26		
Vestby	24	Bamble	23	Modalen	24	Tingvoll	28	Province Nordland 29		Skånland	26		
Province Oslo 22		Porsgrunn	23	Samnanger	24	Volda	28	<i>Except Municipalitys:</i>		Sørreisa	26		
Province Hedmark 22		Fyresdal	24	Ulvik	24	Ørskog	28	Beiarn	26	Dyrøy	27		
<i>Except Municipalitys:</i>		Kragerø	24	Vaksdal	24	Ørsta	28	Evenes	26	Harstad	27		
Alvdal	24	Tinn	24	Voss	24	Eide	29	Fauske	26	Lenvik	27		
Folldal	24	Tokke	24	Osterøy	25	Halsa	29	Grane	26	Nordreisa	27		
Folldal near Trøndelag	24	Vinje	24	Radøy	27	Hareid	29	Hattfjelldal	26	Tranøy	27		
Os	24	Vinje near Rogaland/Hordaland	24	Austevoll	28	Molde	29	Hemnes	26	Tromsø	27		
Os near Trøndelag	24	Province Aust-Agder 24		Austrheim	28	Skodje	29	Rana	26	Bjarkøy	28		
Tolga	24	<i>Except Municipalitys:</i>		Bømlo	28	Sula	29	Saltdal	26	Kvænangen	28		
Tynset	24	Arendal	26	Fjell	28	Ålesund	29	Sørfold	26	Skjervøy	28		
Tynset Kvikne	24	Grimstad	26	Sund	28	Sandøy	31	Ballangen	27	Karlsøy	29		
Tynset near Trøndelag	24	Lillesand	26	Øygarden	29	Frei	Municipality isn't in the Wind standard	Tjeldsund	27	Berg	30		
Province Oppland 22		Risør	26	Fedje	30	Tustna		Municipality isn't in the Wind standard	Tysfjord	27	Torsken	30	
<i>Except Municipalitys:</i>		Tvedestrand	26	Province Sogn og Fjordane 24		<i>Except Municipalitys:</i>			Hamarøy	28	Province Finnmark 29		
Vågå	23	Province Vest-Agder 24		<i>Except Municipalitys:</i>		Province Sør-Trøndelag 25			Narvik	28	<i>Except Municipalitys:</i>		
Dovre	24	<i>Except Municipalitys:</i>		Aurland	25	<i>Except Municipalitys:</i>			Sortland	28	Kárájoga / Karasjok	24	
Dovre near Trøndelag	24	Flekkefjord	26	Eid	26	Malvik	26		Vefsn	28	Guovdageaidnu / Kautokeino	24	
Lom	24	Flekkefjord near Rogaland	26	Fjaler	26	Oppdal	26	Vefsn along the fjord	28	Deanu/Tana	27		
Lom near Sogn og Fj.	24	Kristiansand	26	Førde	26	Førde near the Jostedalsbreen	26	Vefsn Mosjøen	28	Porsanger	27		
Vang	24	Lyngdal	26	Gaular	26	Trondheim	26	Vevelstad	28	Unjárgga / Nesseby	27		
Vang near Sogn og Fj.	24	Søgne	26	Gloppen	26	Agdenes	27	Alstahaug	30	Alta	28		
Lesja	25	Farsund	28	Gloppen near the Ålfotbreen	26	Rissa	27	Bindal	30	Berlevåg	30		
Lesja near Trøndelag/		Lindesnes	28	and Jostedalsbreen	26	Snillfjord	27	Bodø	30	Gamvik	30		
Møre og Romsdal	25	Mandal	28	Horindal	26	Hemne	28	Dønna	30	Hasvik	30		
Skjåk	25	Province Rogaland 26		Hyllestad	26	Bjugn	29	Flakstad	30	Måsøy	30		
Skjåk near Sogn og Fj./		<i>Except Municipalitys:</i>		Høyanger	26	Osen	29	Herøy	30	Nordkapp	30		
Møre og Romsdal	25	Hjelmeland	24	Lærdal	26	Roan	29	Leirfjord	30	Vardø	30		
Province Buskerud 22		Sauda	24	Naustdal	26	Åfjord	29	Lurøy	30	Province Svalbard 30			
<i>Except Municipalitys:</i>		Suldal	24	Askvoll	28	Frøya	30	Lurøy on the mainland	30	Province Svalbard 30			
Hemsedal	24	Vindafjord	24	Flora	28	Hitra	30	Nesna	30				
Hemsedal near Sogn og Fj.	24	Eigersund	27	Gulen	28	Ørland	30	Sømna	30				
Hol	24	Sokndal	27	Bremanger	29	<i>Except Municipalitys:</i>		Vega	30				
Hol near Hordeland /		Bokn	28	Bremanger near the Ålfotbreen	29	<i>Except Municipalitys:</i>		Vestvågøy	30				
Sogn og Fjordane	24	Haugesund	28	Solund	29	<i>Except Municipalitys:</i>		Andøy	31				
Hurum	24	Klepp	28	Selje	31	<i>Except Municipalitys:</i>		Moskenes	31				
Nore og Uvdal	24	Randaberg	28	Vågsøy	31	<i>Except Municipalitys:</i>		Røst	31				
Nore og Uvdal near Hordeland	24	Rennesøy	28	<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		Træna	31				
Ål	24	Sola	28	<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		Værøy	31				
Ål near Sogn og Fj.	24	Time	28	<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		Skjerstad	31				
		Hå	29	<i>Except Municipalitys:</i>		<i>Except Municipalitys:</i>		Municipality isn't in the Wind standard					

Required ballast | Sweden

General

The ValkQuattro® mounting system must be reinforced by means of tiles, which must be placed on the indicated ballast foundations. In **three steps** you can easily calculate the required ballast;

- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg



Surrounding parameters

Panelsize	Length approx. 1650 mm - Width max 1005 mm
	Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Town
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	0	0	0	0	0	kg
	0	0	0	0	0	tiles
23 m/s	0	0	0	0	0	kg
	0	0	0	0	0	tiles
24 m/s	0	0	0	0	7	kg
	0	0	0	0	1	tiles
25 m/s	0	0	0	2	22	kg
	0	0	0	0,5	2,5	tiles
26 m/s	0	0	0	16	43	kg
	0	0	0	2	5	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations

Note 2: The max. of 32 tiles can be placed for extra ballast (228 kg)

Windmap Sweden



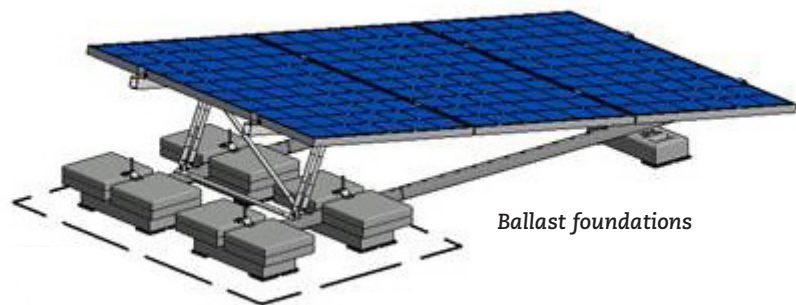
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Required ballast | Finland

General

The ValkQuattro® mounting system must be reinforced by means of tiles, which must be placed on the indicated ballast foundations. In **three steps** you can easily calculate the required ballast;

- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg



Surrounding parameters

Panel size	Length approx. 1650 mm - Width max 1005 mm
Position	Height 28-50 mm - Weight approx. 19 kg
Terrain category	Middle zone roof
Roofing materials	Town
Tile size*	Bitumen
Flat roof	30 x 30 x 4,5 cm á 9 kg
	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
21 m/s	0	0	0	0	5	kg
	0	0	0	2	24	tiles
22 m/s	0	0	0	2	24	kg
	0	0	0	0,5	3	tiles
26 m/s	55	55	55	80	111	kg
	6,5	6,5	6,5	9	12,5	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations.

Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Wind area Finland

- Mainland across the country = 21 m/s
- Seabed:
Open sea, scattered islands on the open sea = 22 m/s
- In Lapland: at the **top** of the mountains = 26 m/s
- In Lapland: at the **bottom** of the mountains = 21 m/s

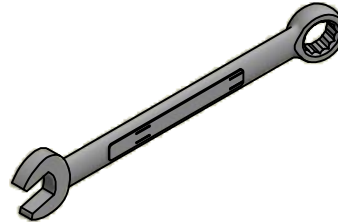
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Recommended installation tools

ValkQuattro



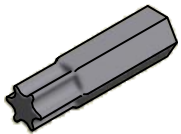
Cordless drill
(for socket 13 and bit T-30)



Wrench 13



Socket 13



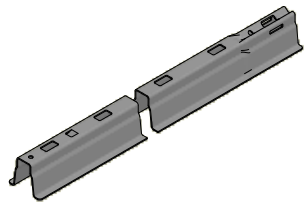
Torx bit T-30



Measuring tape

Required materials

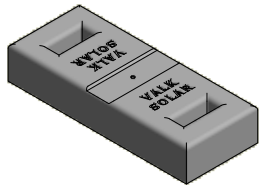
ValkQuattro



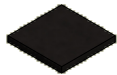
Roof carrier profile 2000mm (741802000)
Roof carrier profile 1600mm (741801600)
Installation: Page 01



Coupling set (774221)
Installation: Page 01



Concrete mass block (750520)
Installation: Page 01



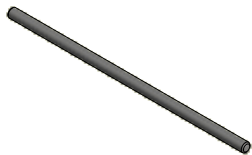
Rubber tile carrier (729610)
Installation: Page 01



SS bolt M8x65 (774065)
Installation: Page 01



SS washer M8 125A (774008)
Installation: Page 01



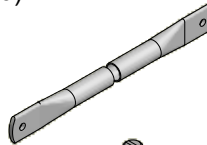
Threaded rod M8x220 (7479740)
Installation: Page 01



SS flange nut M8 (774006)
Installation: Page 01/03/04/05/06



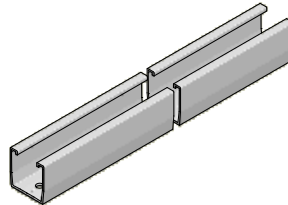
A-frame connector (724420)
Installation: Page 02



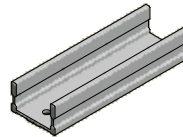
Alu. support (G13032208250000)
Installation: Page 03



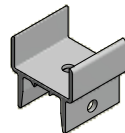
Hammerheadbolt M8x20 (774220)
Installation: Page 03



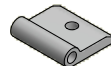
Alu. profile 2100mm (7272100)
Alu. profile 1010mm (7271010)
Alu. Extension profile (757050)
Installation: Page 04



Alu. profile coupling (004850)
Installation: Page 04



Alu. hinge 50mm (724450)
Installation: Page 04



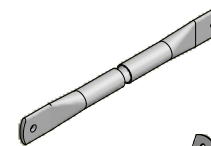
A-frame connector (724414)
Installation: Page 04



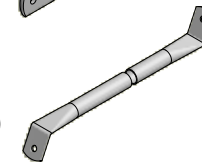
SS bolt M8x20 (774020)
Installation: Page 04



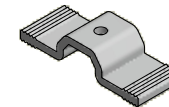
SS bolt M8x80 (774081)
Installation: Page 04



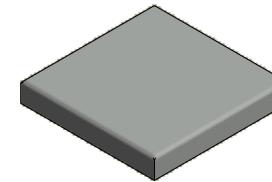
Alu. support (G13057703800000)
Alu. support (G13057705550000)
Installation: Page 05



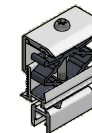
Alu. support (G13032208656565)
Alu. support (G13032209535757)
Installation: Page 05



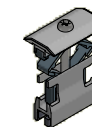
Alu. tile clamp (725140)
Installation: Page 06



Ballast tile (7506303045)
Installation: Page 06
Not included in kit



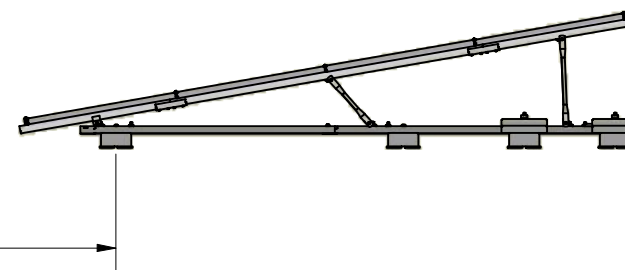
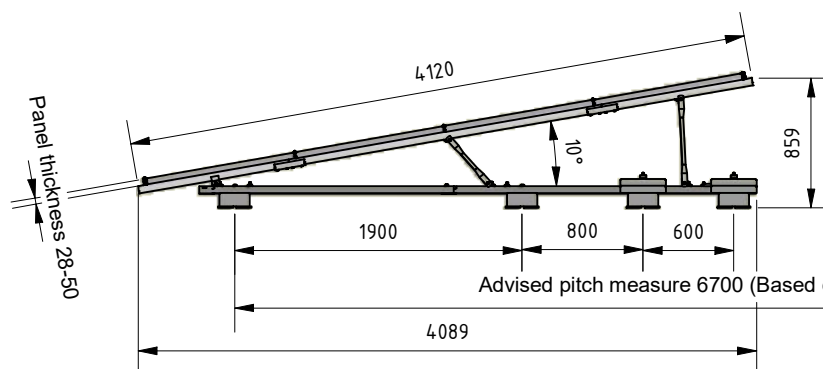
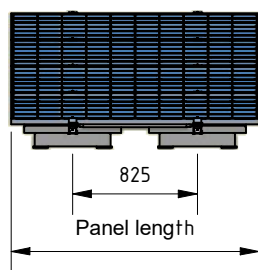
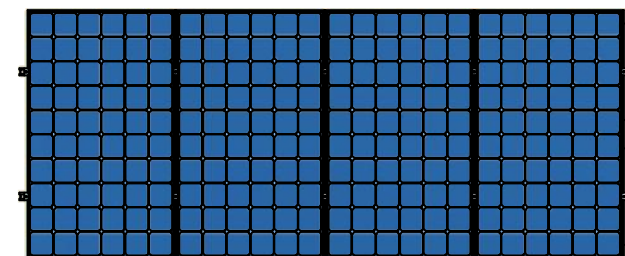
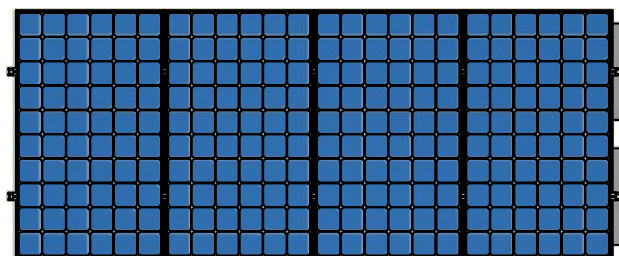
End clamp (721552)
Installation: Page 07



Panel clamp (721550)
Installation: Page 08

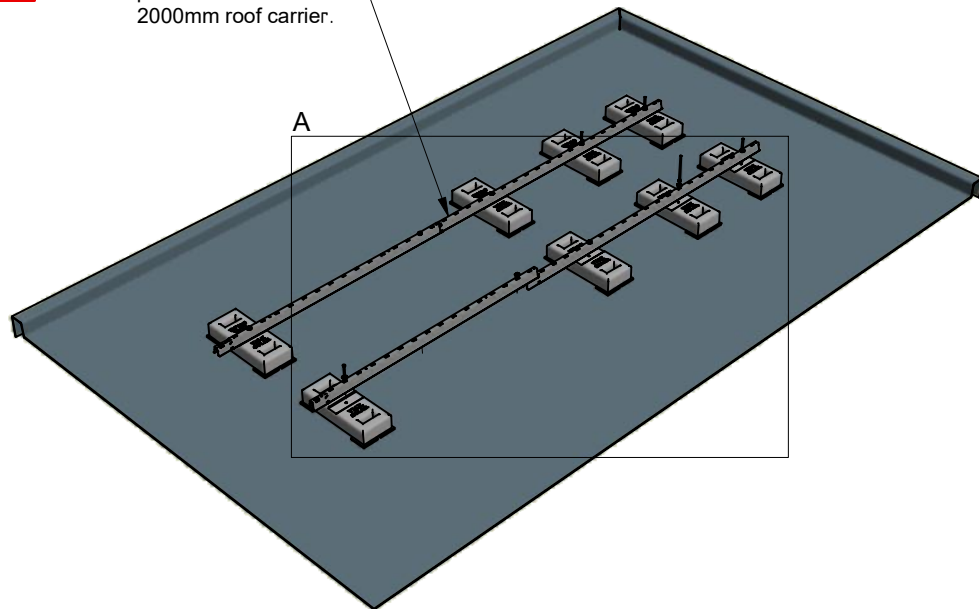


Cable clamp (732001)
Installation: Page 09

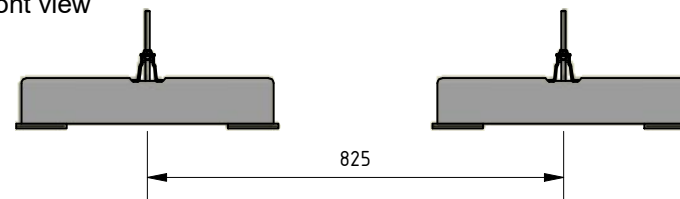




Attention! the 1600mm roof carrier is placed in front of the 2000mm roof carrier.



Front view

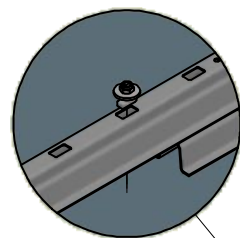


VAN DER VALK

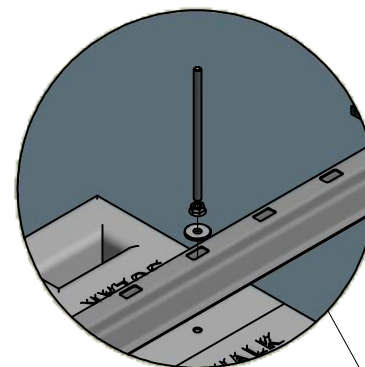


ValkHint!

1) Place the mass blocks on the right locations before mounting the roof carriers.



Detail A



2nd to last hole
Torque: 15 Nm

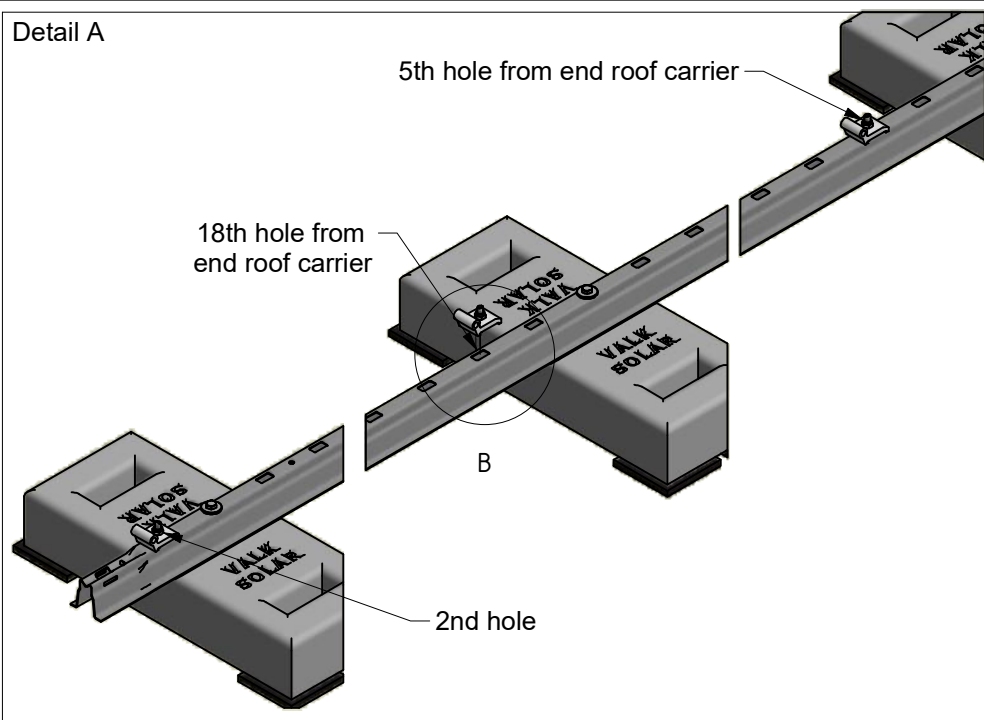
8th hole from end roof carrier
Torque: 15 Nm

16th hole from end roof carrier
Torque: 15 Nm

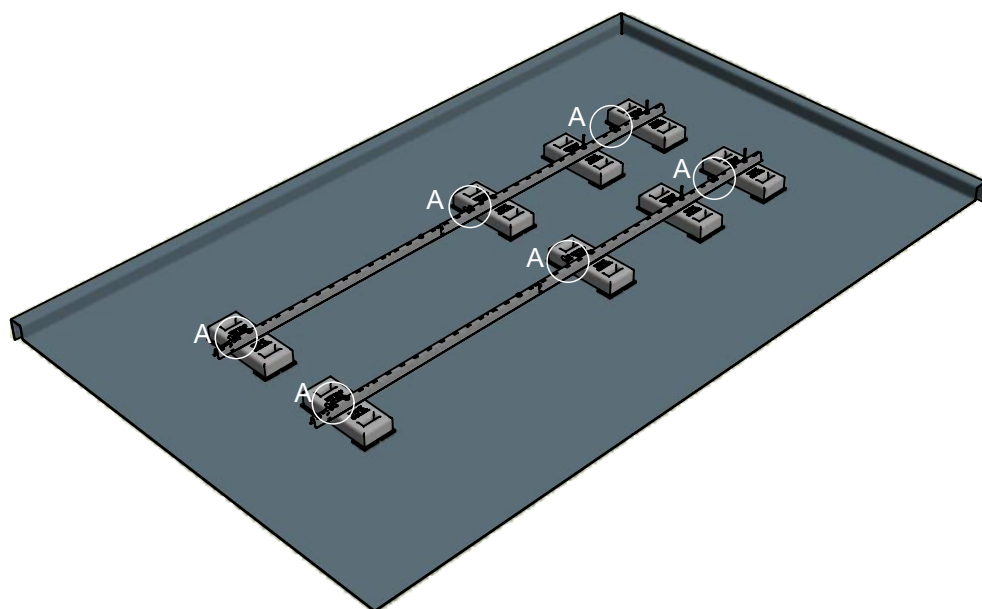
3rd hole
torque: 15 Nm

Place the mass block on the rubber tile carriers.

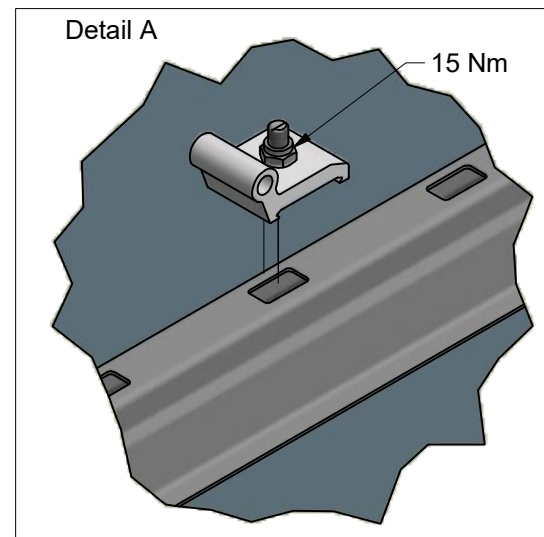
Detail A



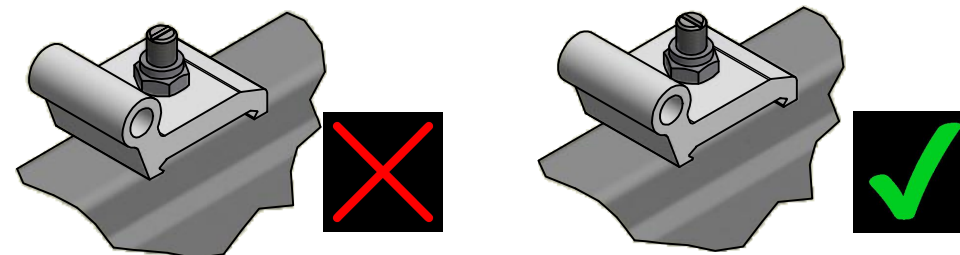
Mount the connector pieces to the roof carriers. Make sure they are placed as shown in the drawing.



Detail A

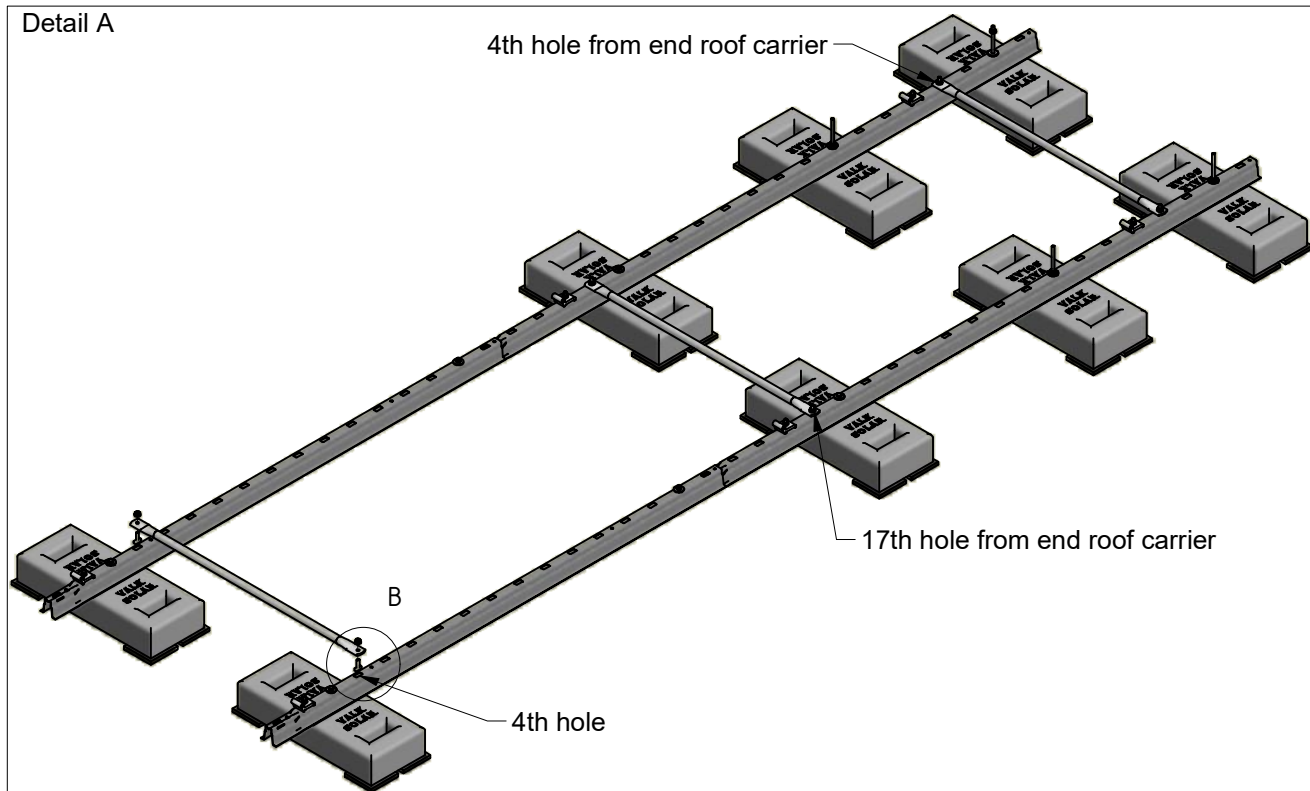


VAN DER VALK

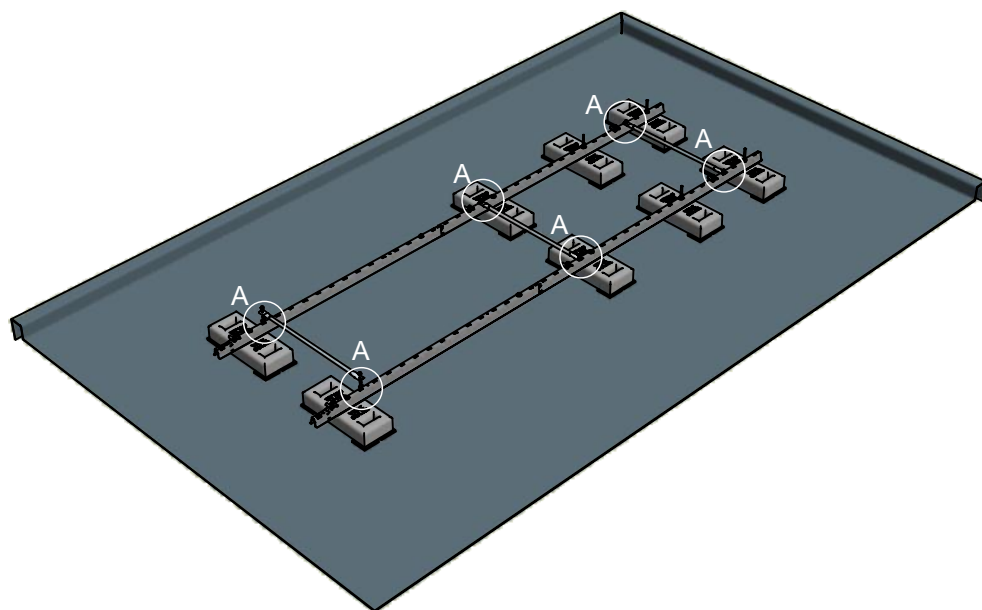


The groove on the bolt corresponds with the orientation of the bolt head!

Detail A



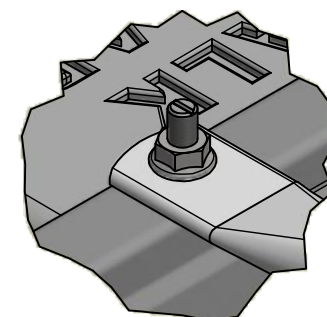
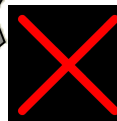
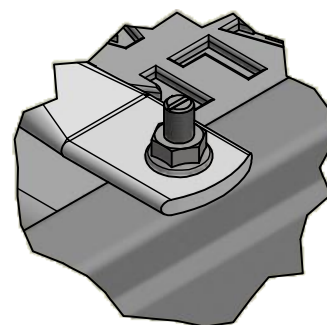
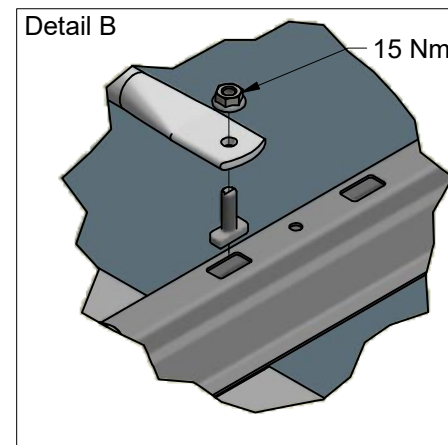
Mount the push rod to the roof carriers to connect the two rows.



VAN DER VALK

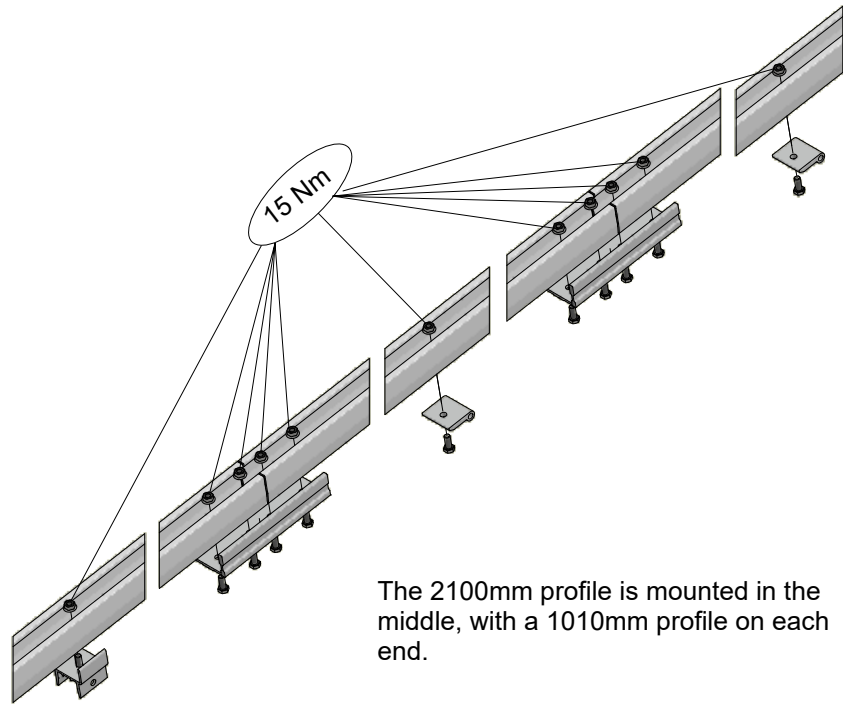


Detail B



The groove on the bolt corresponds with the orientation of the bolt head!

Detail A.1

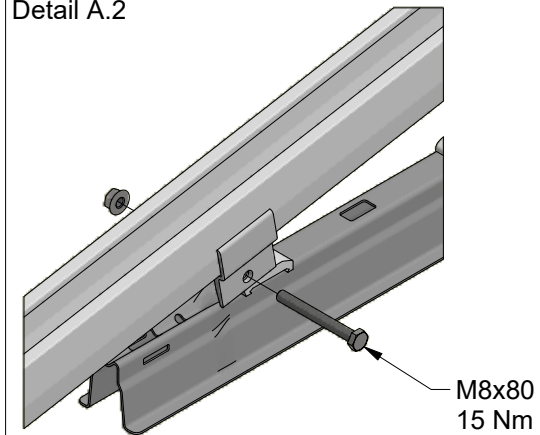


ValkHint!

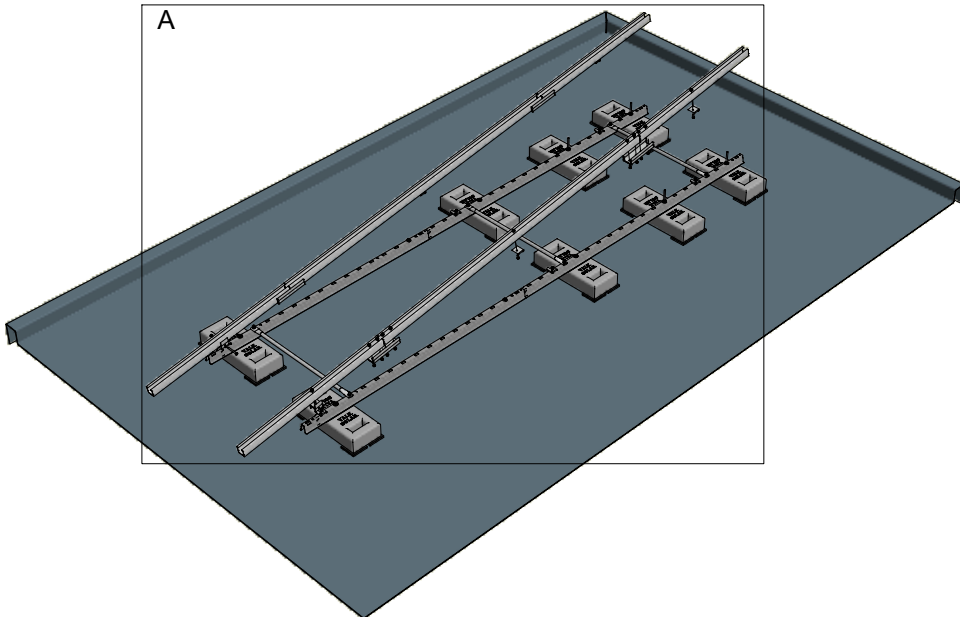
Create the aluminium profile with the connector pieces/couplings first. Then mount the profile to the roof carrier.



Detail A.2

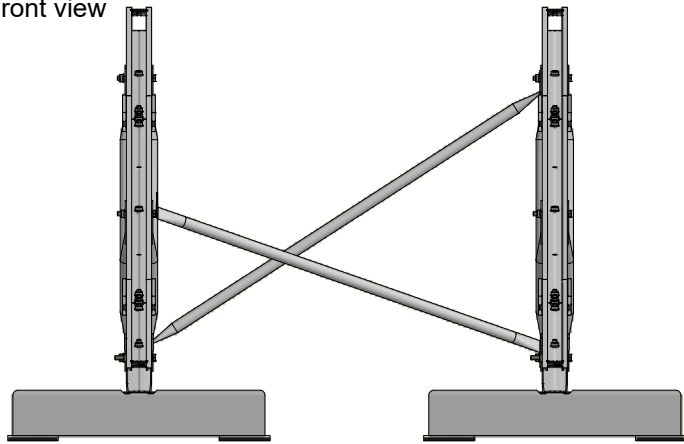


A



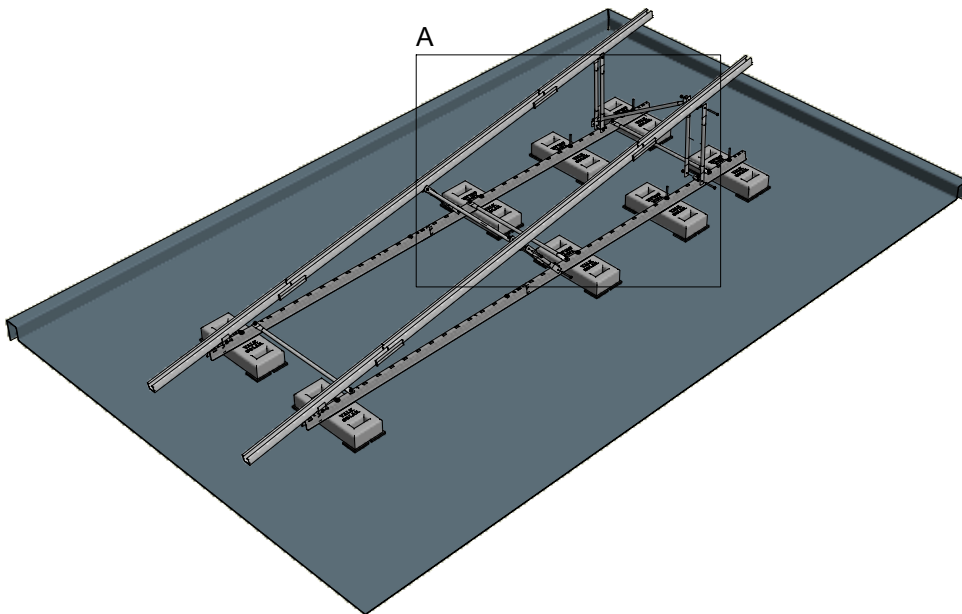


Front view

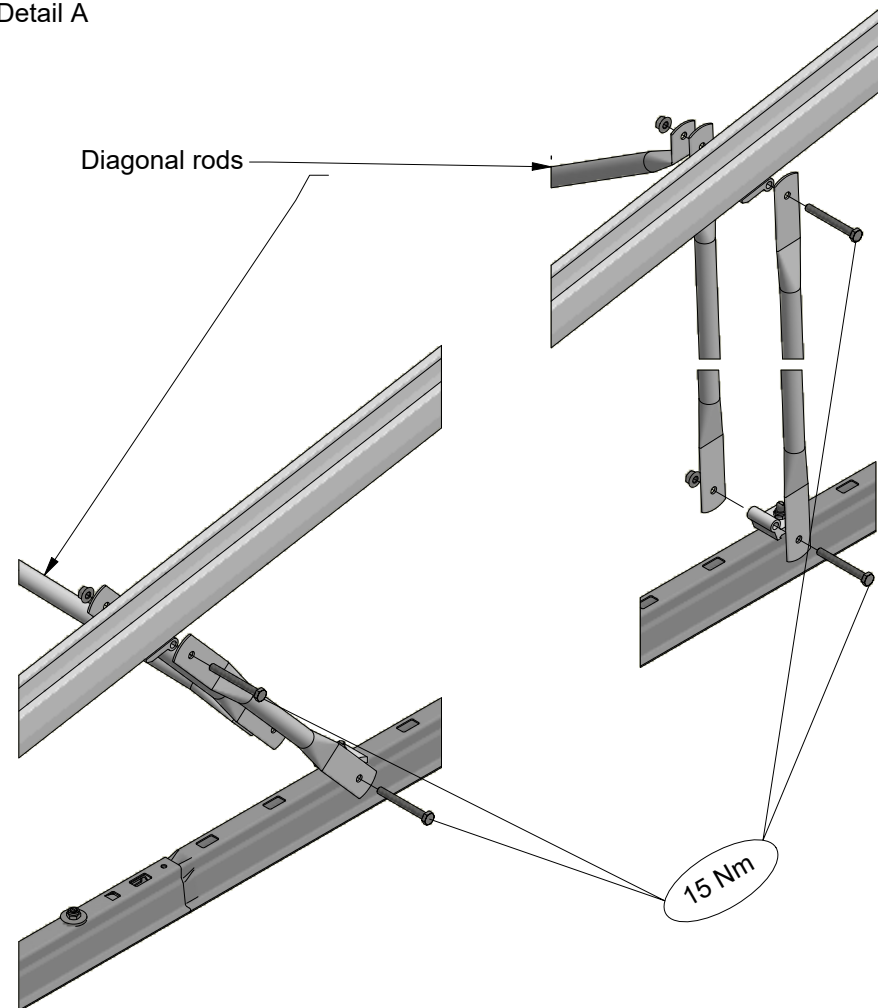


Make sure the diagonal push rods are mounted in opposite directions (crossed)

A

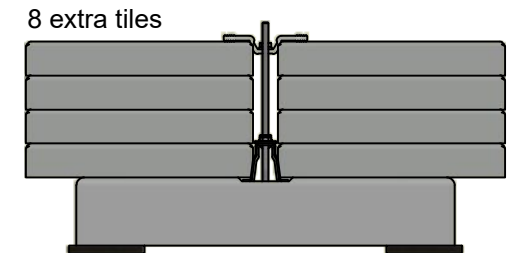
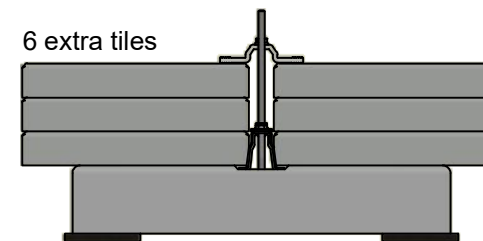
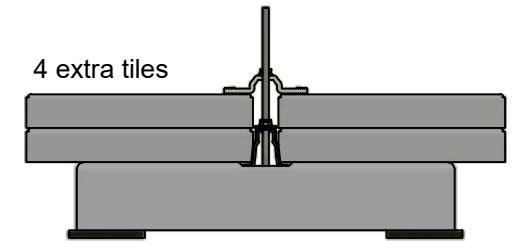
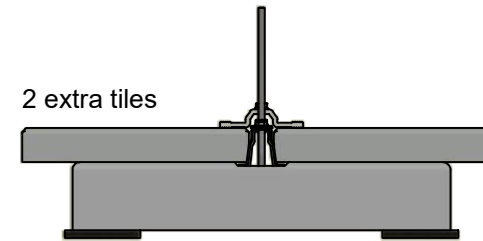
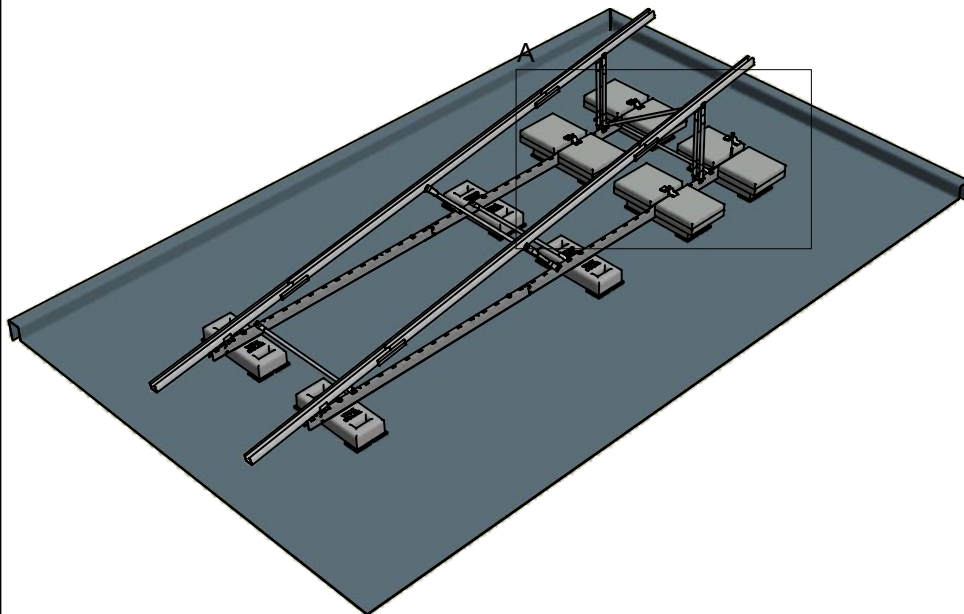
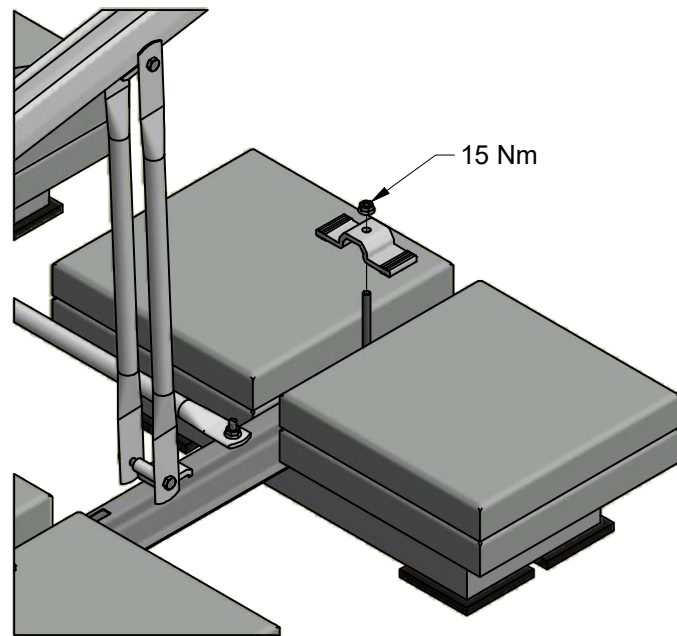


Detail A



Mount the push rods between the aluminium profile and the roof carrier.

Detail A



For the required number of tiles check the ballast tables in the front of this manual.

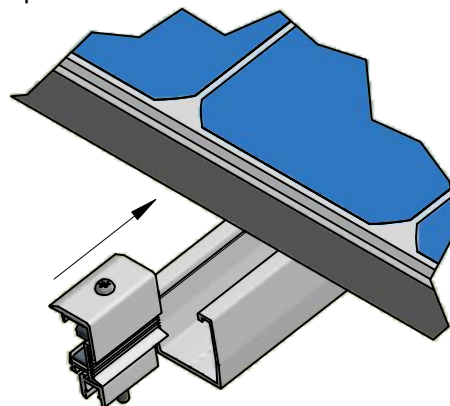


Step 1

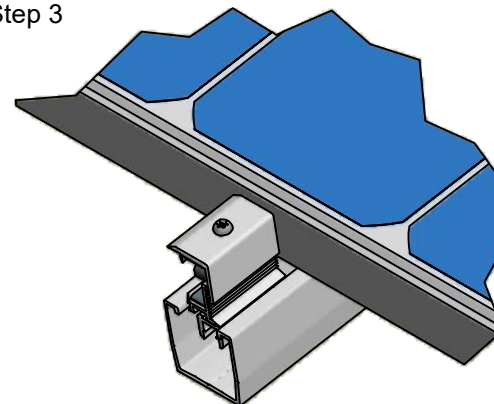


Take the end clamp out of its slot for an easier assembly.

Step 2

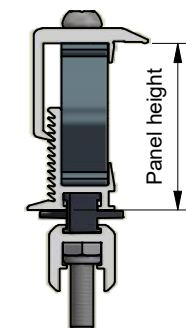


Step 3



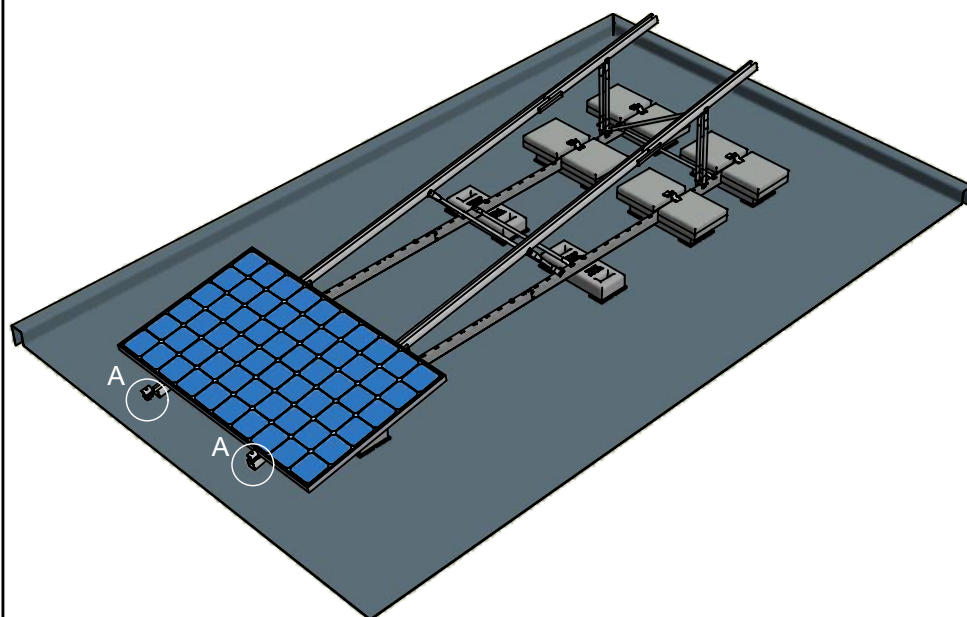
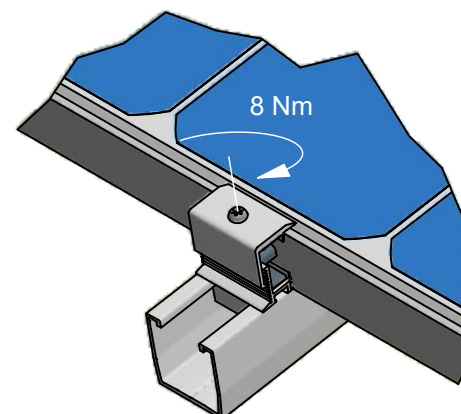
The end clamp can only be turned clockwise, so make sure the end clamp is placed the right way.

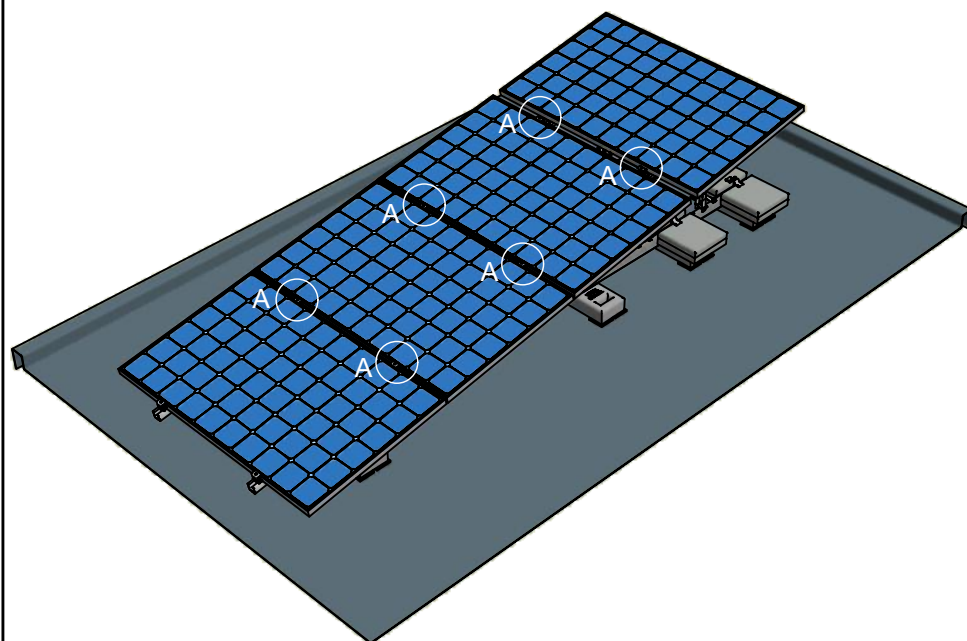
Step 4



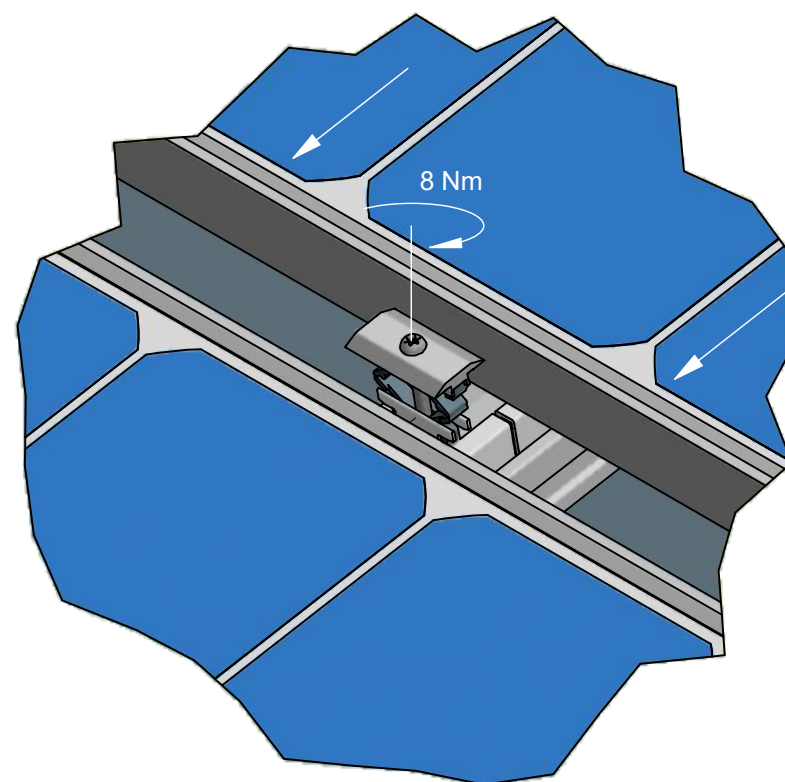
Put the end clamp in the right slot to continue the assembly.

Step 5

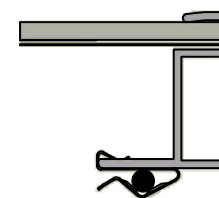
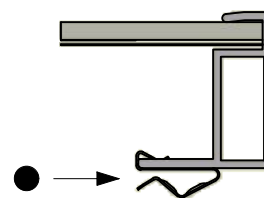
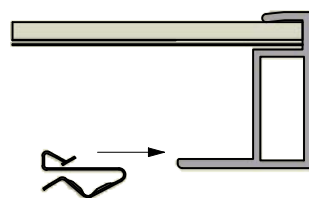




Detail A



Attention!! Do not forget to install the end clamps above the fourth panel! (same assembly as other end clamps, page 07.)



Mount cable clamp on the panel.

