

Installation manual

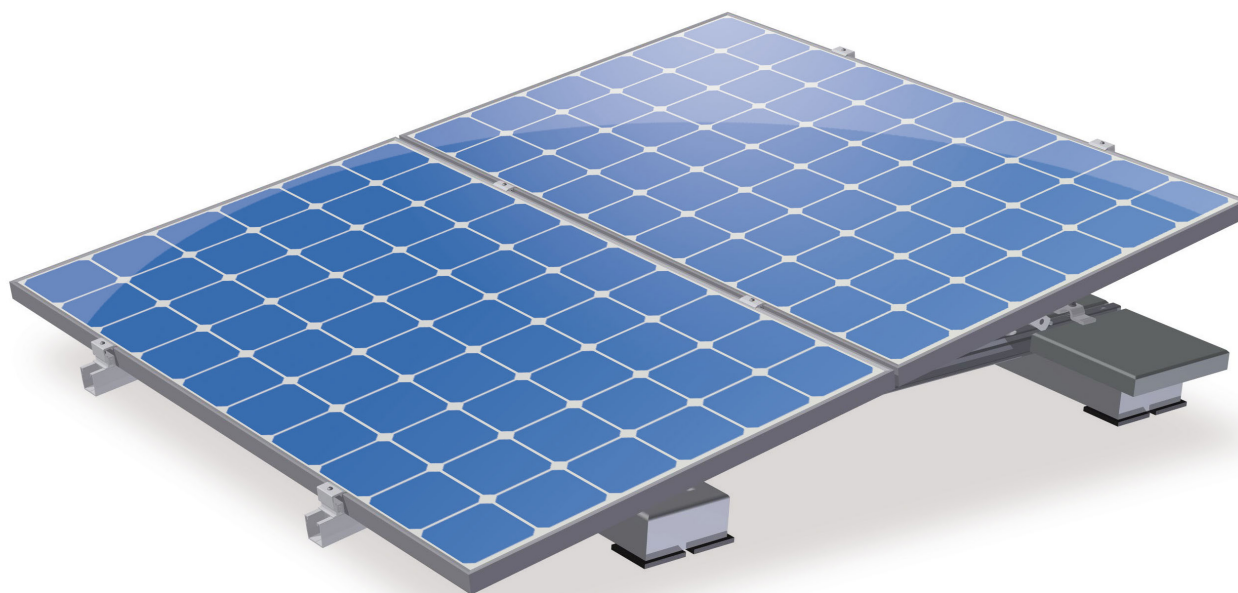
Use in combination with the project report of the ValkKITsplanner

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.

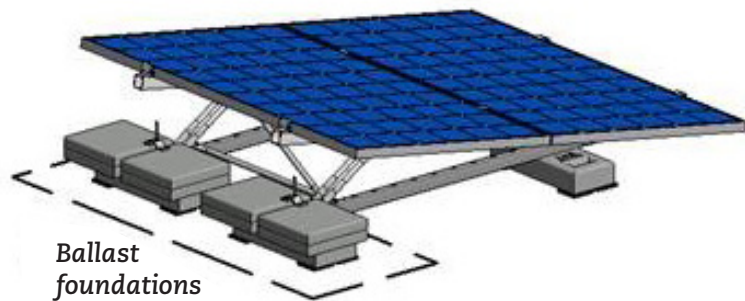
Van der Valk Solar Systems B.V. does not accept any liability for any direct and/or indirect consequences of any act (or omission) ensuing from the information in or the failure to observe the instruction provided in the project report and the installation manual and for possible incorrect results resulting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

Required ballast | The Netherlands

General

The ValkDouble® 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

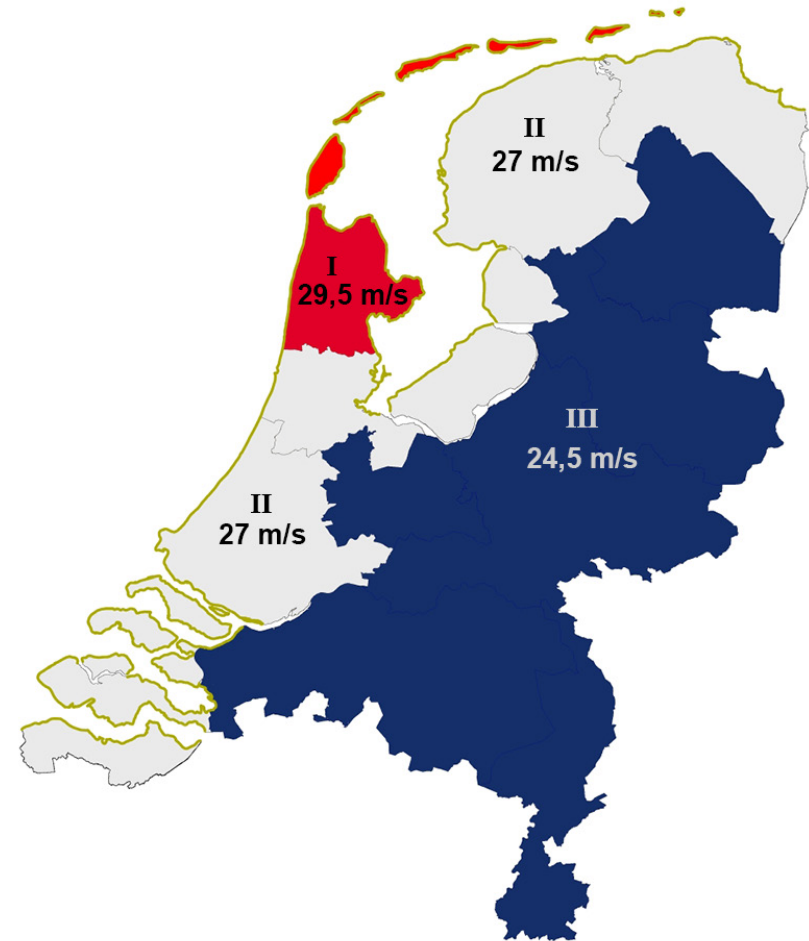
Panelsize	Length approx. 1650 mm - Width max 1005 mm
	Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Built environment
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
I (29,5 m/s)	101	101	130	164	191	kg
	11,5	11,5	14,5	na**	na**	tiles
II (27 m/s)	61	61	85	113	136	kg
	7	7	9,5	13	15,5	tiles
III (24,5 m/s)	37	37	49	68	87	kg
	4,5	4,5	5,5	8	10	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 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.

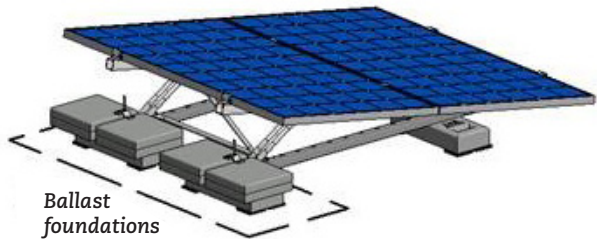
** Not available due to exceedance maximum number of tiles.

Required ballast | Belgium

General

The ValkDouble® 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

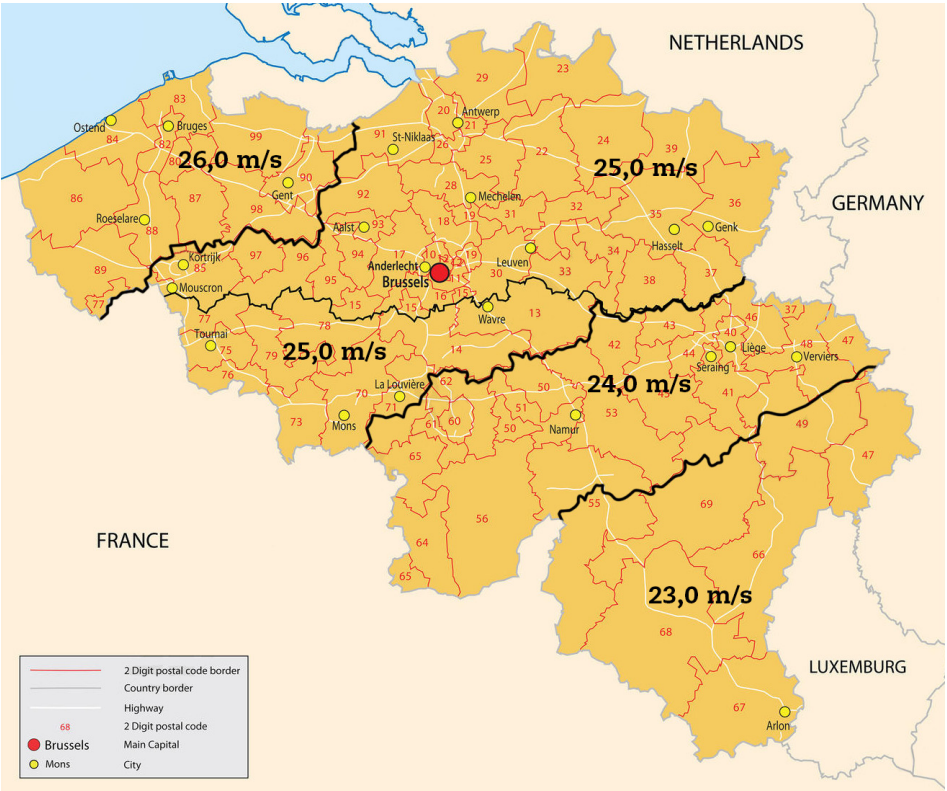
Panelsize	Length approx. 1650 mm - Width max 1005 mm
	Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Town
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
23 m/s	15	26	35	46	54	kg
	2	3	4	5,5	6	tiles
24 m/s	21	34	43	55	70	kg
	2,5	4	5	6,5	8	tiles
25 m/s	28	41	52	71	87	kg
	3,5	5	6	8	10	tiles
26 m/s	35	49	65	87	105	kg
	4	5,5	7,5	10	12	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 kg).

Windmap Belgium



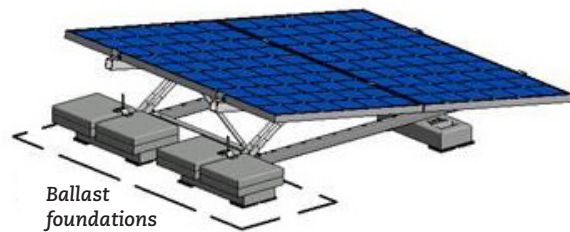
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Required ballast | Germany

General

The ValkDouble® 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

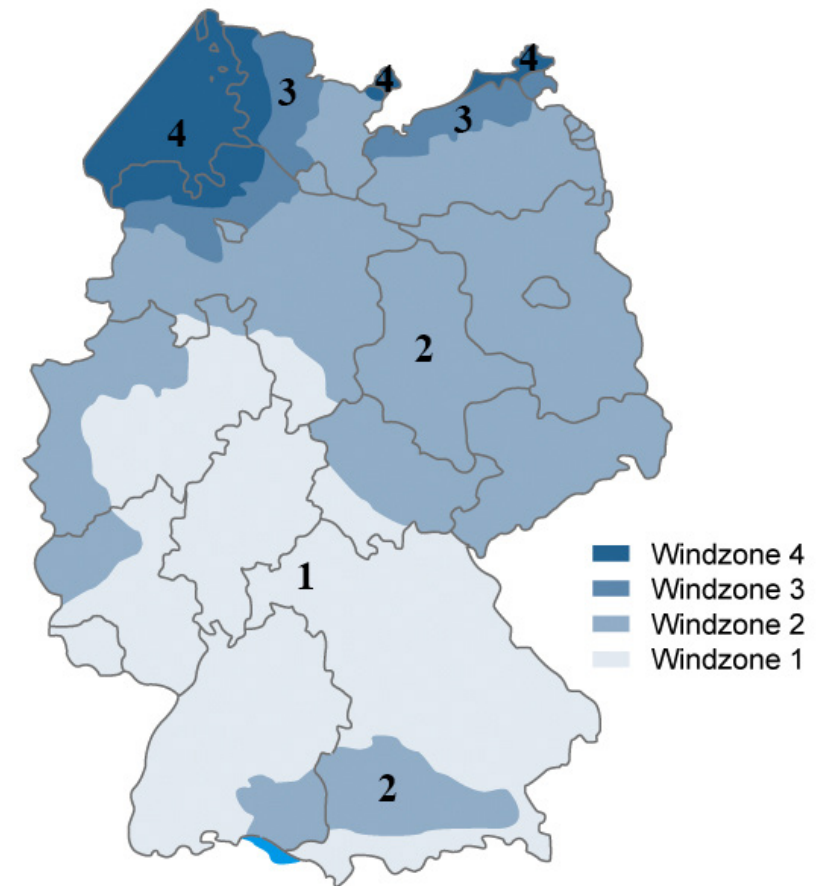
Panel size	Length approx. 1650 mm - Width max 1005 mm
	Height 28-50 mm - Weight approx. 19 kg
Position	Middle zone roof
Terrain category	Built environment
Height above sea level	350 m
(Excluding North German Lowland)	
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
1 (22,5 m/s)	16	16	16	16	16	kg
	2	2	2	2	2	tiles
2 (25 m/s)	33	33	33	33	33	kg
	4	4	4	4	4	tiles
3 (27,5 m/s)	52	52	52	52	52	kg
	6	6	6	6	6	tiles
4 (30 m/s)	84	84	84	84	84	kg
	9,5	9,5	9,5	9,5	9,5	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 kg).

Windmap Germany



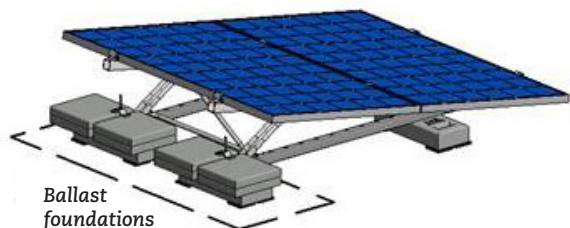
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Required ballast | United Kingdom

General

The ValkDouble® 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

Middle zone roof

Builded environment

Position

Terrain category

Height above sea level

50 m

Distance to coast line

5 km

Distance to city border

5 km

Roofing materials

Bitumen

Tile size*

30 x 30 x 4,5 cm á 9 kg

Flat roof

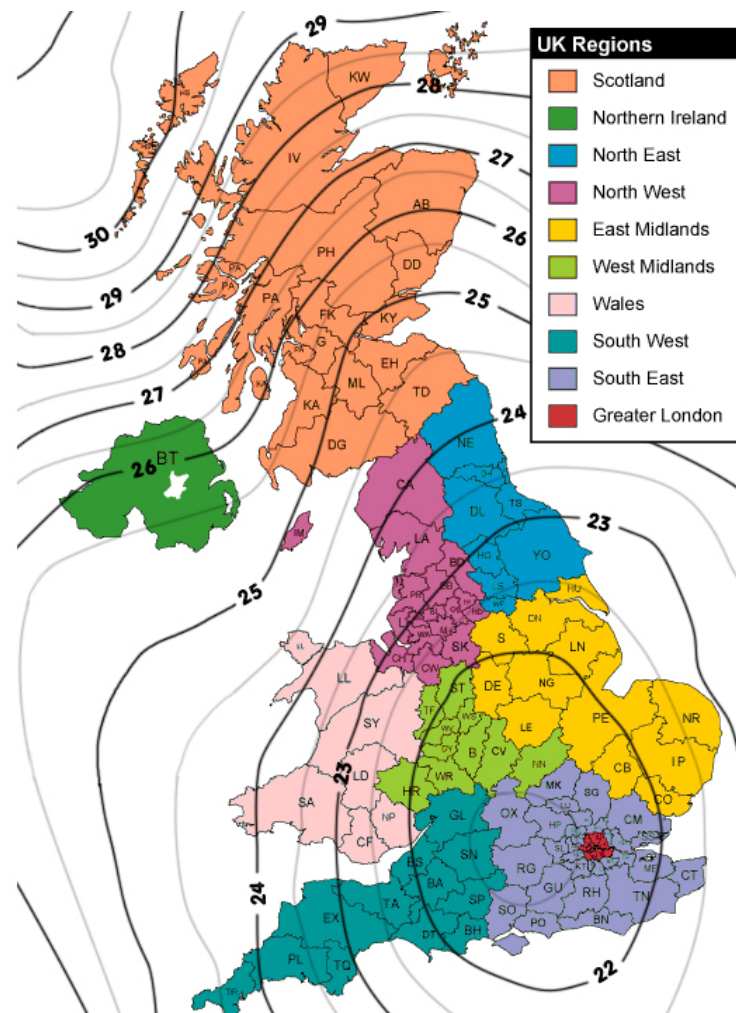
Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	38	59	72	111	111	kg
	4,5	7	8	12,5	12,5	tiles
23 m/s	47	77	91	134	134	kg
	5,5	9	10,5	15	15	tiles
24 m/s	57	95	111	157	157	kg
	6,5	11	12,5	na**	na**	tiles
25 m/s	73	115	131	181	181	kg
	8,5	13	15	na**	na**	tiles
26 m/s	90	134	152	207	207	kg
	10	15	na**	na**	na**	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 kg).

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.

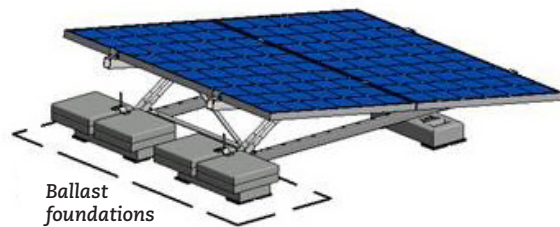
** Not available due to exceedance maximum number of tiles.

Required ballast | Ireland

General

The ValkDouble® 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)

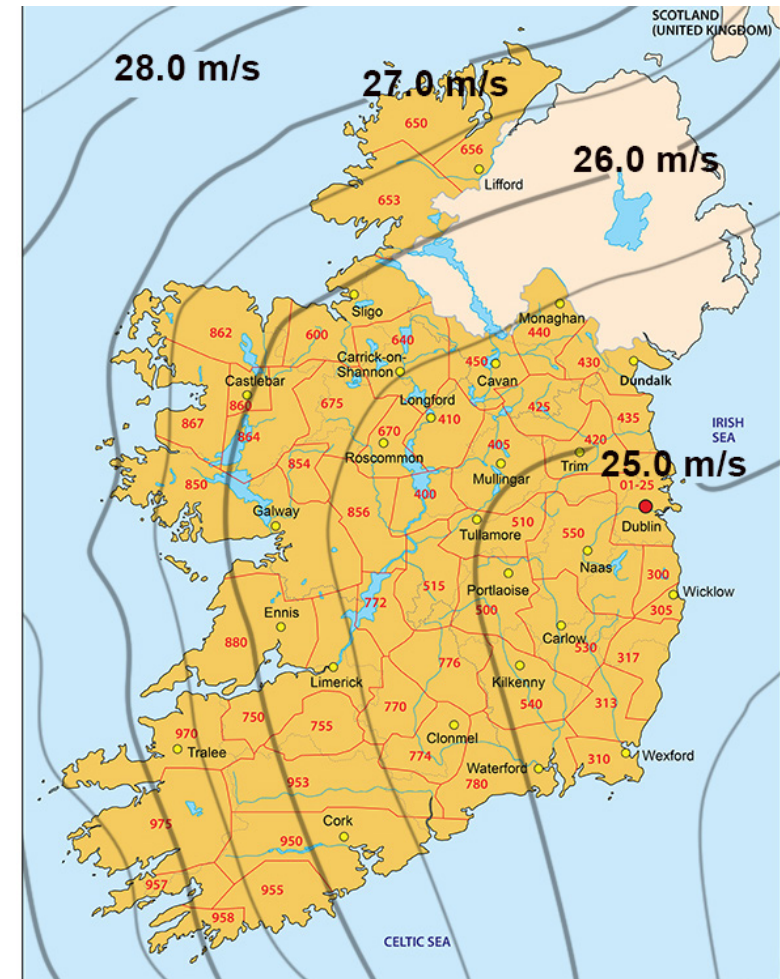
Roofing materials	Bitumen
Tile size*	30 x 30 x 4,5 cm á 9 kg
Flat roof	Max. 5% inclination

Height / Wind area	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
25 m/s	73	115	131	181	181	kg
	8,5	13	15	na**	na**	tiles
26 m/s	90	134	152	207	207	kg
	10	15	na**	na**	na**	tiles
27 m/s	107	155	175	233	233	kg
	12	na**	na**	na**	na**	tiles
28 m/s	125	177	197	261	261	kg
	14	na**	na**	na**	na**	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 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.

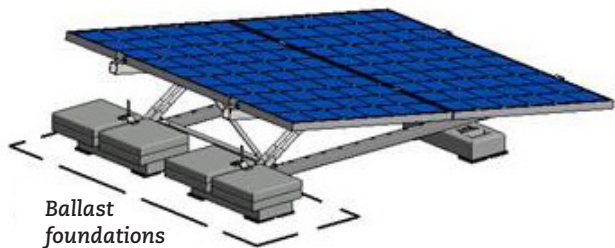
** Not available due to exceedance maximum number of tiles.

Required ballast | Norway

General

The ValkDouble® 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	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	25	25	25	25	25	kg
	3	3	3	3	3	tiles
25 m/s	49	49	49	49	49	kg
	5,5	5,5	5,5	5,5	5,5	tiles
27 m/s	74	74	74	74	74	kg
	8,5	8,5	8,5	8,5	8,5	tiles
29 m/s	106	106	106	106	106	kg
	12	12	12	12	12	tiles
31 m/s	138	139	139	139	139	kg
	15,5	15,5	15,5	15,5	15,5	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 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

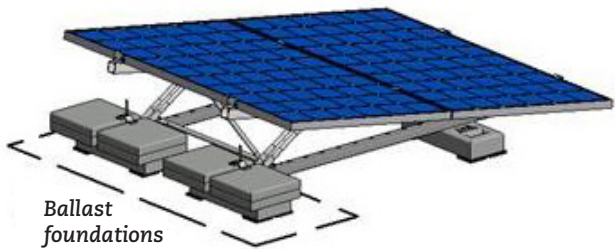
m/s		m/s		m/s		m/s		m/s		m/s	
Province Østfold 22		Province Vestfold 23		Kvitsøy 29		Province Møre og Romsdal 30		Province Nord-Trøndelag 26		Province Troms 26	
Except Municipalitys:		Except Municipalitys:		Karmøy 30		Except Municipalitys:		Except Municipalitys:		Except Municipalitys:	
Halden	24	Hof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

Required ballast | Sweden

General

The ValkDouble® 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	2	9	kg
	0	0	0	0,5	1	tiles
23 m/s	0	0	0	8	15	kg
	0	0	0	1	2	tiles
24 m/s	0	0	1	13	22	kg
	0	0	0,5	1,5	2,5	tiles
25 m/s	0	0	6	12	28	kg
	0	0	1	1,5	3,5	tiles
26 m/s	0	0	11	25	35	kg
	0	0	1,5	3	4	tiles

Note 1: The extra ballast must be equally divided over the ballast foundations.
Note 2: The max. of 16 tiles can be placed for extra ballast (144 kg).

Windmap Sweden



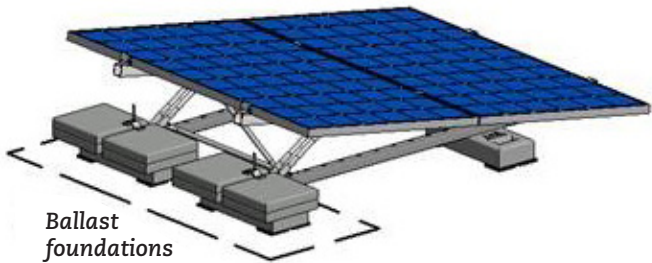
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Required ballast | Finland

General

The ValkDouble® 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	
21 m/s	0	0	9	16	24	kg
	0	0	1	2	3	tiles
22 m/s	0	0	15	23	32	kg
	0	0	2	3	4	tiles
26 m/s	44	44	44	54	74	kg
	5	5	5	6	8,5	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 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

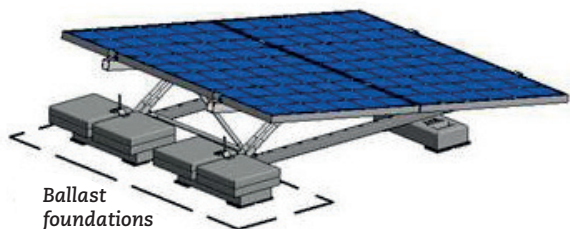
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Required ballast | Poland

General

The ValkDouble® 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	Built environment
Roofing materials	250 m
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	
1	31	39	45	53	63	kg
	3,5	4,5	5	6	7	tiles
2	72	91	105	124	139	kg
	8	10,5	12	14	15,5	tiles
3	31	39	45	53	63	kg
	3,5	4,5	5	6	7	tiles

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

Note 2: The max. of 16 tiles can be placed for extra ballast (144 kg).

Windmap Poland



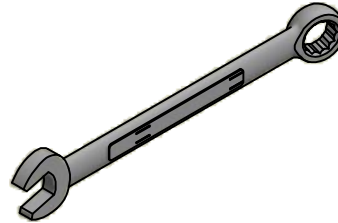
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

Recommended installation tools

ValkDouble



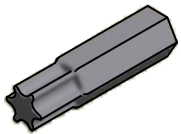
Cordless drill
(for socket 13 and bit T-30)



Wrench 13



Socket 13



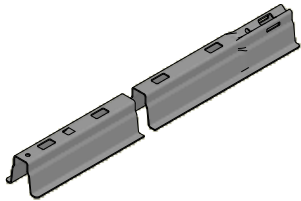
Torx bit T-30



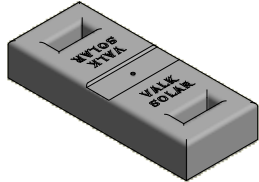
Measuring tape

Required materials

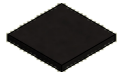
ValkDouble



Roof carrier profile (741801600)
Installation: Page 01



Concrete mass block (750520)
Installation: Page 01



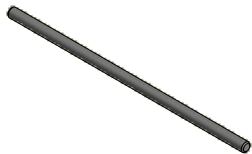
Rubber tile carrier (729610)
Installation: Page 01



SS bolt M8x65 (774065)
Installation: Page 01



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



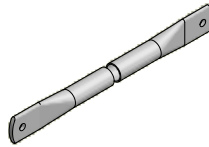
Threaded rod M8x220 (7479740)
Installation: Page 01



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



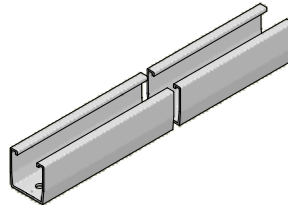
A-frame connector (724420)
Installation: Page 02



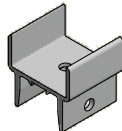
Alu. support (G13032208250000)
Installation: Page 03



Hammerheadbolt M8x20 (774220)
Installation: Page 03



Alu. profile 2100mm (7272100)
Alu. extension profile (757050)
Installation: Page 04



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



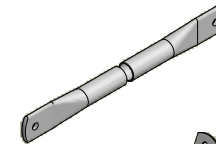
A-frame connector (724414)
Installation: Page 04



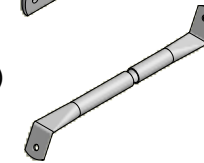
SS bolt M8x20 (774020)
Installation: Page 04



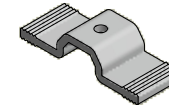
SS bolt M8x80 (774081)
Installation: Page 04



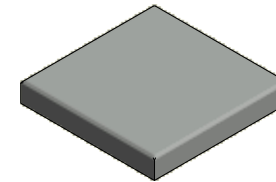
Alu. support (G13057703500000)
Installation: Page 05



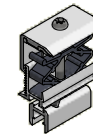
Alu. support (G13032208506565)
Installation: Page 05



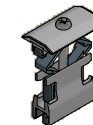
Alu. tile clamp (725140)
Installation: Page 06



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



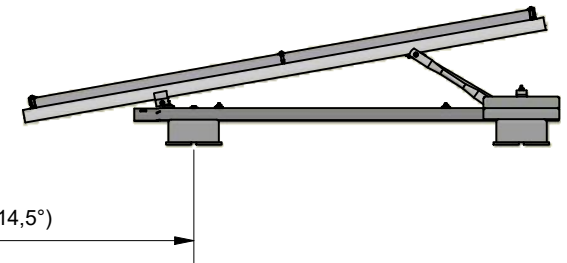
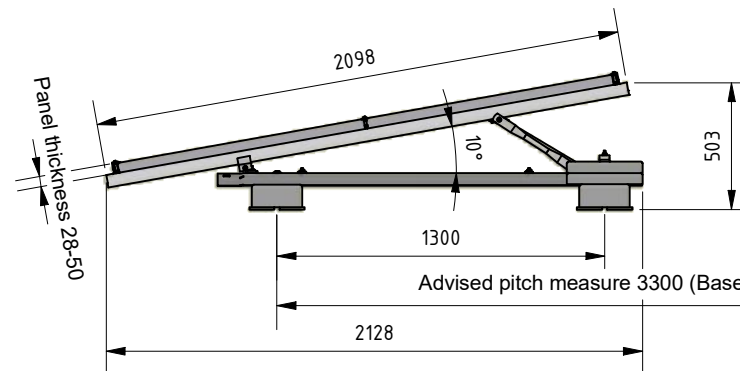
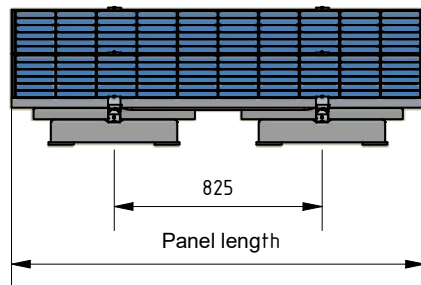
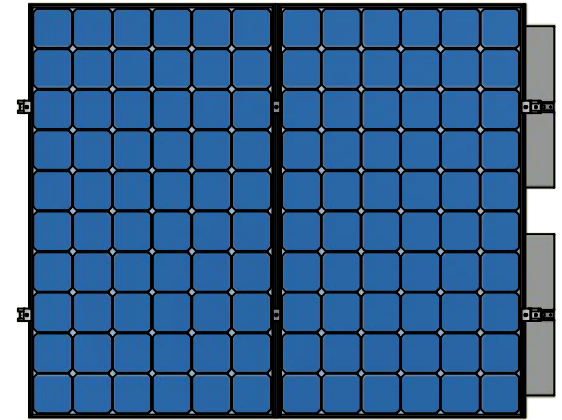
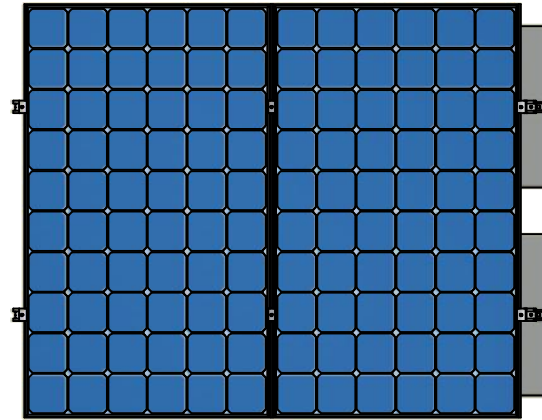
End clamp (721552)
Installation: Page 07



Panel clamp (721550)
Installation: Page 08



Cable clamp (732001)
Installation: Page 09



Valk Hint!

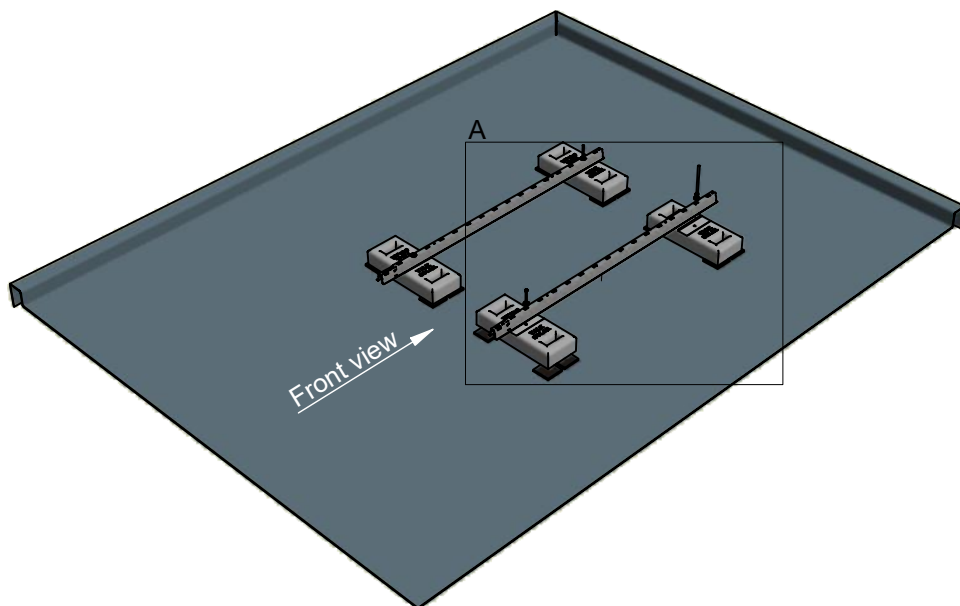
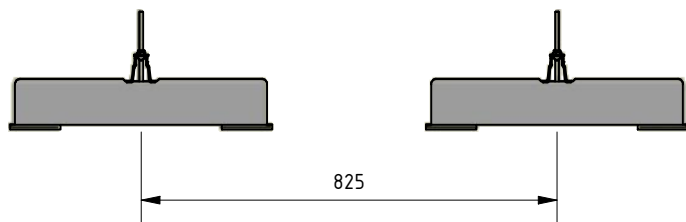
1) Place the mass block on the correct locations before mounting the roof carriers.

VAN DER VALK

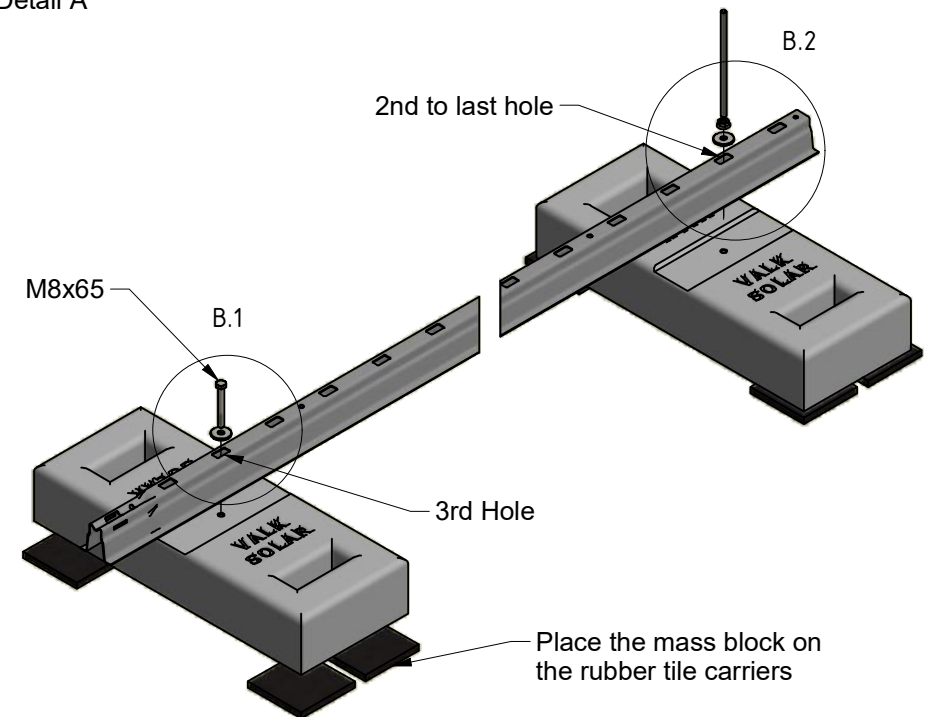


SOLAR SYSTEMS

Front view

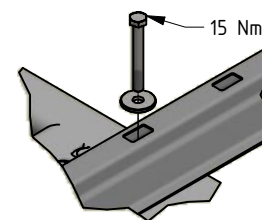


Detail A

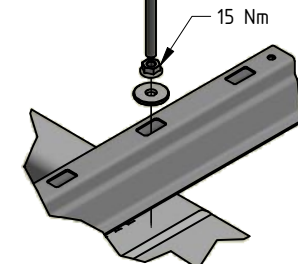


Mount the mass blocks to the roof carriers in the correct positions.

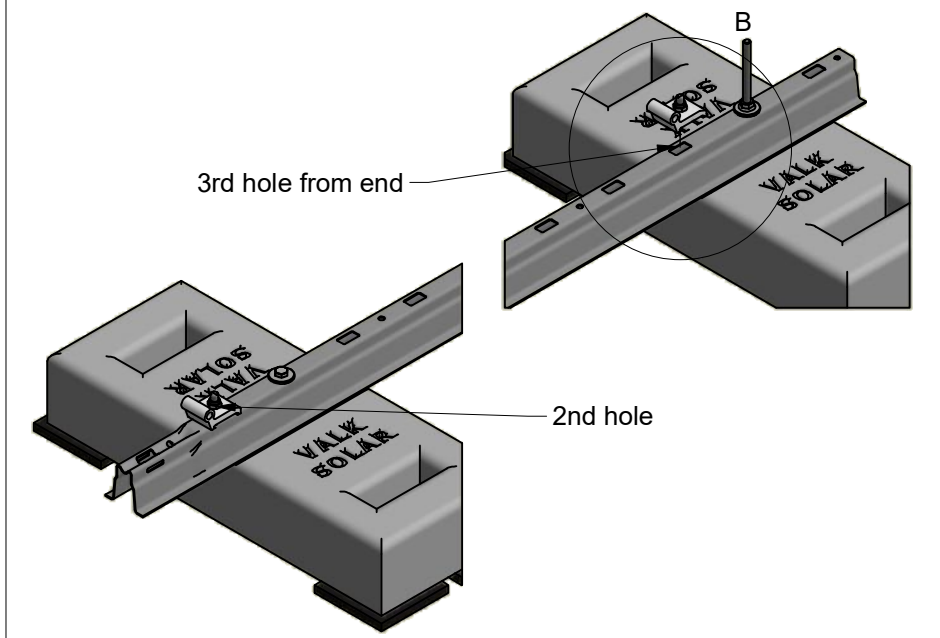
Detail B.1



Detail B.2

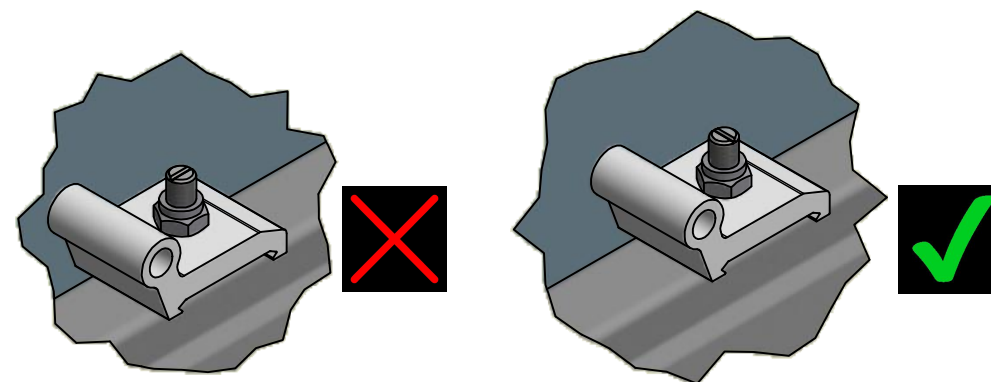
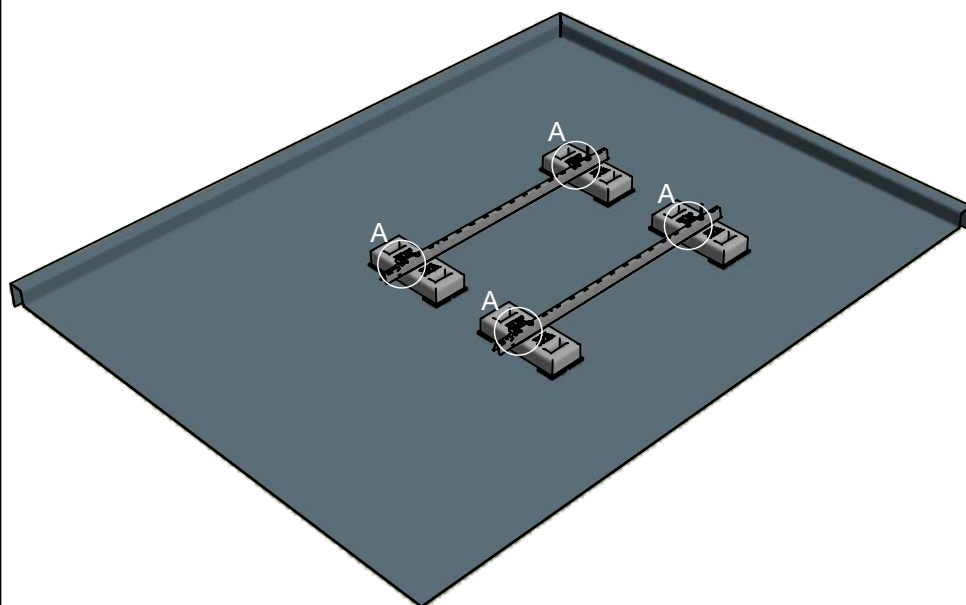
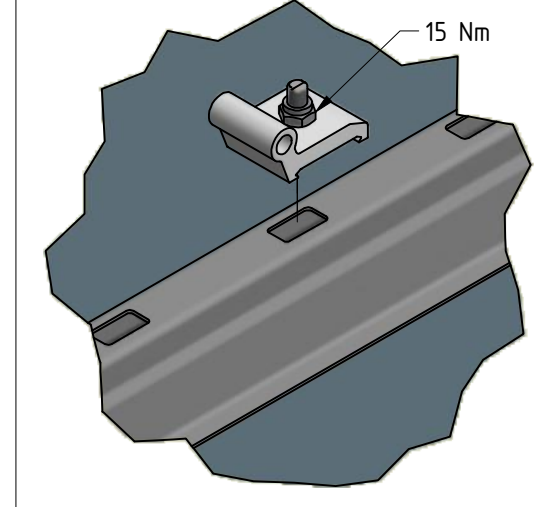


Detail A



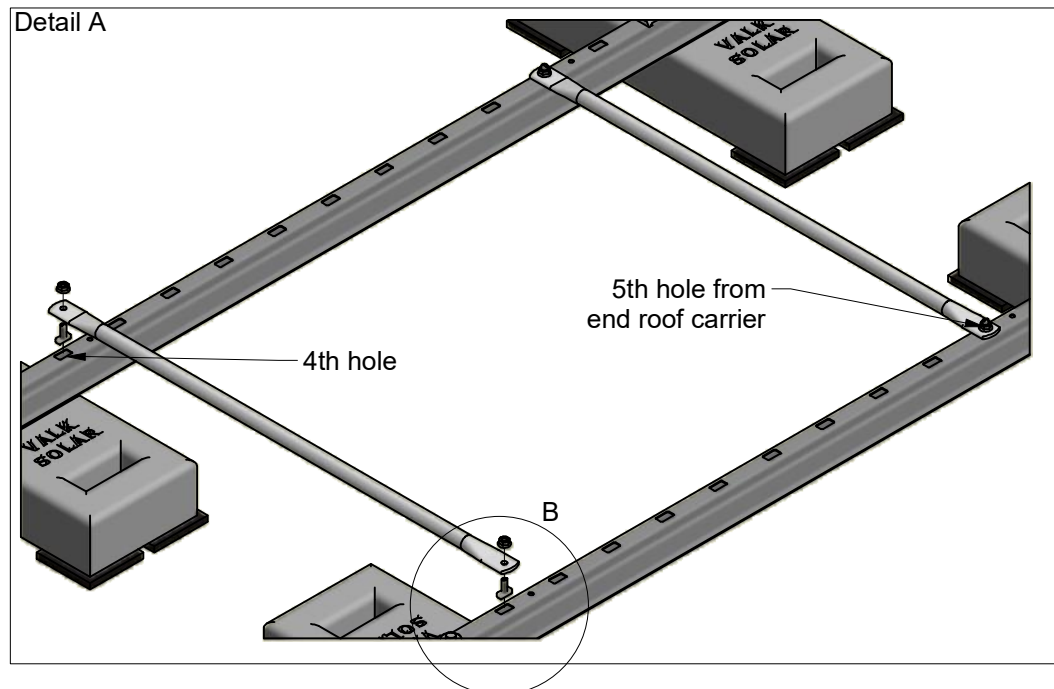
Mount the connector pieces to the roof carriers. Make sure they are placed as shown in the drawing.

Detail B



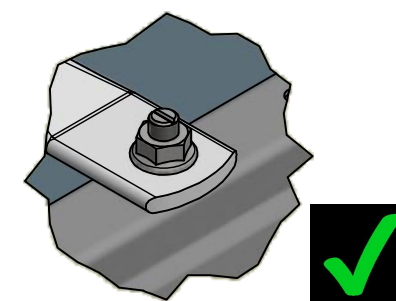
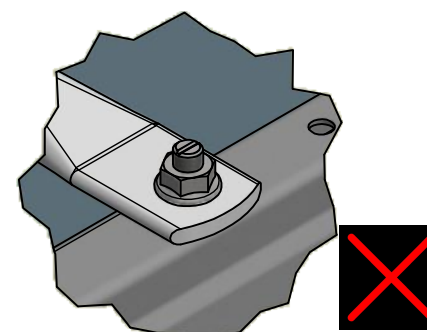
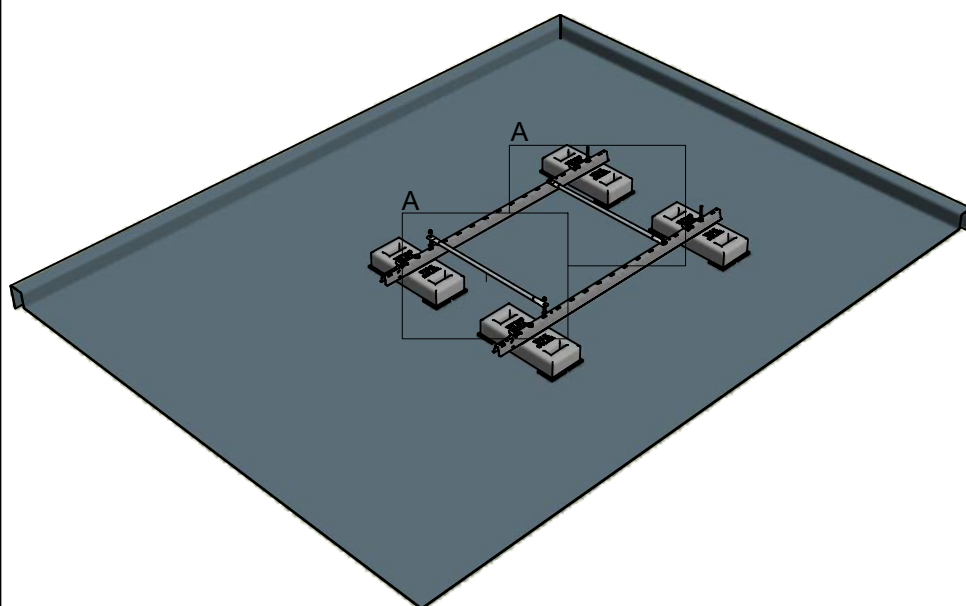
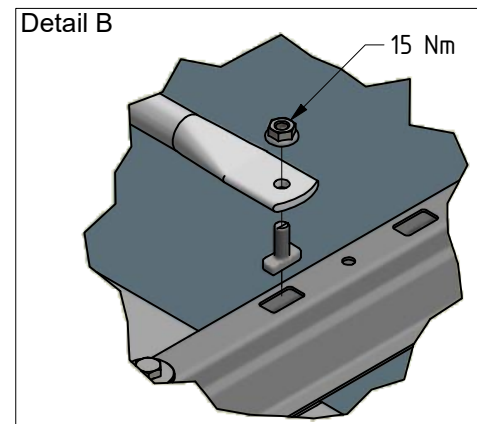
The groove on the bolt corresponds with the orientation of the bolt head!

Detail A



Mount the push rods on the roof carriers to connect the two rows.

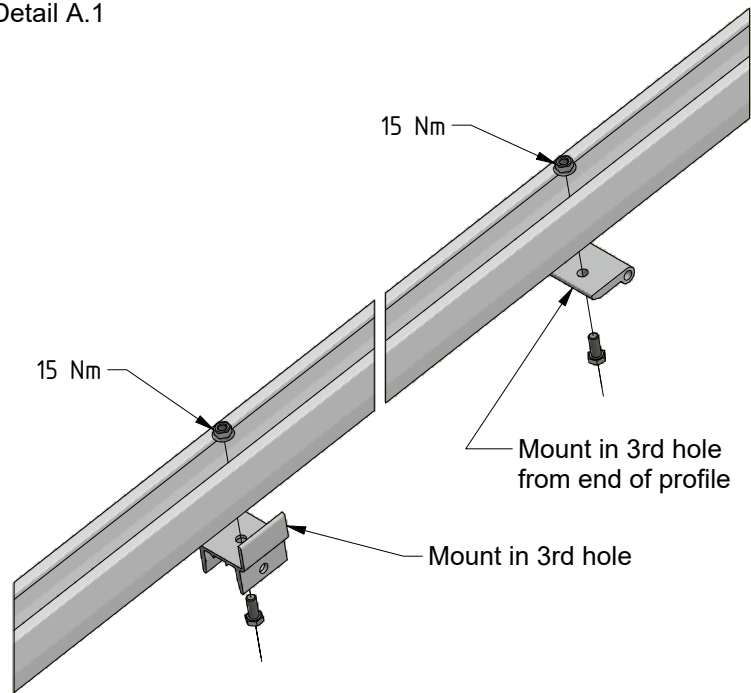
Detail B



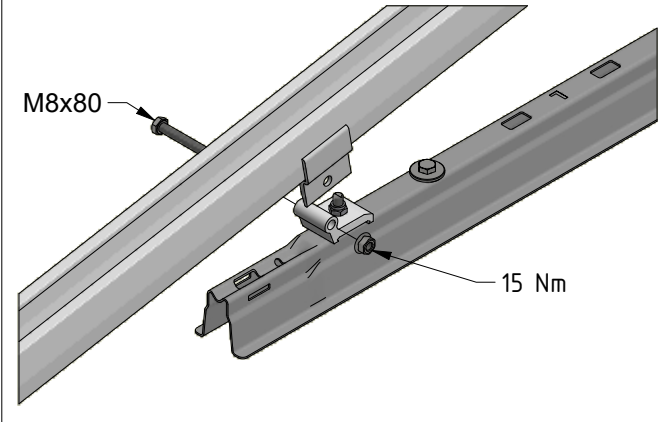
The groove on the bolt corresponds with the orientation of the bolt head!



Detail A.1

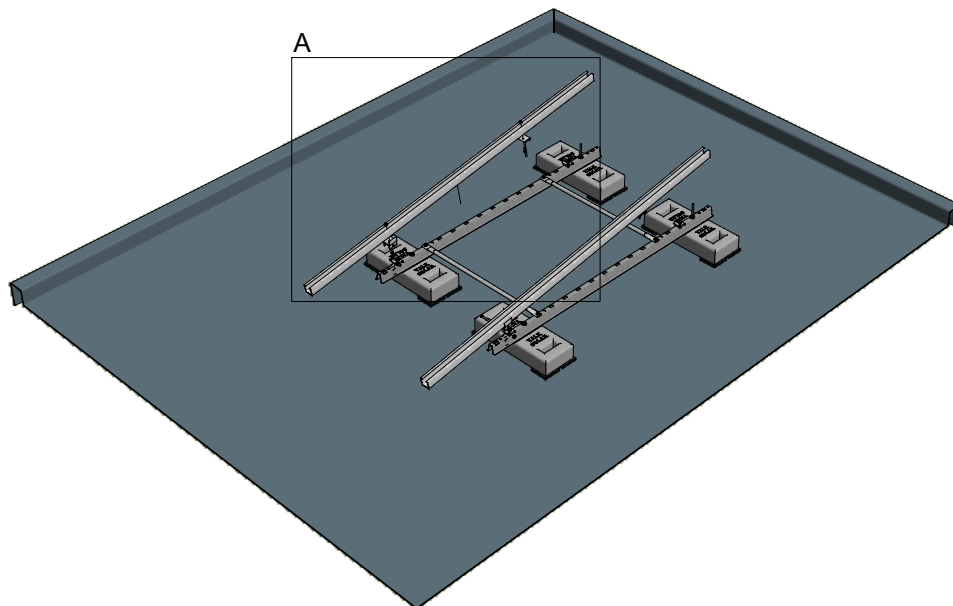


Detail A.2



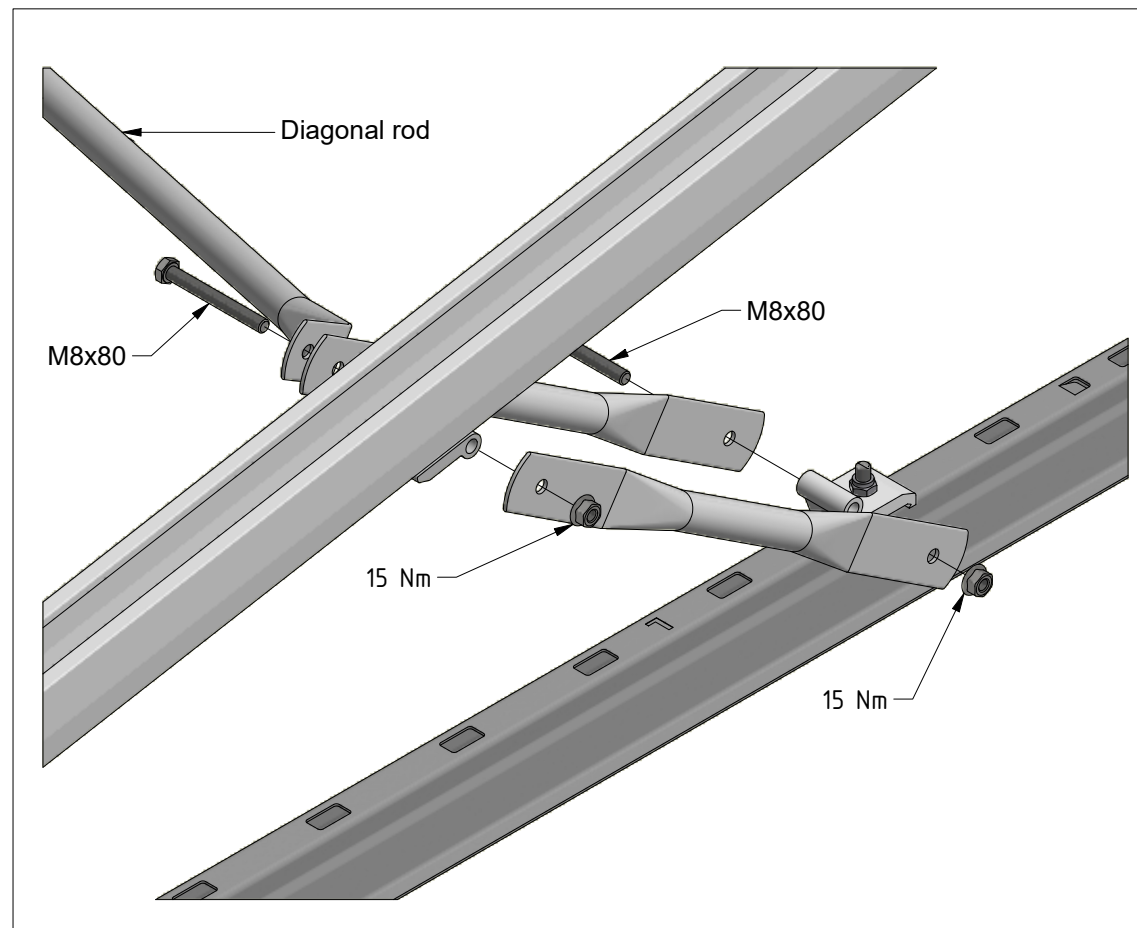
ValkHint!!

Create the Aluminium profile with the connector pieces first.
Then mount the profile to the roof carrier.

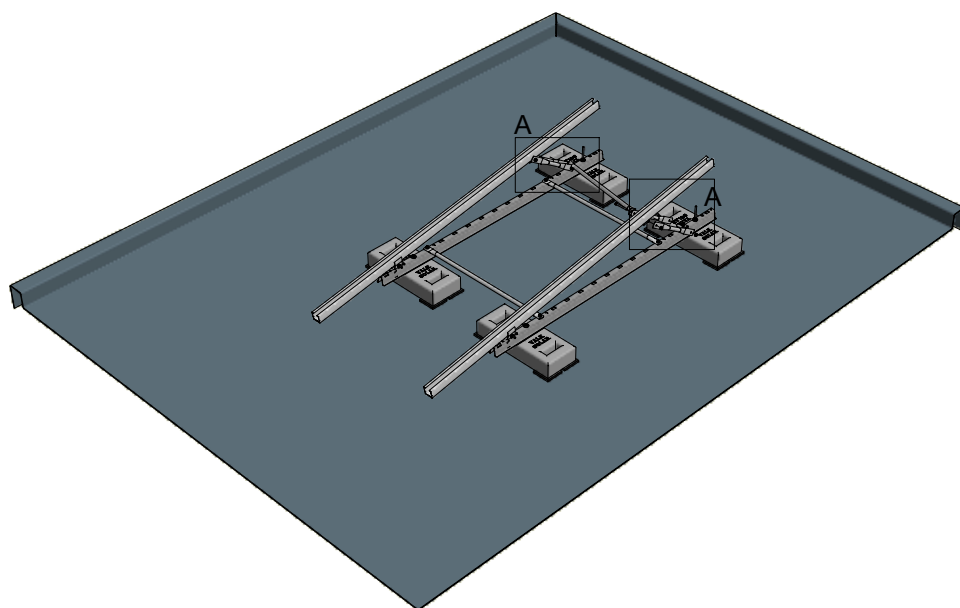




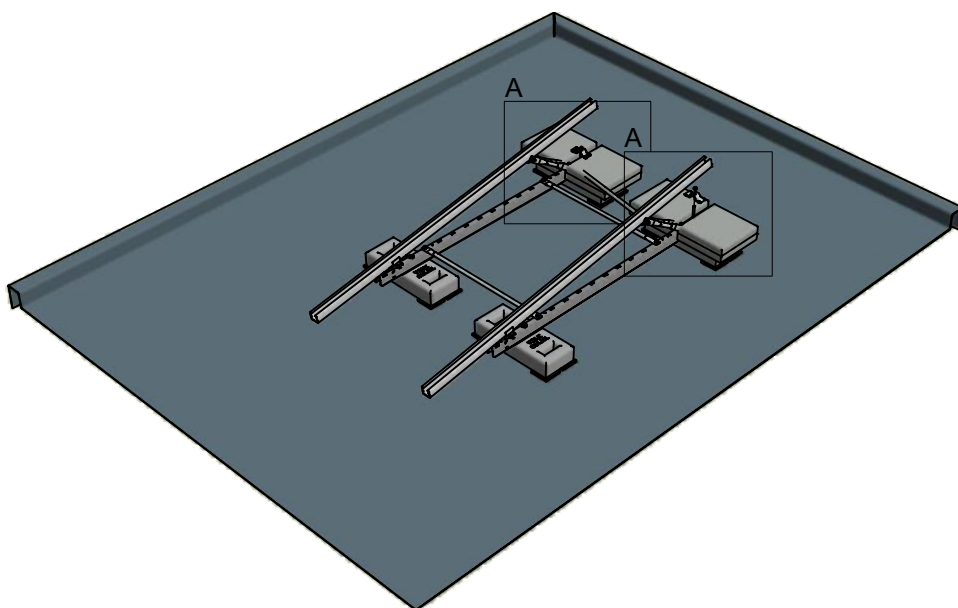
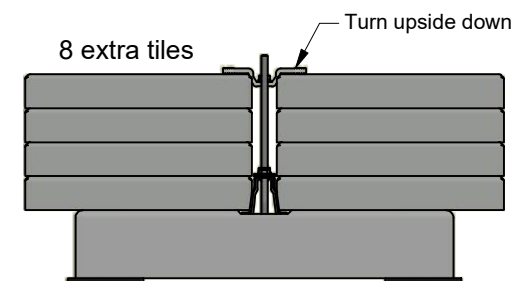
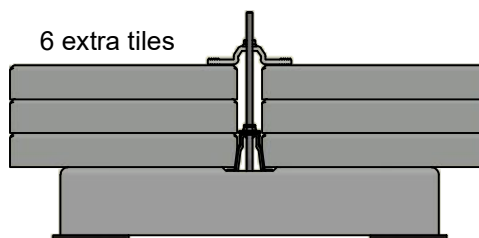
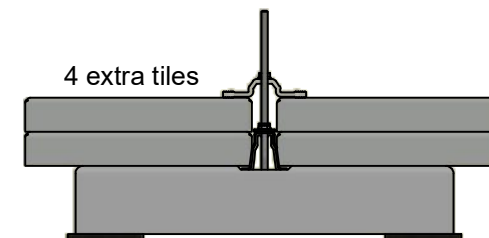
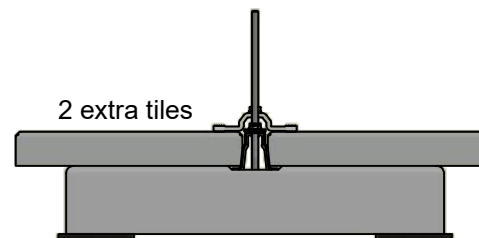
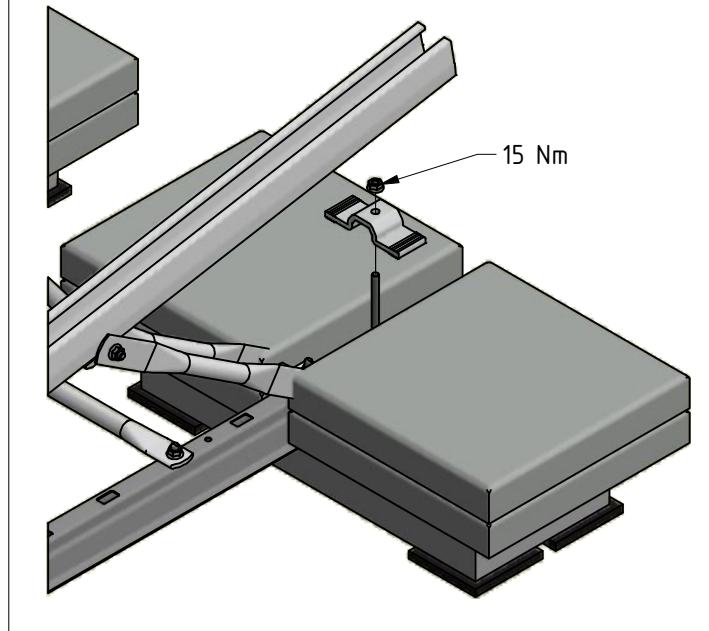
Detail A



Mount the push rods to the aluminium profile and the roof carriers.



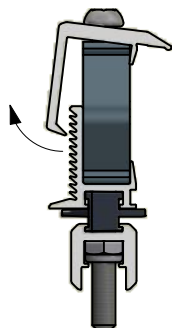
Detail A



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

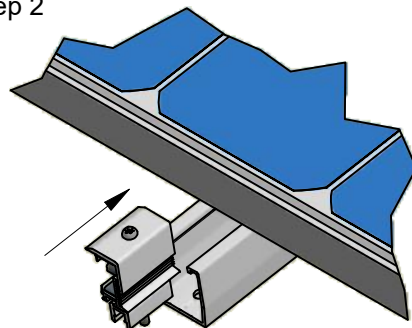


Step 1

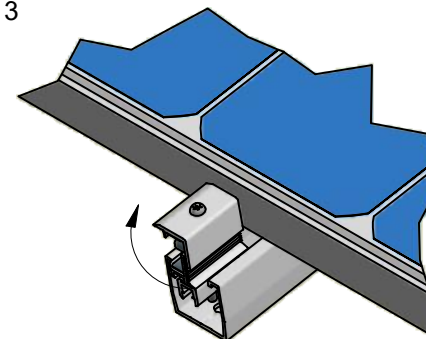


Take the end clamp out of it's slot for an easier assembly.

Step 2

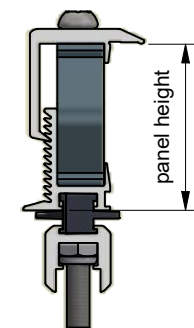


Step 3



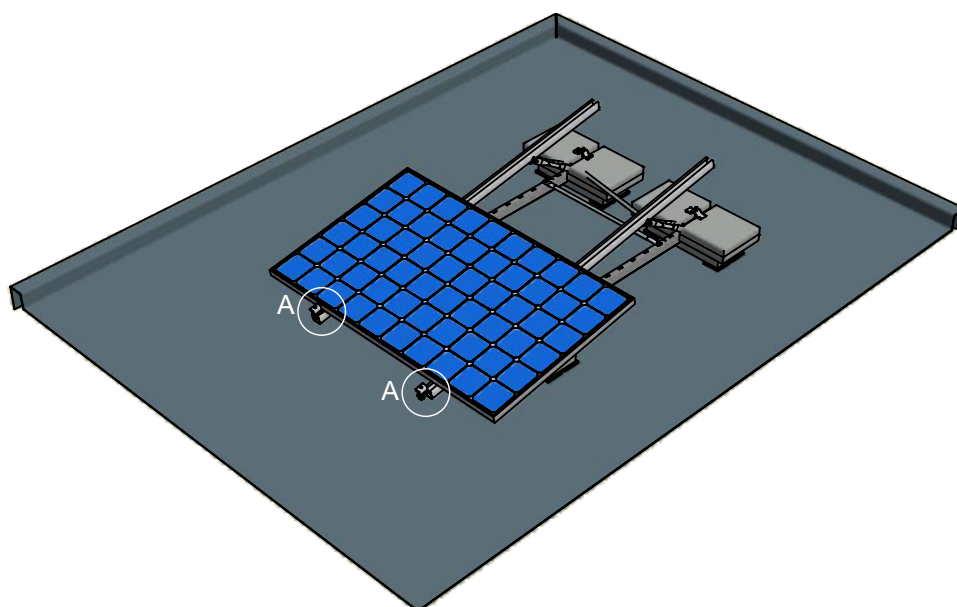
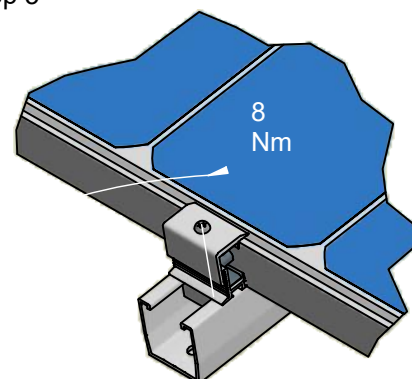
The end clamp can only be turned clockwise, so make sure the end clamp is placed the right way.

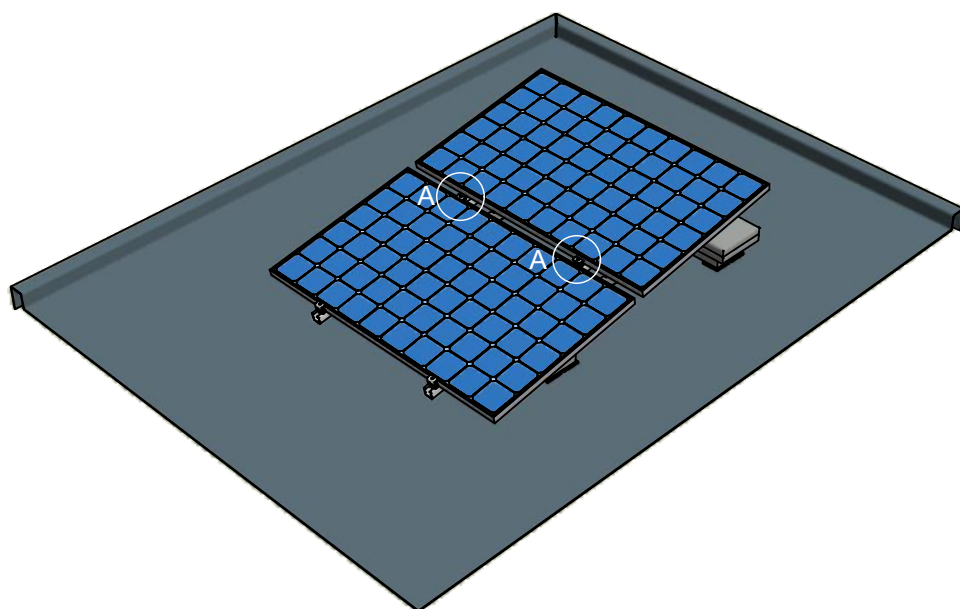
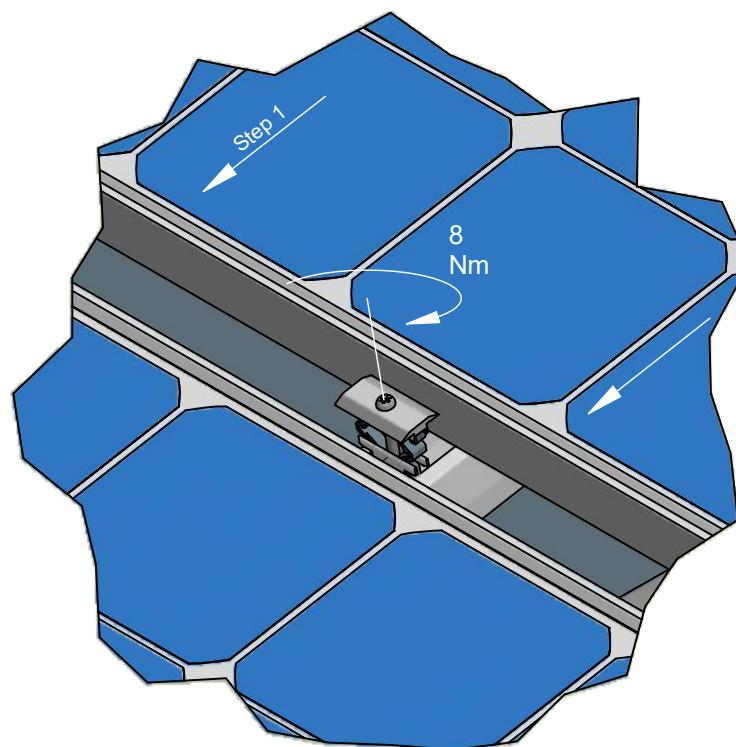
Step 4



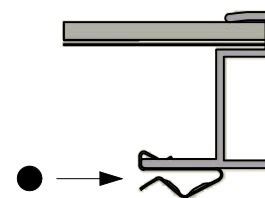
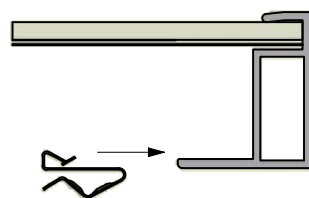
Put the end clamp in the right slot to continue the assembly.

Step 5





Attention!! Do not forget to install the end clamps above the second panel (Same installation as other end clamps, page 07)



Mount cable clamp on the panel.

