

Installation manual ValkQuattro





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Pay attention

- This manual is not project specific.
- This manual is not legally binding.
- No rights may be derived from this installation manual.
- See **datasheet ValkCableCare** for cable management.
- The system is placed in the middle zone of the roof.





Disclaimer

This installation manual composed with the greatest possible care and contains specific information for correct and safe installation of the solar mounting system, including installation drawings and ballast tables, calculated according to the Eurocode regulations. The standard values used for input of these calculations, always need to be checked in advance by the installer for correctness. In case values are different, a project case specific calculation needs to be made. Please contact Van der Valk Solar Systems in this situation.

At all times all currently applicable structural, safety and building regulations must be observed prior to installation of the solar mounting system. The building in question will be subject to a load as a result of the solar mounting system installed/mounted. Solar mounting systems installed on roofs will be exposed to wind and snow loads. Therefore, you are at all times responsible to obtain and use a design calculation to establish whether or not the building will be able to withstand the (extra) load at all times. Where necessary, modifications need to be made by you. Van der Valk will not accept any form of liability upon you not having obtained and used such a required design calculation.

Mounting systems for PV-panels placed on flat roofs should either be mechanically attached to the roof or need to be supported by ballast, to make sure that the solar mounting system is unable to be lifted, tipped over or slide. The required ballast weight per system shown in the tables in this manual ensures that the mounting system can be installed and used safely. In case the inclination of the roofs is 5 degrees or more, the PV-mounting system must always be mechanically fixed to the construction of the roof.

The calculations do not take into account obstacles in the near surrounding such as, for example, high buildings, cliffs and mountains. Restrictions also apply for the position of the solar mounting system on a roof. The solar panels must be installed at a certain distance from the edge of the roof: the middle zone.

The standard warranty 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 at all times 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 failure to observe the instructions provided in this installation manual. The use of the installation manual will at all times be subject to Dutch law.

Van der Valk Solar Systems holds the right to amend this document without further notice.

The ValkQuattro mounting system is a product of:

Van der Valk Solar Systems BV

Netherlands Chamber of Commerce: 27355116

www.valksolarsystems.com

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;

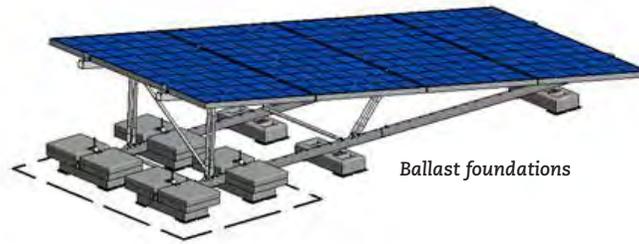
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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

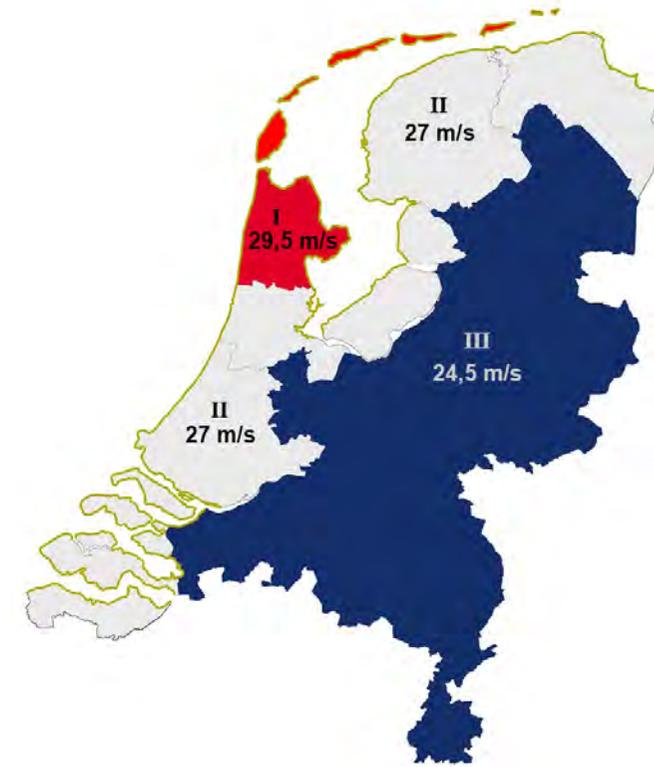
Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Environmental factors

Position Middle zone roof
 Terrain category Built environment
 Roof materials Bitumen



Windmap The Netherlands



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
I (29,5 m/s)	282,0	282,0	X	X	X	kg
	31,5	31,5	X	X	X	tiles
II (27 m/s)	188,0	188,0	244,0	X	X	kg
	21,0	21,0	27,5	X	X	tiles
III (24,5 m/s)	102,0	102,0	148,0	203,0	248,0	kg
	11,5	11,5	16,5	23,0	28,0	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
I (29,5 m/s)	X	X	X	X	X	kg
	X	X	X	X	X	tiles
II (27 m/s)	252,0	252,0	X	X	X	kg
	28,0	28,0	X	X	X	tiles
III (24,5 m/s)	152,0	152,0	206,0	270,0	X	kg
	17,0	17,0	23,0	30,0	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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 | 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;

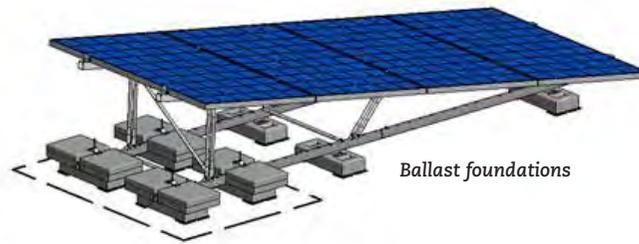
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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

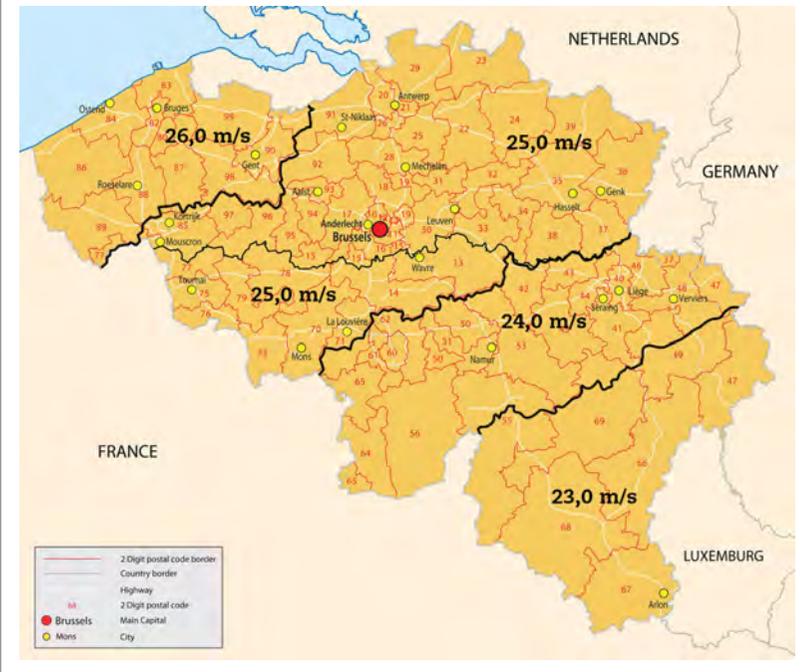
Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Environmental factors

Position Middle zone roof
 Terrain category III (villages, suburban terrain, permanent forest)
 Roof materials Bitumen



Windmap Belgium



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
23 m/s	18,0	58,0	94,0	136,0	170,0	kg
	2,0	6,5	10,5	15,5	19,0	tiles
24 m/s	38,0	88,0	126,0	172,0	209,0	kg
	4,5	10,0	14,0	19,5	23,5	tiles
25 m/s	65,0	118,0	160,0	210,0	250,0	kg
	7,5	13,5	18,0	23,5	28,0	tiles
26 m/s	92,0	150,0	195,0	249,0	X	kg
	10,5	17,0	22,0	28,0	X	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
23 m/s	49,0	101,0	143,0	192,0	231,0	kg
	5,5	11,5	16,0	21,5	26,0	tiles
24 m/s	78,0	135,0	180,0	234,0	277,0	kg
	9,0	15,0	20,0	26,0	31,0	tiles
25 m/s	109,0	171,0	220,0	278,0	X	kg
	12,5	19,0	24,5	31,0	X	tiles
26 m/s	141,0	208,0	261,0	X	X	kg
	16,0	23,5	29,0	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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;

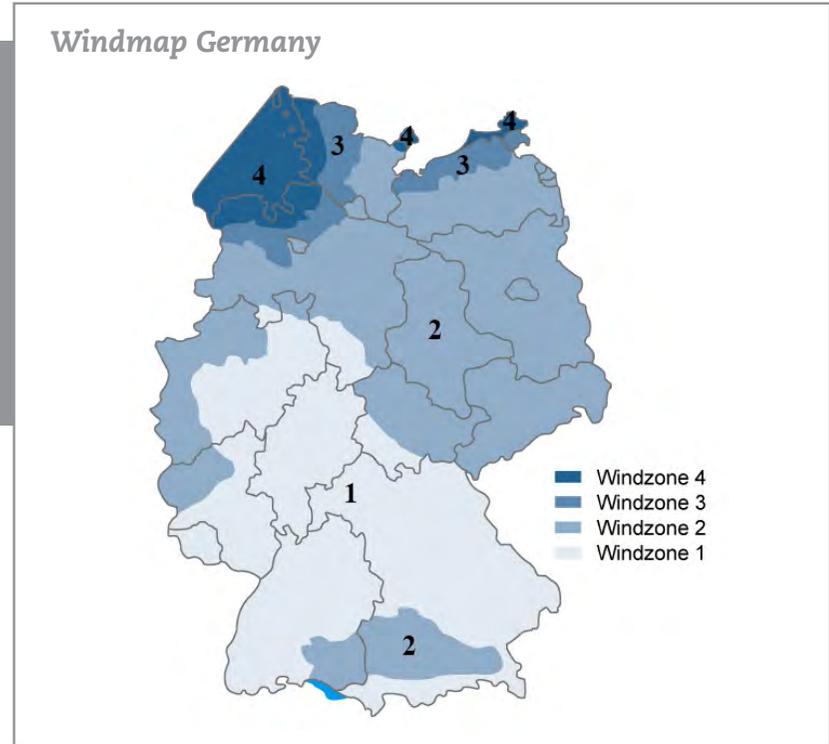
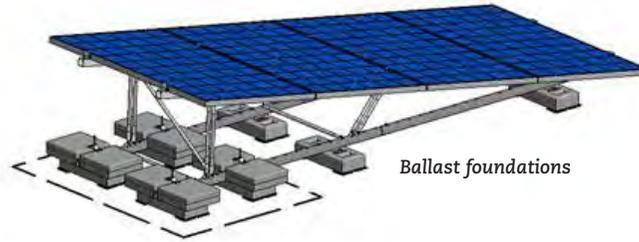
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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).

Environmental factors

Position Middle zone roof
 Terrain category IV (city)
 Height above sea level 350 m
Exclusief North German Lowland
 Roof materials Bitumen



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
1 (22,5 m/s)	22,0	22,0	22,0	22,0	22,0	kg
	2,5	2,5	2,5	2,5	2,5	tiles
2 (25 m/s)	86,0	86,0	86,0	86,0	86,0	kg
	10,0	10,0	10,0	10,0	10,0	tiles
3 (27,5 m/s)	161,0	161,0	161,0	161,0	161,0	kg
	18,0	18,0	18,0	18,0	18,0	tiles
4 (30 m/s)	242,0	242,0	242,0	242,0	242,0	kg
	27,0	27,0	27,0	27,0	27,0	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
1 (22,5 m/s)	54,0	54,0	54,0	54,0	54,0	kg
	6,0	6,0	6,0	6,0	6,0	tiles
2 (25 m/s)	133,0	133,0	133,0	133,0	133,0	kg
	15,0	15,0	15,0	15,0	15,0	tiles
3 (27,5 m/s)	220,0	220,0	220,0	220,0	220,0	kg
	24,5	24,5	24,5	24,5	24,5	tiles
4 (30 m/s)	316,0	316,0	316,0	316,0	316,0	kg
	X	X	X	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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 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;

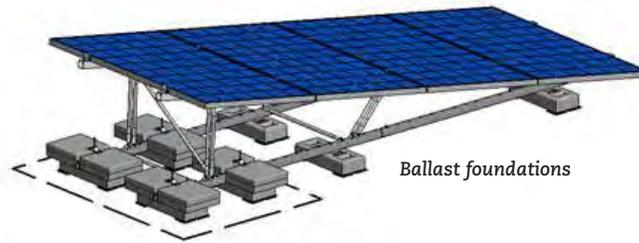
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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

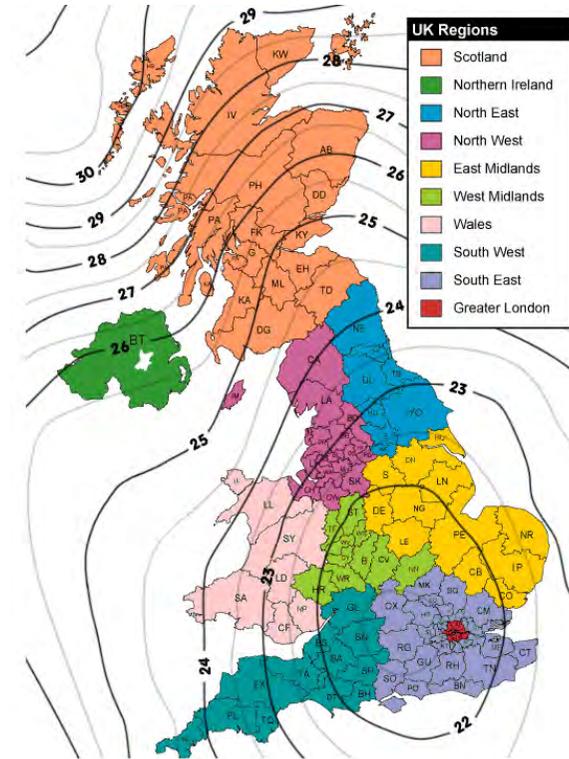
Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Environmental factors

Position	Middle zone roof
Terrain category	Built environment
Height above sea level	50 m
Distance to coast line	5 km
Distance to city border	5 km
Roof materials	Bitumen



Windmap United Kingdom



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	106,0	183,0	213,0	X	X	kg
	12,0	20,5	24,0	X	X	tiles
23 m/s	141,0	225,0	258,0	X	X	kg
	16,0	25,0	29,0	X	X	tiles
24 m/s	178,0	269,0	X	X	X	kg
	20,0	30,0	X	X	X	tiles
25 m/s	216,0	X	X	X	X	kg
	24,0	X	X	X	X	tiles
26 m/s	256,0	X	X	X	X	kg
	28,5	X	X	X	X	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	157,0	246,0	282,0	X	X	kg
	17,5	27,5	31,5	X	X	tiles
23 m/s	198,0	X	X	X	X	kg
	22,0	X	X	X	X	tiles
24 m/s	240,0	X	X	X	X	kg
	27,0	X	X	X	X	tiles
25 m/s	285,0	X	X	X	X	kg
	32,0	X	X	X	X	tiles
26 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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 | 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;

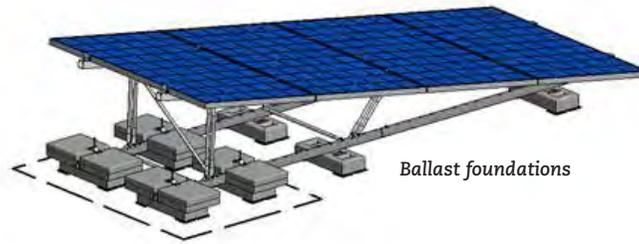
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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).

Environmental factors

Position	Middle zone roof
Terrain category	Built environment
Height above sea level	50 m
Distance to coast line	5 km
Distance to city border	5 km
Roof materials	Bitumen



Windmap Ireland



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
25 m/s	216,0	X	X	X	X	kg
	24,0	X	X	X	X	tiles
26 m/s	256,0	X	X	X	X	kg
	29,5	X	X	X	X	tiles
27 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles
28 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
25 m/s	285,0	X	X	X	X	kg
	32,0	X	X	X	X	tiles
26 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles
27 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles
28 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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 | 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;

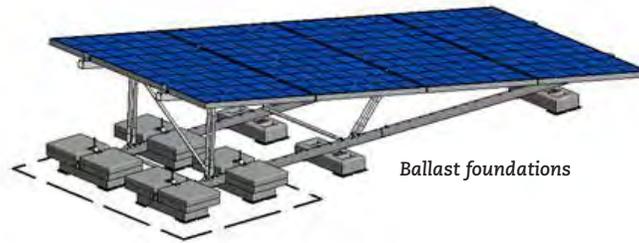
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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).

Environmental factors

Position	Middle zone roof
Terrain category	III (villages, suburban terrain, permanent forest)
Height above sea level	175 m
Roofing materials	Bitumen



Windmap Norway



For determining the wind area see next page.

Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	71,0	71,0	88,0	129,0	162,0	kg
	8,0	8,0	10,0	14,5	18,0	tiles
25 m/s	171,0	171,0	192,0	245,0	288,0	kg
	19,0	19,0	21,5	27,5	32,0	tiles
27 m/s	244,0	244,0	269,0	X	X	kg
	27,5	27,5	30,0	X	X	tiles
29 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles
31 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	116,0	116,0	135,0	183,0	222,0	kg
	13,0	13,0	15,0	20,5	25,0	tiles
25 m/s	233,0	233,0	257,0	X	X	kg
	26,0	26,0	29,0	X	X	tiles
27 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles
29 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles
31 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

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

Wind area | Norway

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

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;

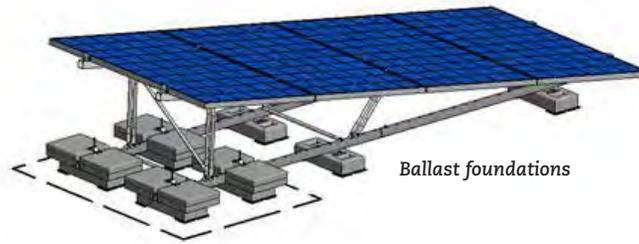
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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).

Environmental factors

Position	Middle zone roof
Terrain category	III (villages, suburban terrain, permanent forest)
Height above sea level	175 m
Roofing materials	Bitumen



Windmap Sweden



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	0,0	8,0	28,0	63,0	92,0	kg
	0,0	1,0	3,5	7,0	10,5	tiles
23 m/s	0,0	25,0	56,0	94,0	125,0	kg
	0,0	3,0	6,5	10,5	14,0	tiles
24 m/s	13,0	50,0	85,0	127,0	160,0	kg
	1,5	6,0	9,5	14,5	18,0	tiles
25 m/s	29,0	77,0	115,0	160,0	197,0	kg
	3,5	9,0	13,0	18,0	22,0	tiles
26 m/s	53,0	105,0	147,0	196,0	235,0	kg
	6,0	12,0	16,5	22,0	26,5	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
22 m/s	1,0	32,0	66,0	107,0	140,0	kg
	0,5	4,0	7,5	12,0	16,0	tiles
25 m/s	18,0	61,0	98,0	143,0	179,0	kg
	2,0	7,0	11,0	16,0	20,0	tiles
27 m/s	39,0	91,0	132,0	181,0	220,0	kg
	4,5	10,5	15,0	20,5	24,5	tiles
29 m/s	66,0	123,0	167,0	220,0	263,0	kg
	7,5	14,0	19,0	24,5	29,5	tiles
31 m/s	95,0	156,0	204,0	261,0	X	kg
	11,0	17,5	23,0	29,0	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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;

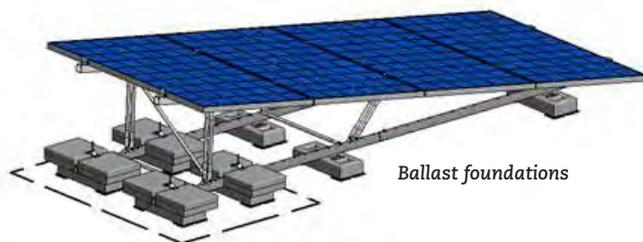
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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

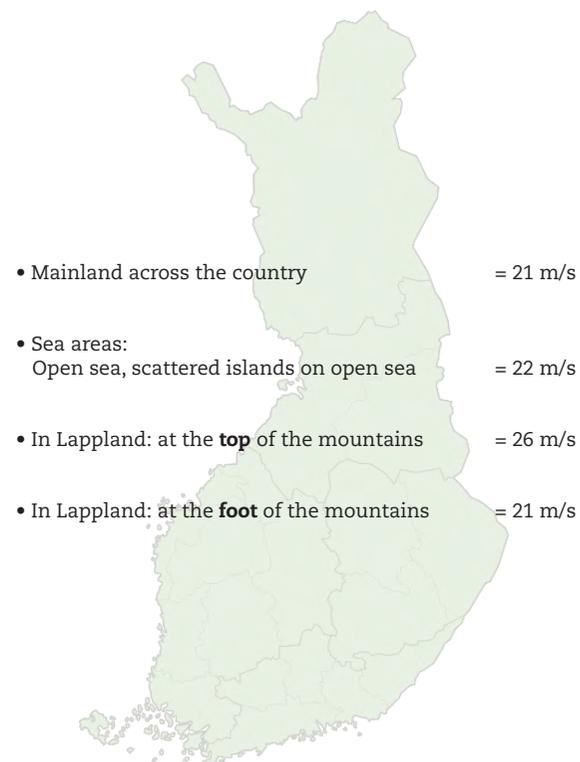
Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Environmental factors

Position	Middle zone roof
Terrain category	III (villages, suburban terrain, permanent forest)
Roofing materials	Bitumen



Windmap Finland



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
21 m/s	18,0	57,0	92,0	134,0	167,0	kg
	2,0	6,5	10,5	15,0	19,0	tiles
22 m/s	40,0	89,0	128,0	173,0	210,0	kg
	4,5	10,0	14,5	19,5	23,5	tiles
26 m/s	163,0	232,0	285,0	X	X	kg
	18,5	26,0	32,0	X	X	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
21 m/s	58,0	100,0	141,0	189,0	228,0	kg
	6,5	11,5	16,0	21,0	25,5	tiles
22 m/s	80,0	137,0	182,0	235,0	278,0	kg
	10,0	15,5	20,5	26,5	31,0	tiles
26 m/s	224,0	X	X	X	X	kg
	25,0	X	X	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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 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;

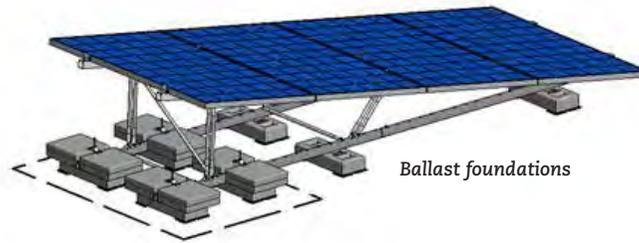
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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

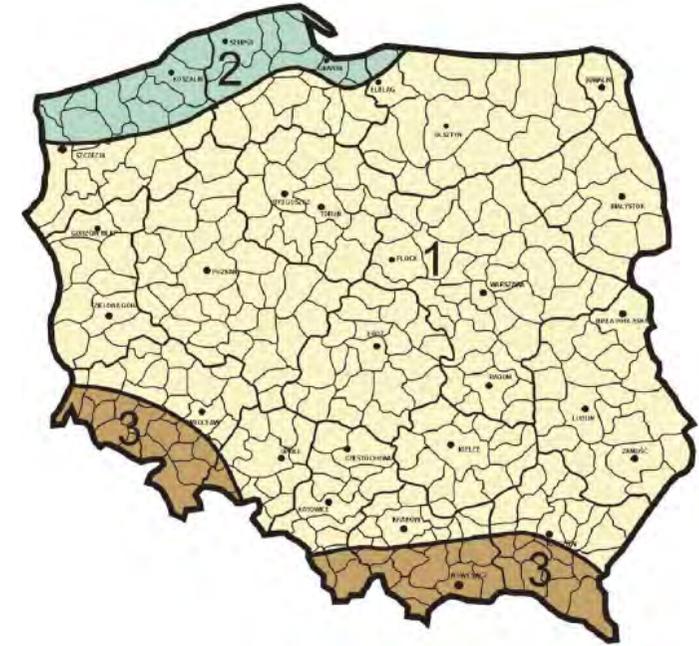
Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Environmental factors

Position	Middle zone roof
Terrain category	III (villages, suburban terrain, permanent forest)
Roofing materials	Bitumen



Windmap Poland



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
1	76,0	107,0	133,0	164,0	190,0	kg
	8,5	12,0	15,0	18,5	21,5	tiles
2	213,0	257,0	X	X	X	kg
	24,0	29,0	X	X	X	tiles
3	76,0	107,0	133,0	164,0	190,0	kg
	8,5	12,0	15,0	18,5	21,5	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
1	122,0	158,0	188,0	225,0	255,0	kg
	14,0	18,0	21,0	25,0	28,5	tiles
2	282,0	X	X	X	X	kg
	31,5	X	X	X	X	tiles
3	122,0	158,0	188,0	225,0	255,0	kg
	14,0	18,0	21,0	25,0	28,5	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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 | Spain

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;

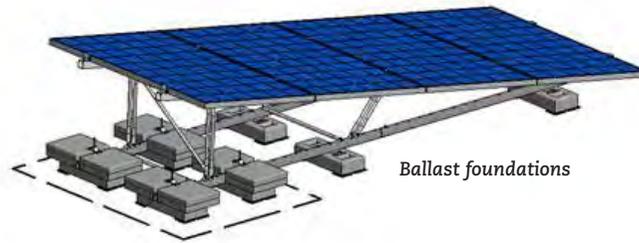
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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

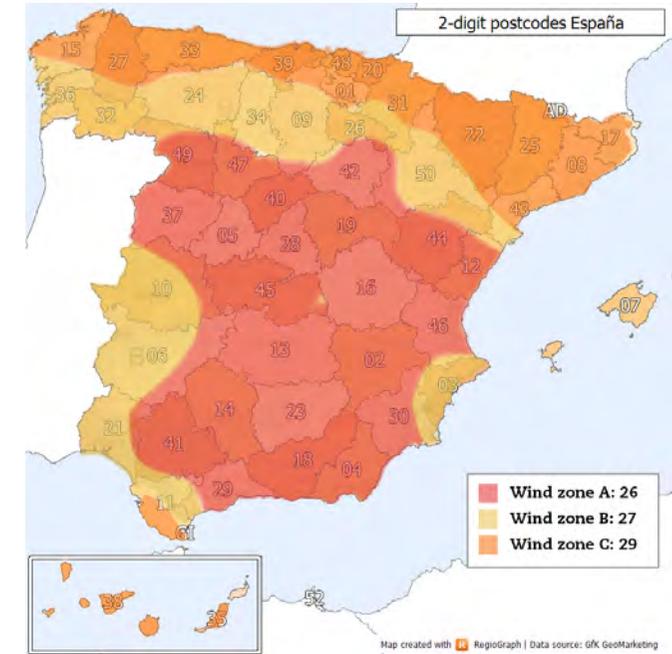
Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Environmental factors

Position	Middle zone roof
Terrain category	III (villages, suburban terrain, permanent forest)
Height above sea level	< 1000 m
Roofing materials	Concrete



Windmap Spain



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
26 m/s	177,0	208,0	258,0	319,0	368,0	kg
	20,0	23,5	29,0	X	X	tiles
27 m/s	212,0	245,0	X	X	X	kg
	24,0	27,5	X	X	X	tiles
29 m/s	287,0	X	X	X	X	kg
	32,0	X	X	X	X	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
26 m/s	240,0	275,0	X	X	X	kg
	27,0	31,0	X	X	X	tiles
27 m/s	281,0	X	X	X	X	kg
	31,5	X	X	X	X	tiles
29 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

* 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 | Portugal

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;

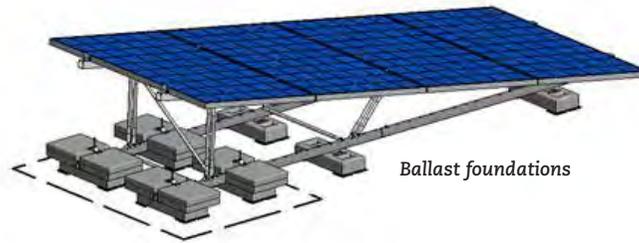
- determine the wind area on the windmap
- choose the wind area and building height in the table
- you can now read the number of tiles / kg

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

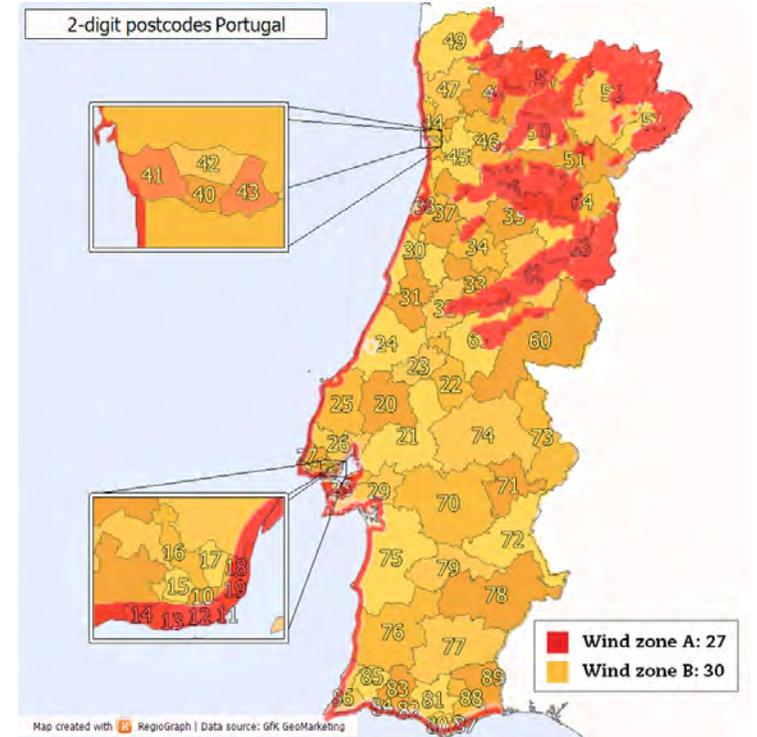
Note 2: The max. of 32 tiles can be placed for extra ballast (288 kg).

Environmental factors

Position	Middle zone roof
Terrain category	III (villages, suburban terrain, permanent forest)
Height above sea level	< 1000 m
Roofing materials	Concrete



Windmap Portugal



Panel: maximum dimensions 1800x1100 mm (21 kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
26 m/s	212,0	245,0	X	X	X	kg
	24,0	27,5	X	X	X	tiles
27 m/s	X	X	X	X	X	kg
	X	X	X	X	X	tiles

Panel: maximum dimensions 2300x1150 mm (30kg)

Building height	0 - 5 meter	5 - 7 meter	7 - 9 meter	9 - 12 meter	12 - 15 meter	
26 m/s	240,0	275,0	X	X	X	kg
	27,0	31,0	X	X	X	tiles
27 m/s	281,0	X	X	X	X	kg
	31,5	X	X	X	X	tiles

X = the required ballast is higher than will fit under the system. The system must be mechanically attached to the roof. Please contact Van der Valk Solar Systems.

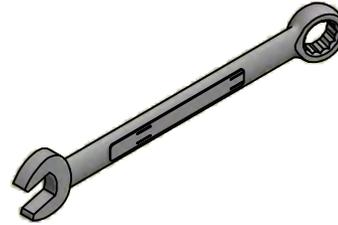
* If you use tiles of different sizes and thus another weight, you need to adjust the number of tiles to get the right weight.

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

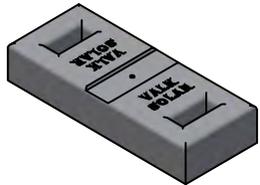
ValkQuattro



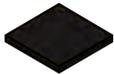
Roof carrier profile 2000mm (741802000)
Installation: Page 01



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 (774009)
Installation: Page 01



Threaded rod M8x220 (747974)
Installation: Page 01



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



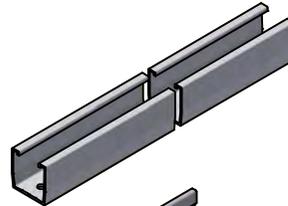
A-frame connector (724420)
Installation: Page 02



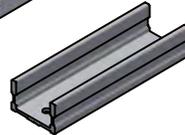
Alu. support (G13032212500000)
Installation: Page 03



Hammerheadbolt M8x20 (774220)
Installation: Page 03



Alu. profile 2400mm (7272400)
Alu. profile 1175mm (7271175)
Installation: Page 04



Alu. profile coupling (004850)
Installation: Page 04



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



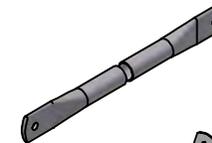
A-frame connector (724414)
Installation: Page 04



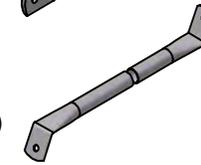
SS bolt M8x20 (774020)
Installation: Page 04



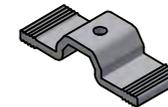
SS bolt M8x80 (774081)
Installation: Page 04



Alu. support (G13057704310000)
Alu. support (G13057706000000)
Installation: Page 05



Alu. support (G13032212687272)
Alu. support (G13032213376565)
Installation: Page 05



Alu. tile clamp (725140)
Installation: Page 06



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



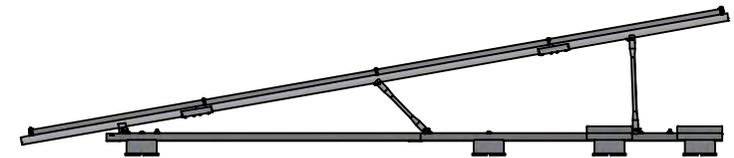
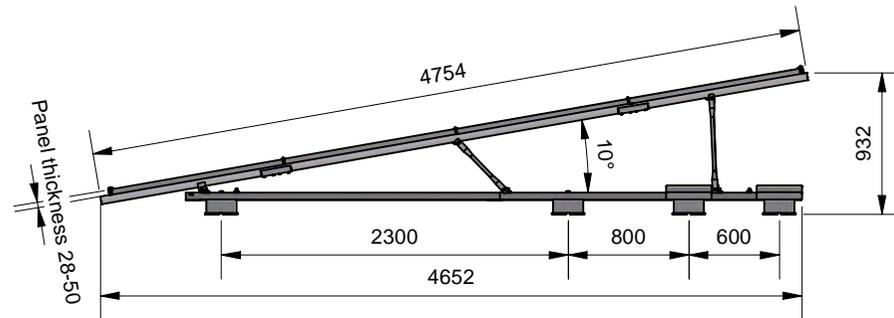
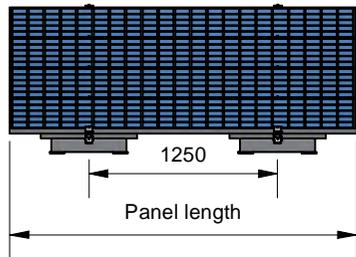
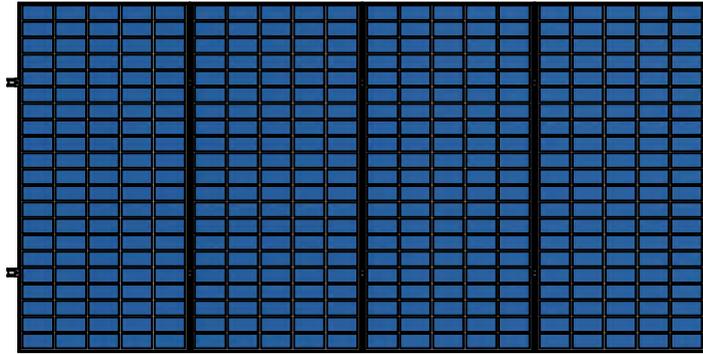
End clamp (721552)
Installation: Page 07

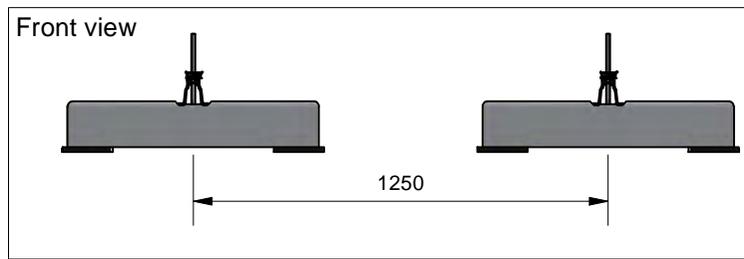


Panel clamp (721550)
Installation: Page 08



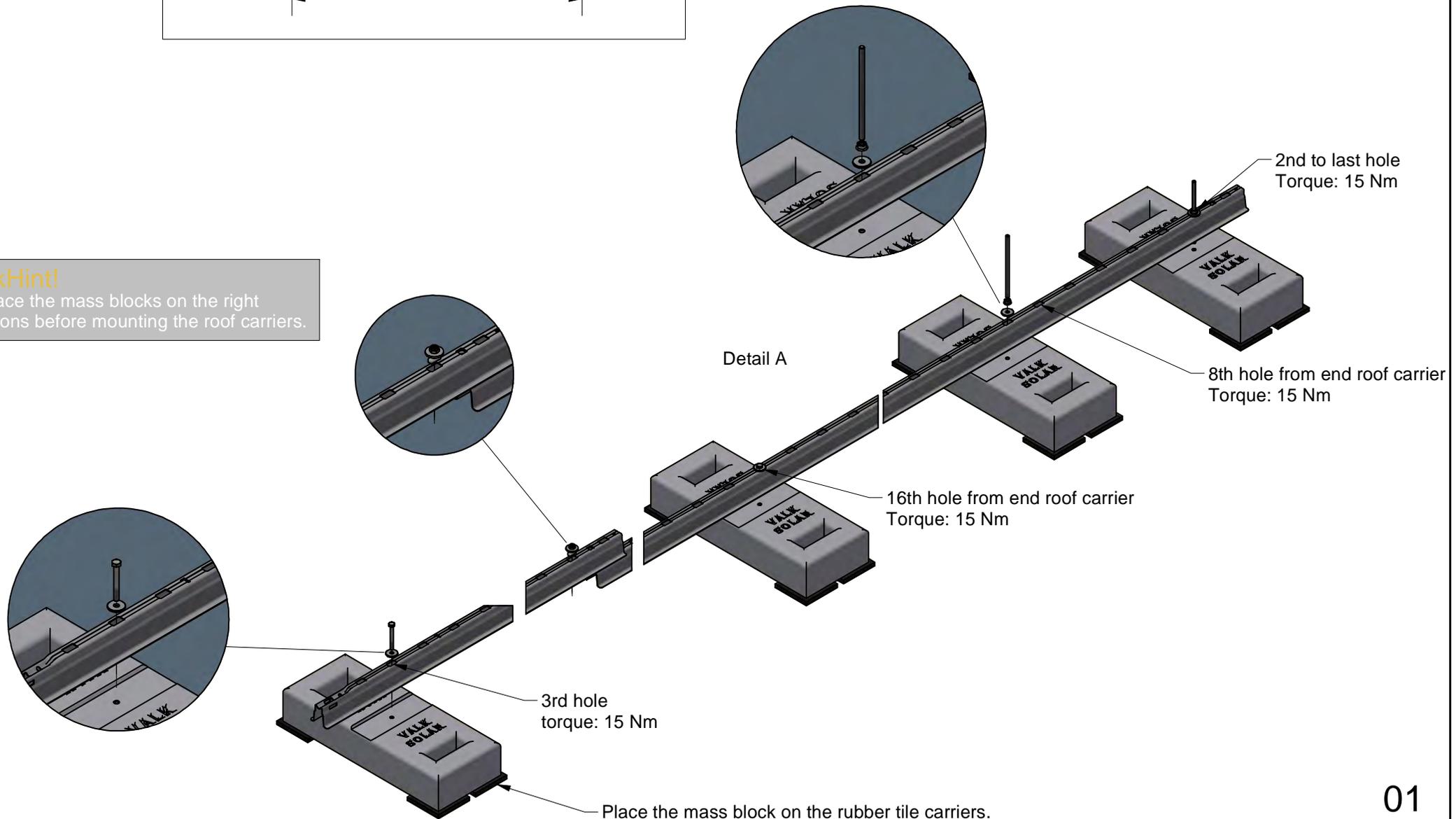
Cable clamp (732001)
Installation: Page 09





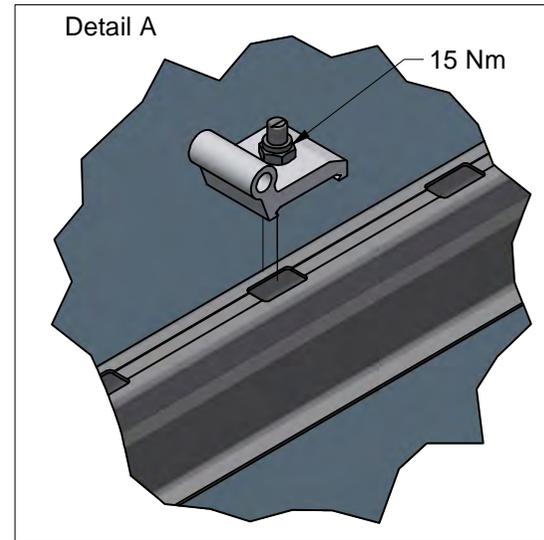
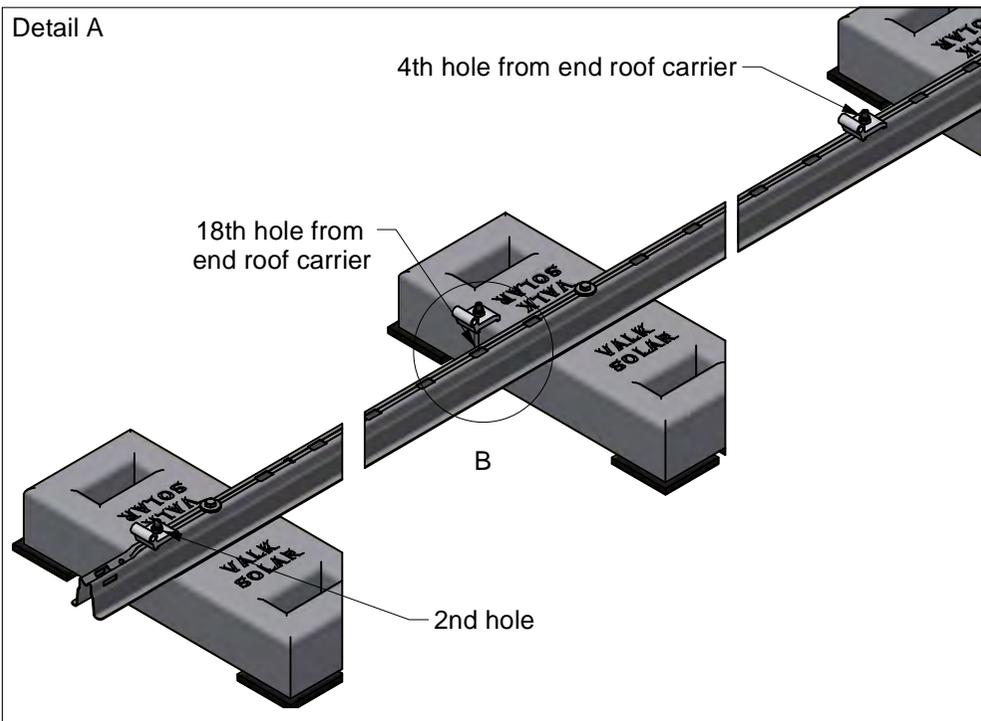
ValkHint!

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

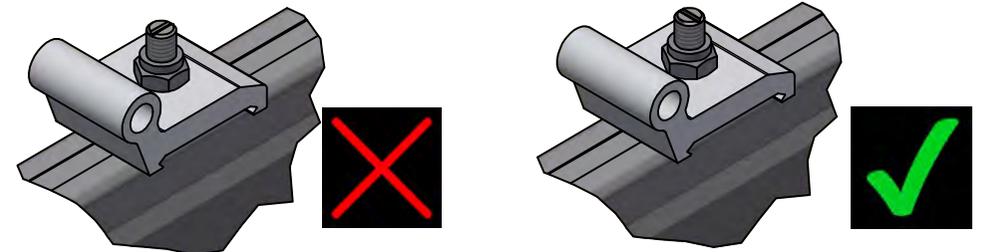
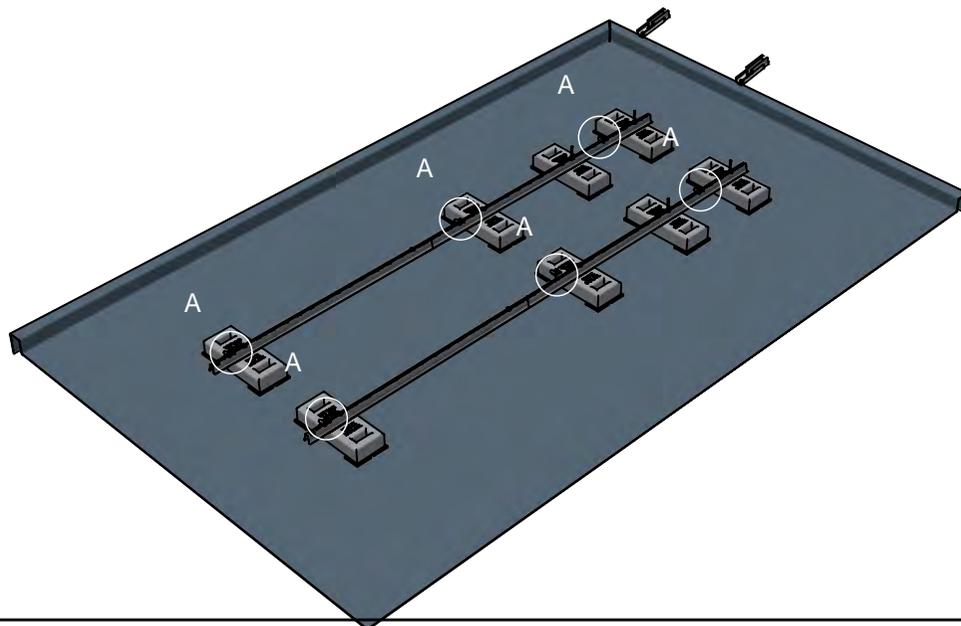




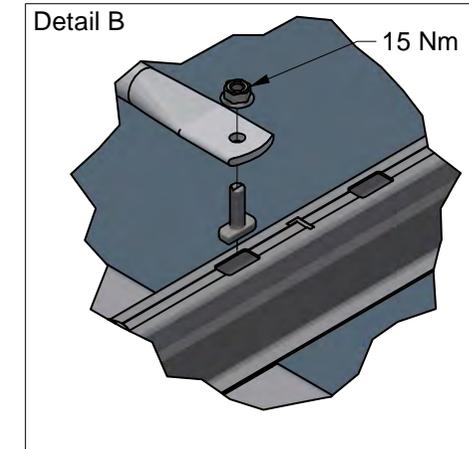
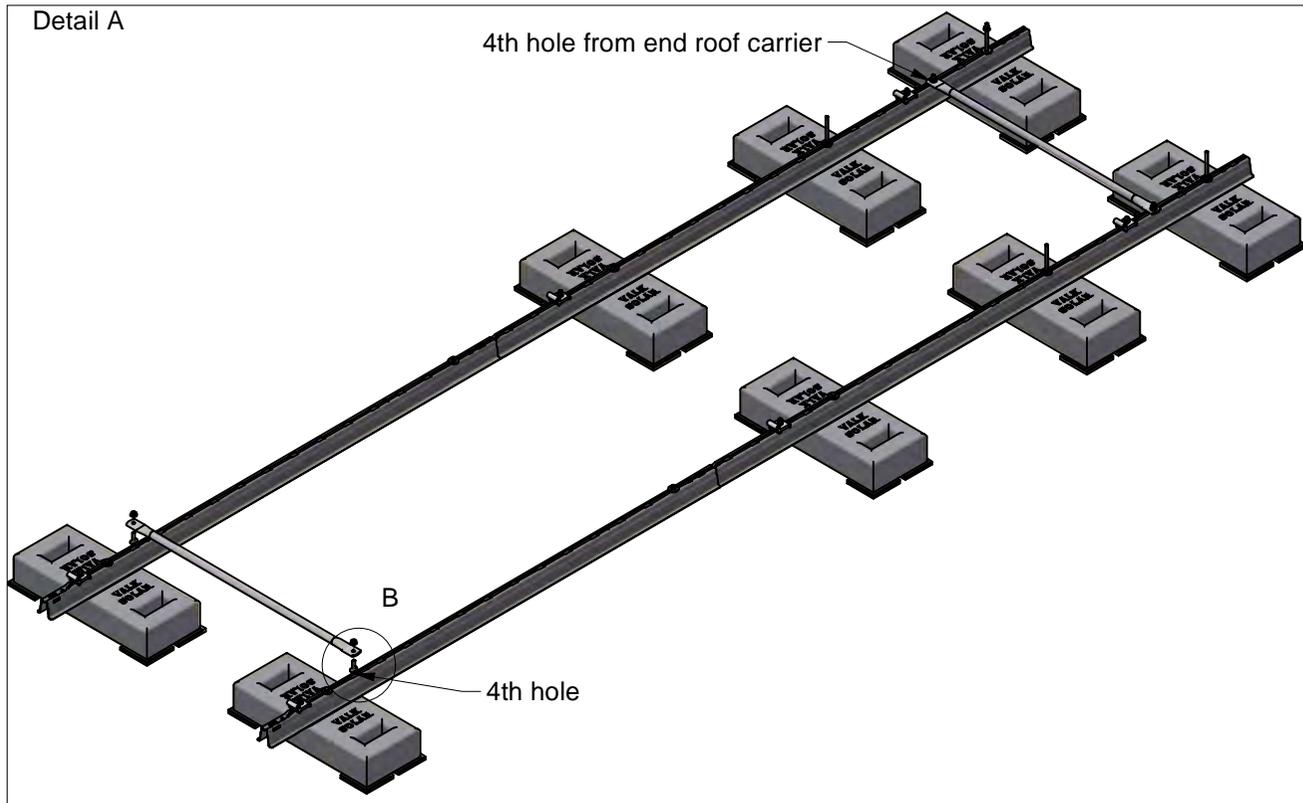
Detail A



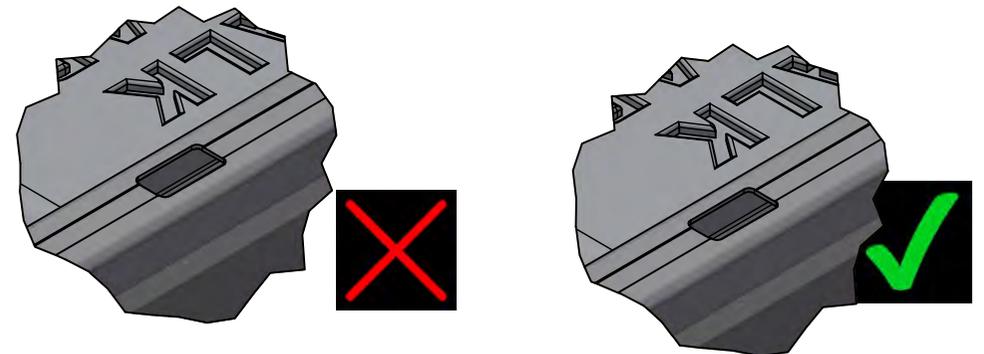
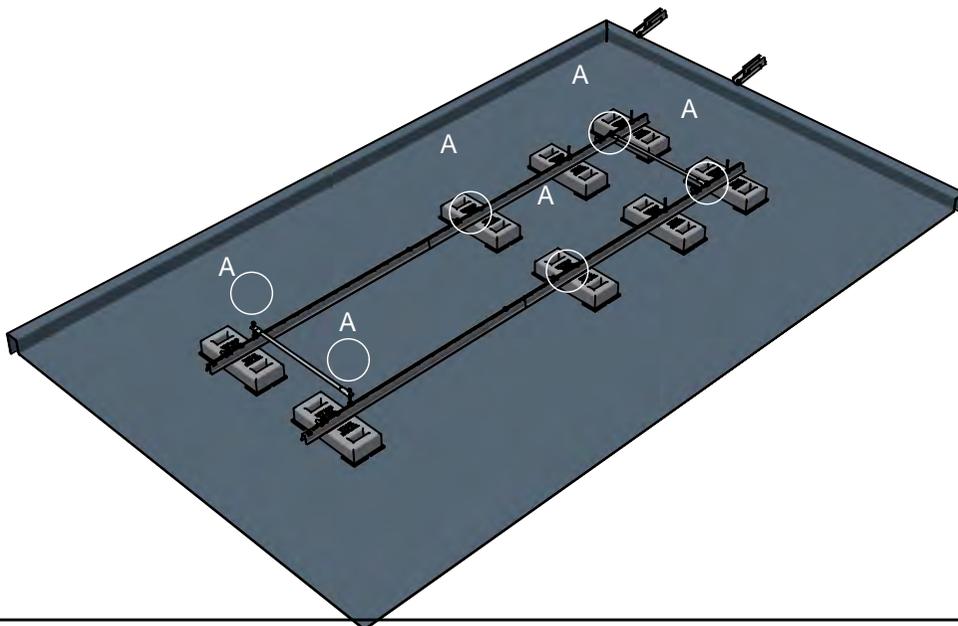
Mount the connector pieces to the roof carriers. Make sure they are placed as shown in the drawing.



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



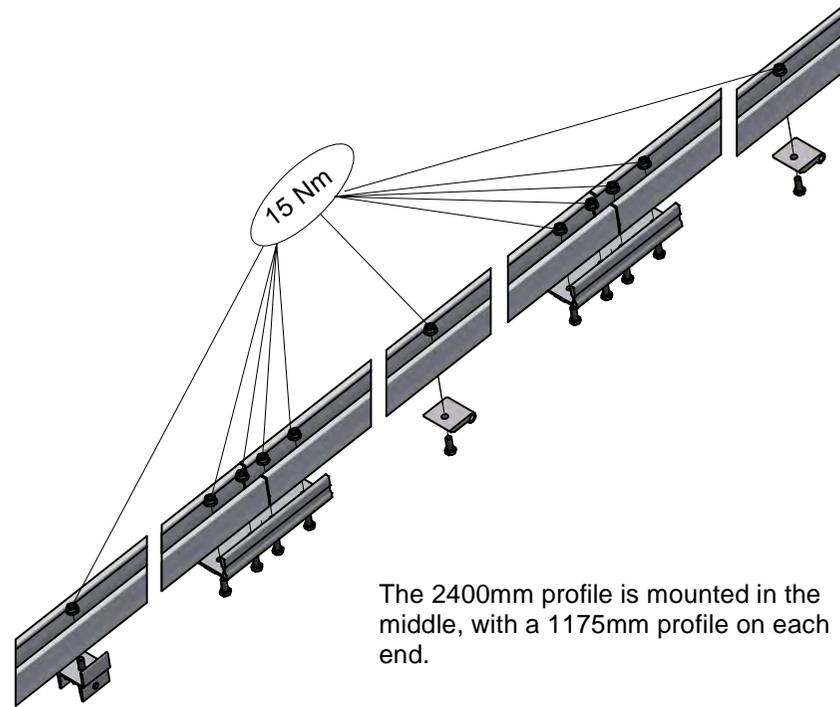
Mount the push rod to the roof carriers to connect the two rows.



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



Detail A.1

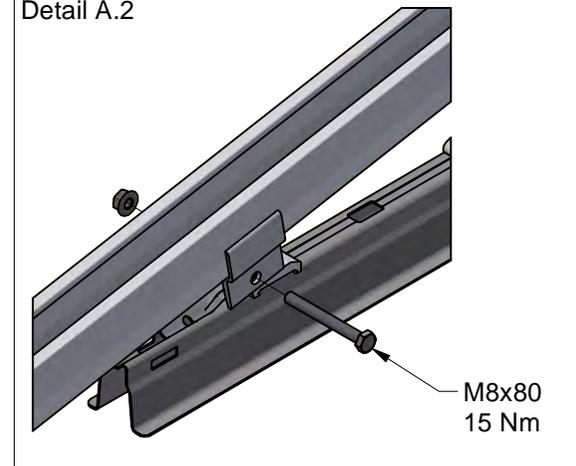


The 2400mm profile is mounted in the middle, with a 1175mm profile on each end.

ValkHint!

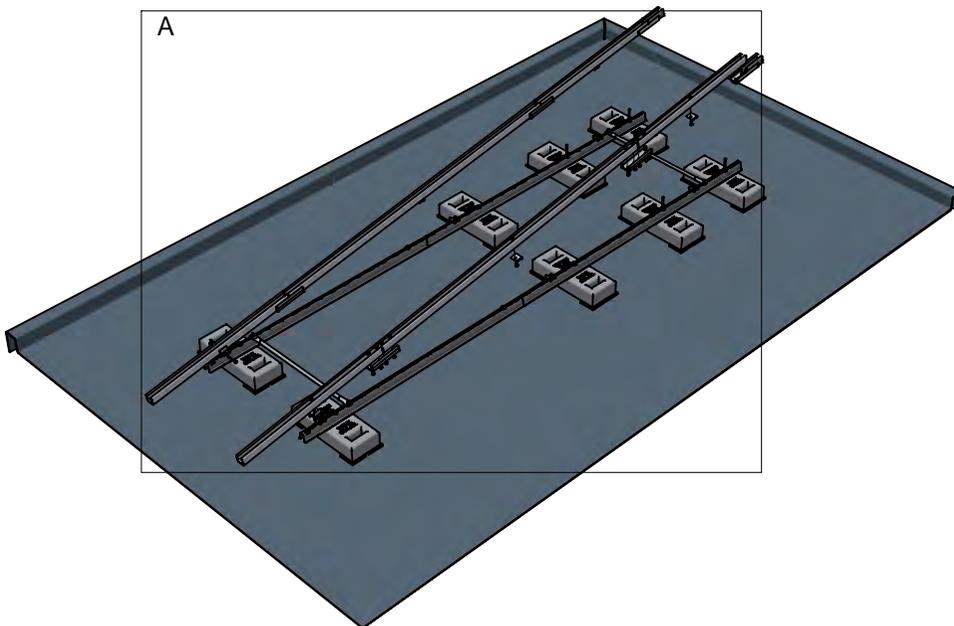
Create the aluminium profile with the connector pieces/couplings first. Then mount the profile to the roof carrier.

Detail A.2



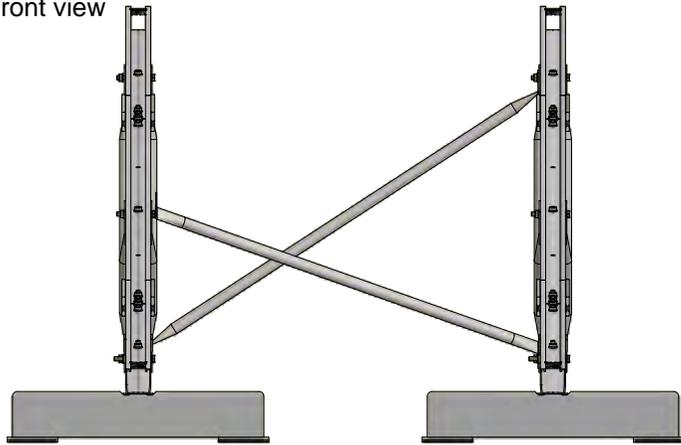
M8x80
15 Nm

A



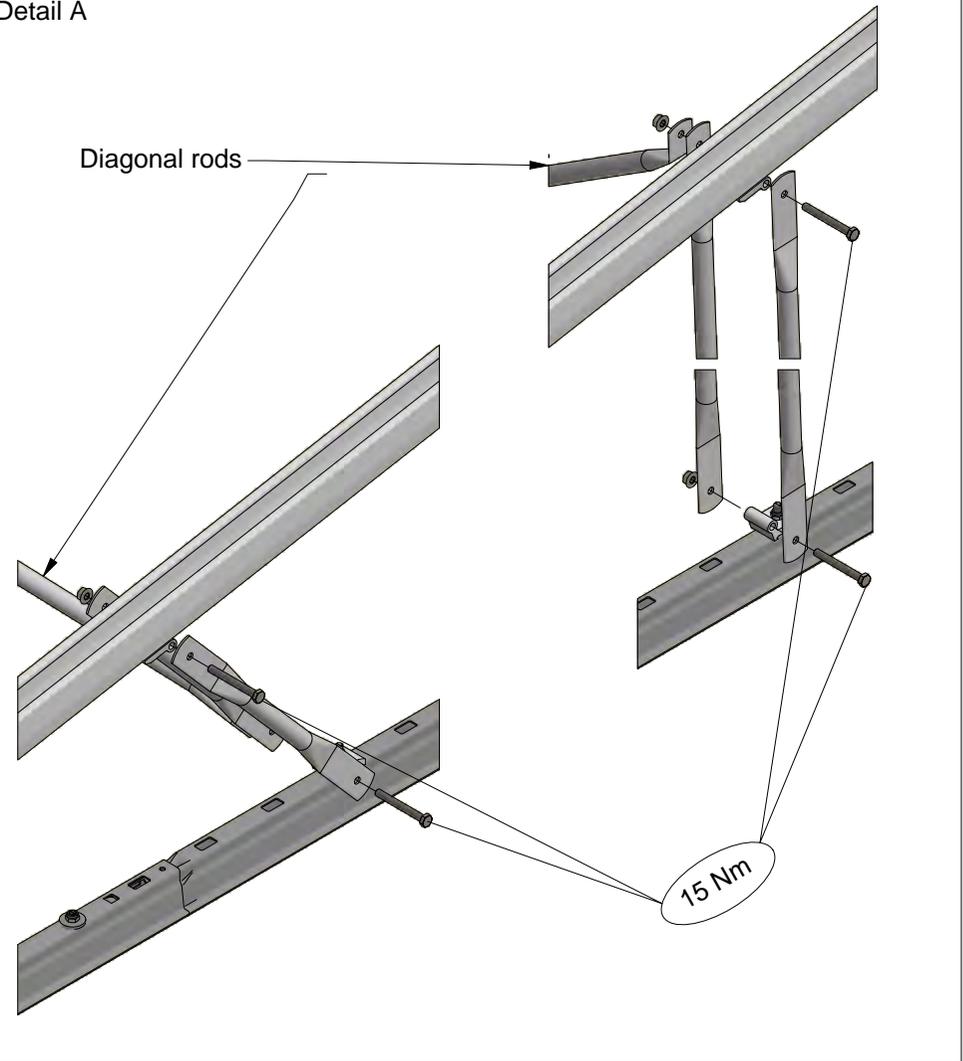


Front view

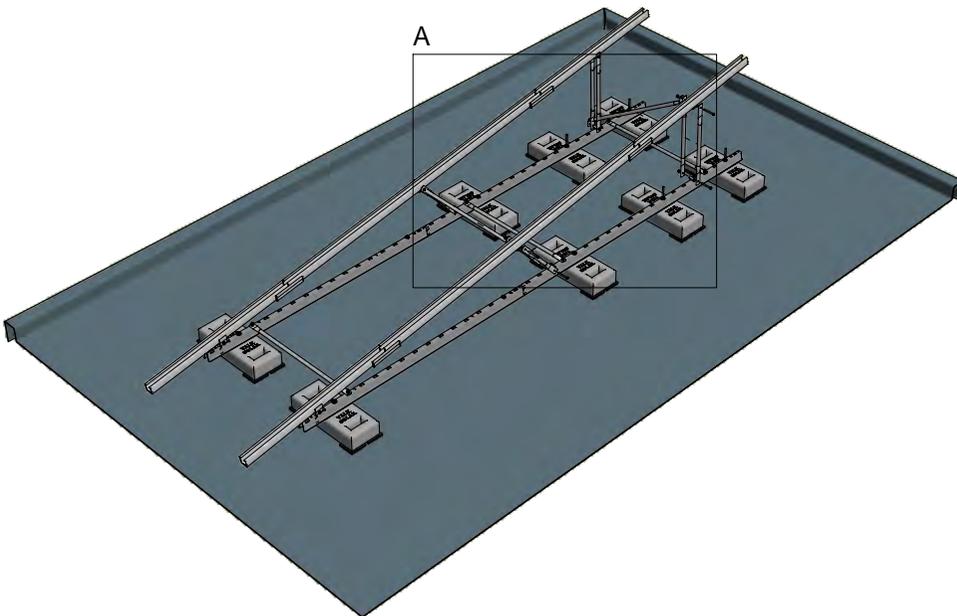


Make sure the diagonal push rods are mounted in opposite directions (crossed)

Detail A

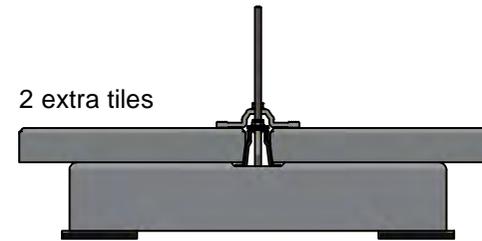
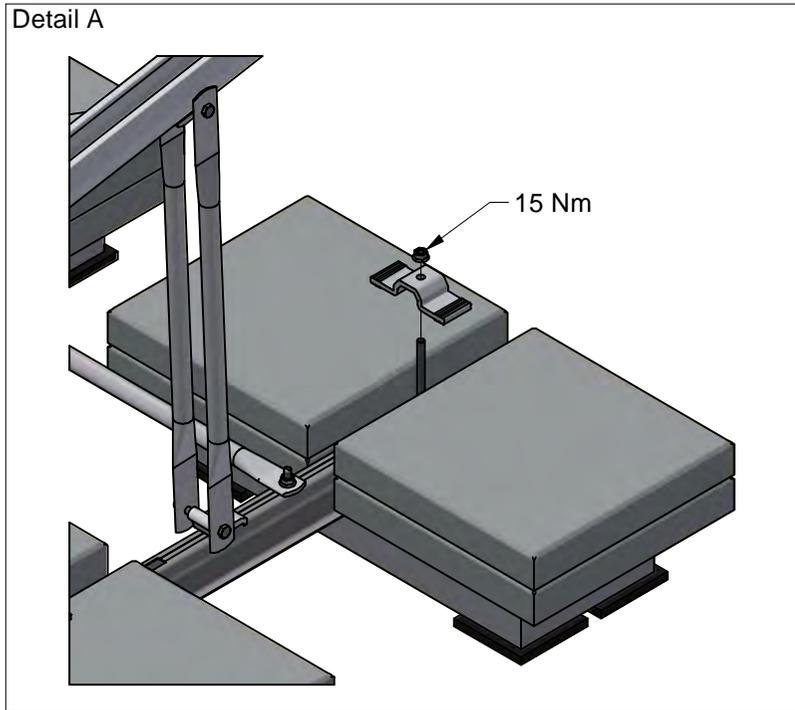


Mount the push rods between the aluminium profile and the roof carrier.

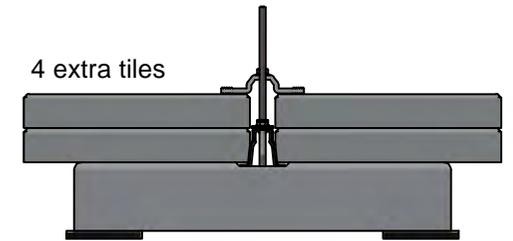




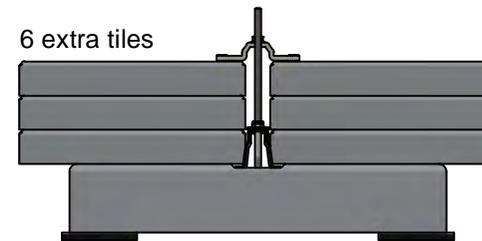
Detail A



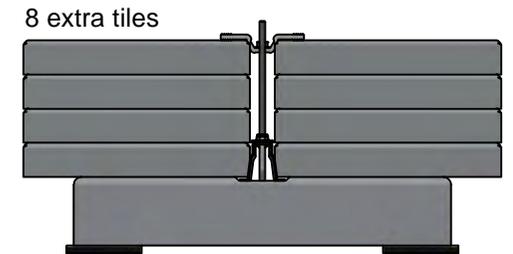
2 extra tiles



4 extra tiles

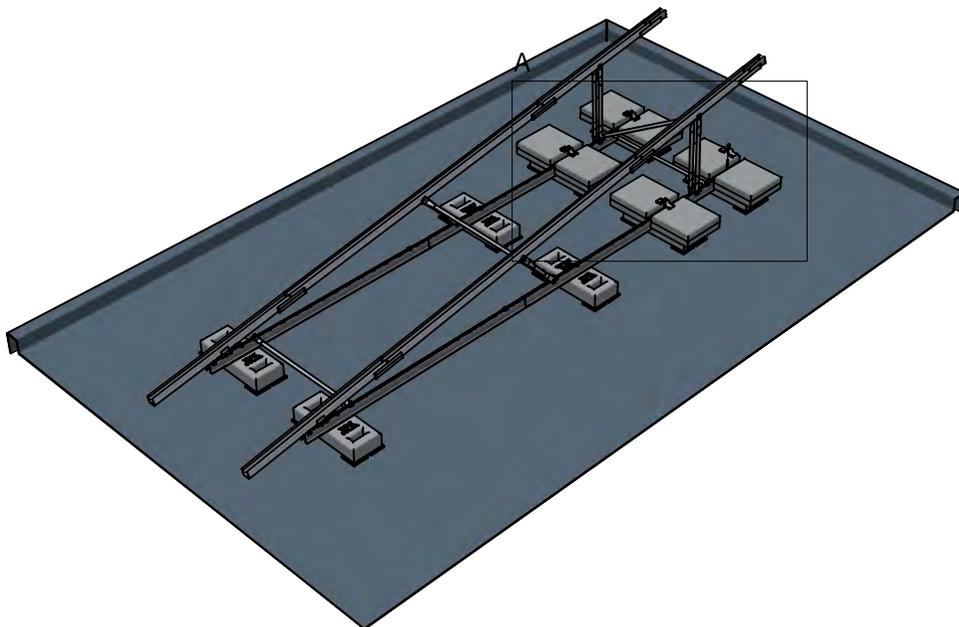


6 extra tiles



8 extra tiles

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



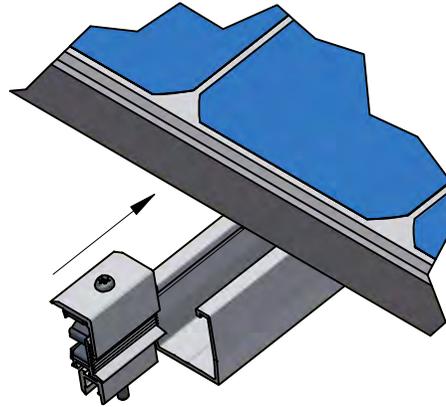


Step 1

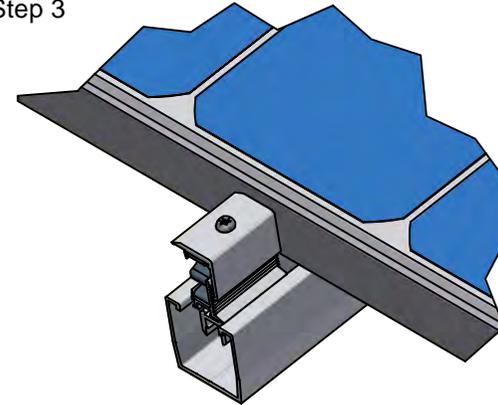


Take the end clamp out of its slot for an easier assembly.

Step 2

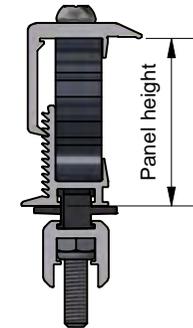


Step 3



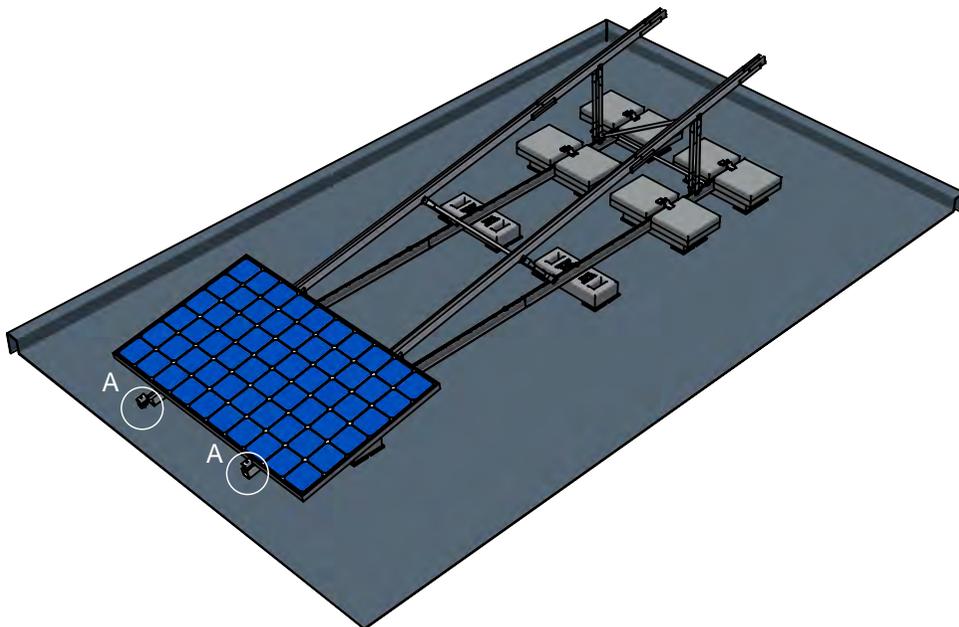
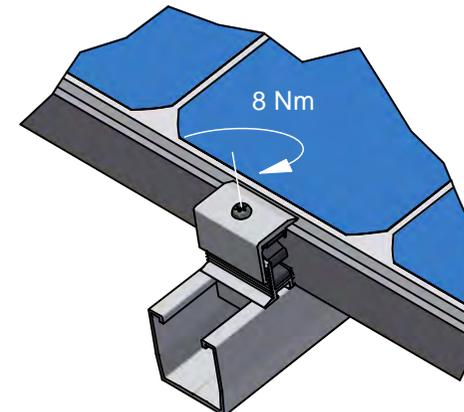
The end clamp can only be turned clockwise, so make sure the end clamp is placed the right way.

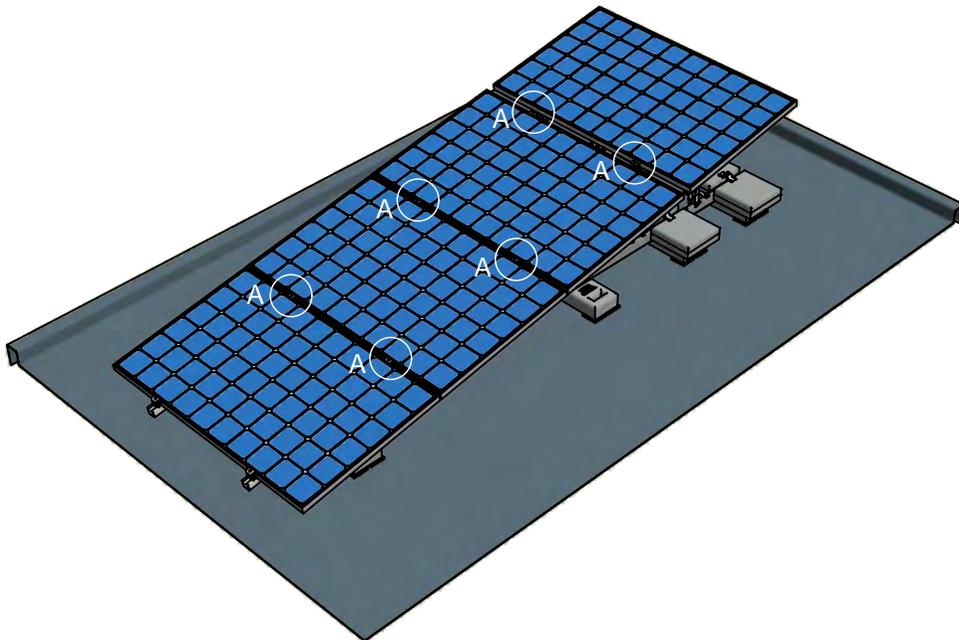
Step 4



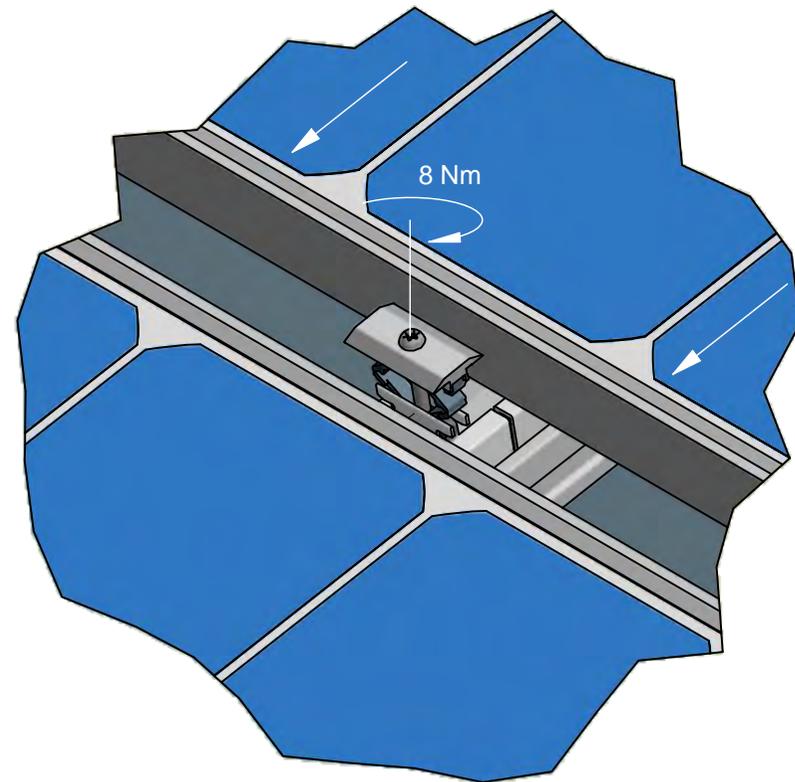
Put the end clamp in the right slot to continue the assembly.

Step 5

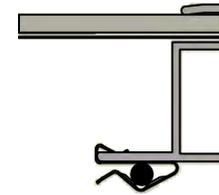
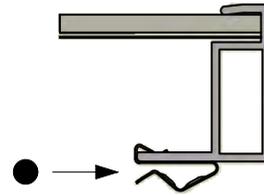
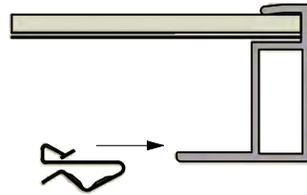




Detail A



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.

