Project information

SOLEN

Project name
Ipsen Biopharm - Cor Energy - Dgn01

Company
Cor Energy

Project location
12 Ash Rd N, Wrexham LL13 9JT, UK

Project reference
Dgn01

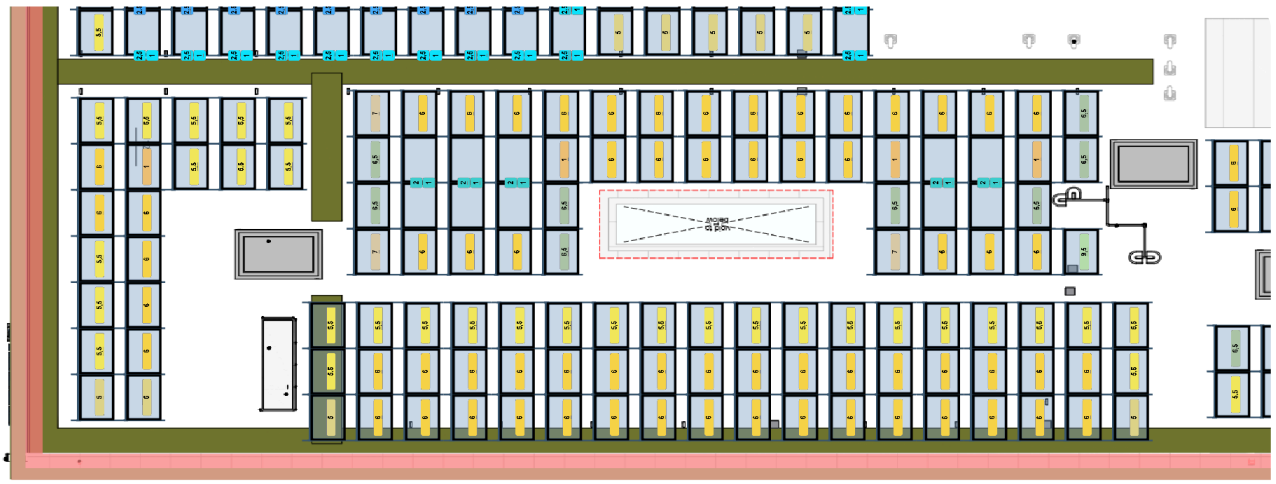
DC Power
130,66 kWp

Module quantity
278 pcs

Brand/type of solar panel
AIKO Solar 470Wp

Dimensions/weight solar panel
1.757 x 1.134 x 30 mm / 20,6 kg

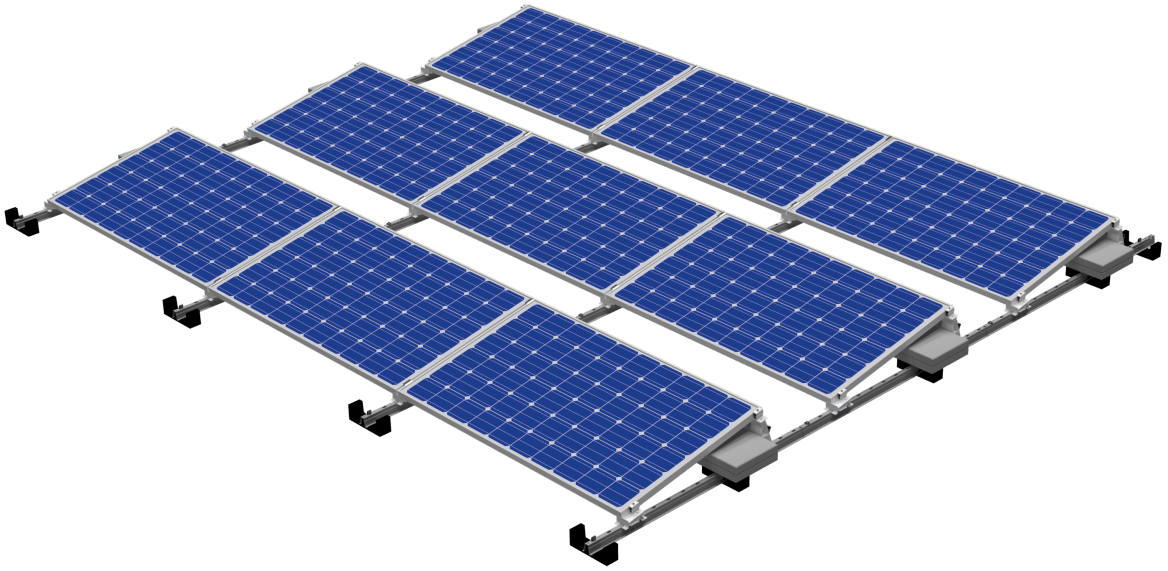
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26 March 2025 at 16:52

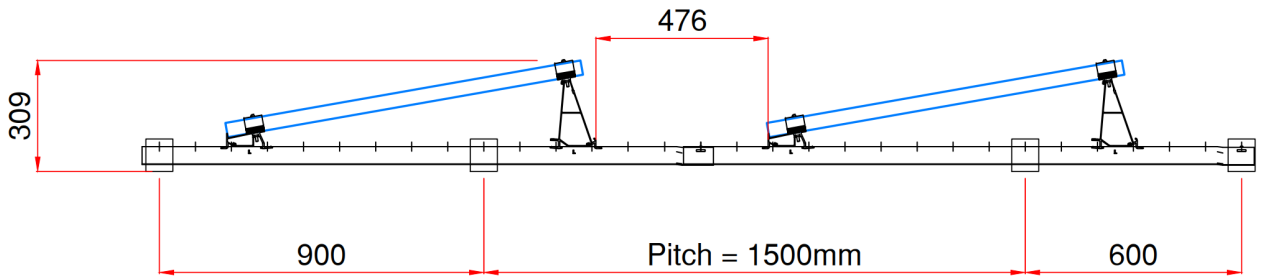


System specification

ValkPro+ L10 South

System type	ValkPro+	Fixation	Ballast
Orientation	Landscape	Foot type	Rubber tile carrier
Module tilt	10°	Colour	Grey
Row pitch	1.500 mm	Side plates	Yes

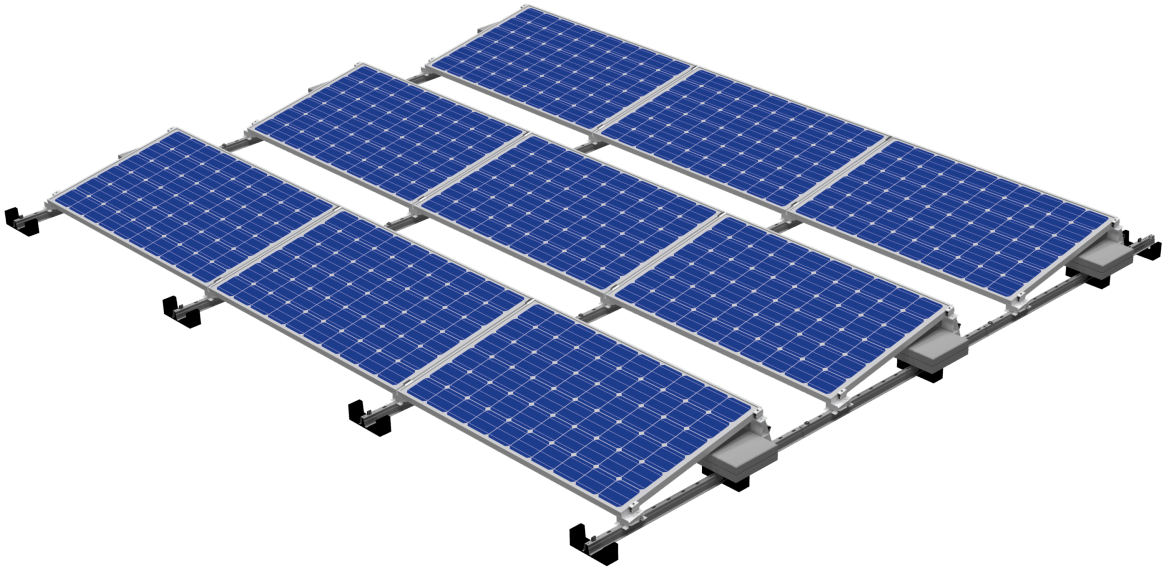


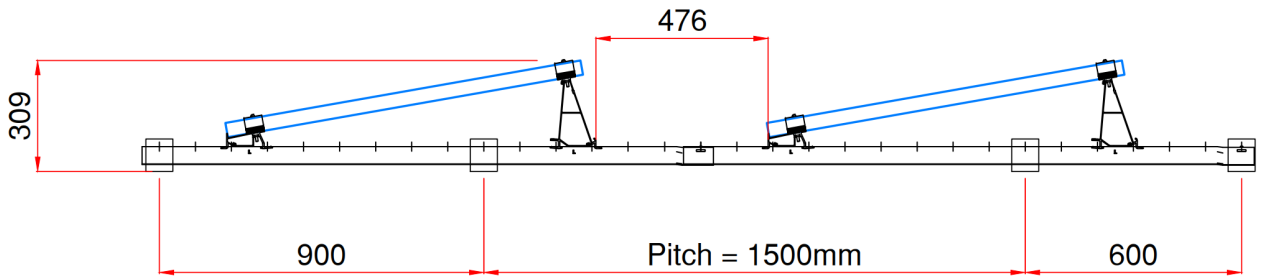


System specification

ValkPro+ L10 South

System type	ValkPro+	Fixation	Ballast
Orientation	Landscape	Foot type	Rubber tile carrier
Module tilt	10°	Colour	Grey
Row pitch	1.500 mm	Side plates	No





Wind and snow load

Country

United Kingdom

Standard - Wind actions

BS EN 1991-1-4/NA:2008

Basic Wind Speed Vb,0

23 m/s

Standard - Snow loads

BS EN 1991-1-3/NA:2018

Snow load zone

Zone 3

Height above sea level

38,33 m

Design lifetime

25 years

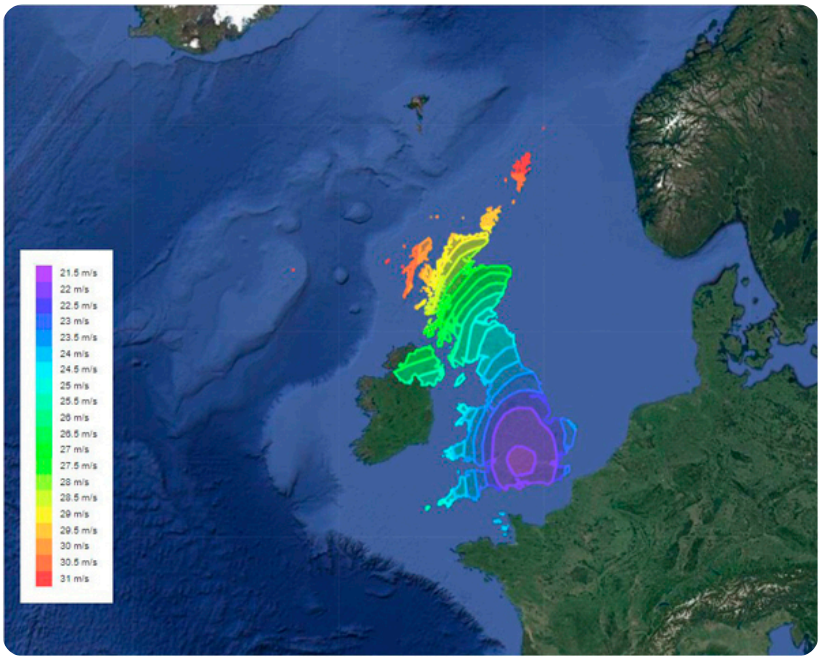
Consequence Class

CC1 (EN 1990)

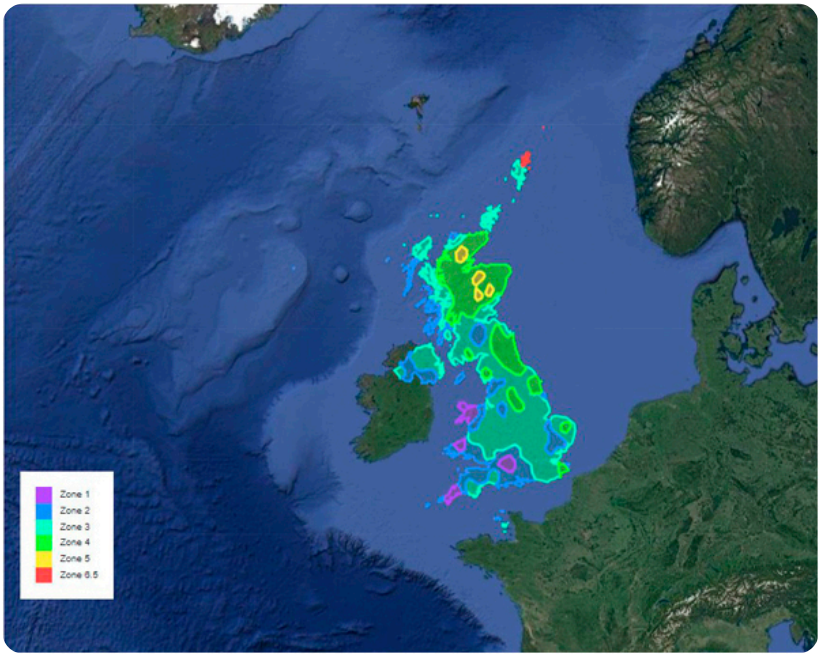
Orography factor

Co = 1,000

Wind speed map



Snow load map



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Terrain category



Terrain category Country

Countryside or rural area with low vegetation such as grass and isolated obstacles (trees, buildings)



Highest building (m)

20,00 m

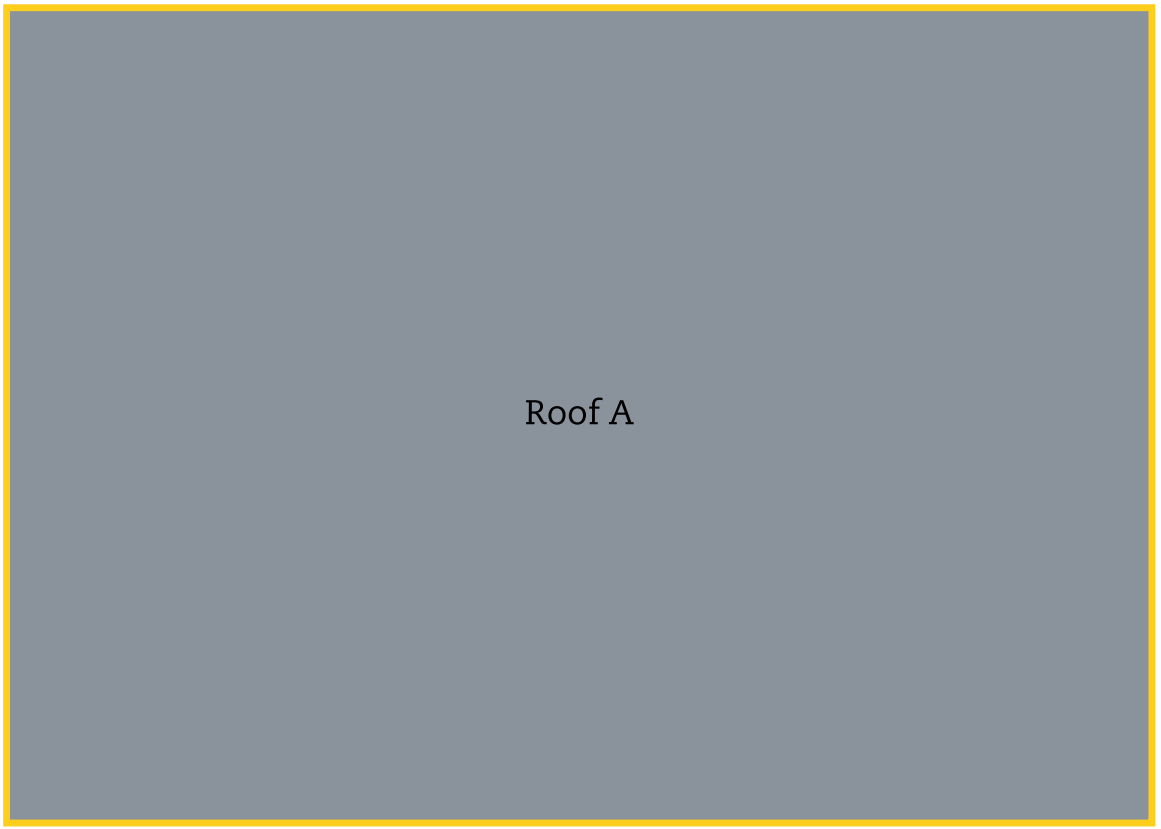
Perimeter radius (m)

500

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Project overview





Roof A | Summary

Roof properties

Height	20,00 m	Roof area	1.440,7 m²
Slope	3°	PV-system area	736,8 m²
Roof type	Flat	Cladding	Membrane roof
Parapet height	1,90 m	Roof membrane type	PVC
Parapet width	0,45 m	Number of panels	278 pcs
Friction coefficient	0,6	Power	130,66 kWp

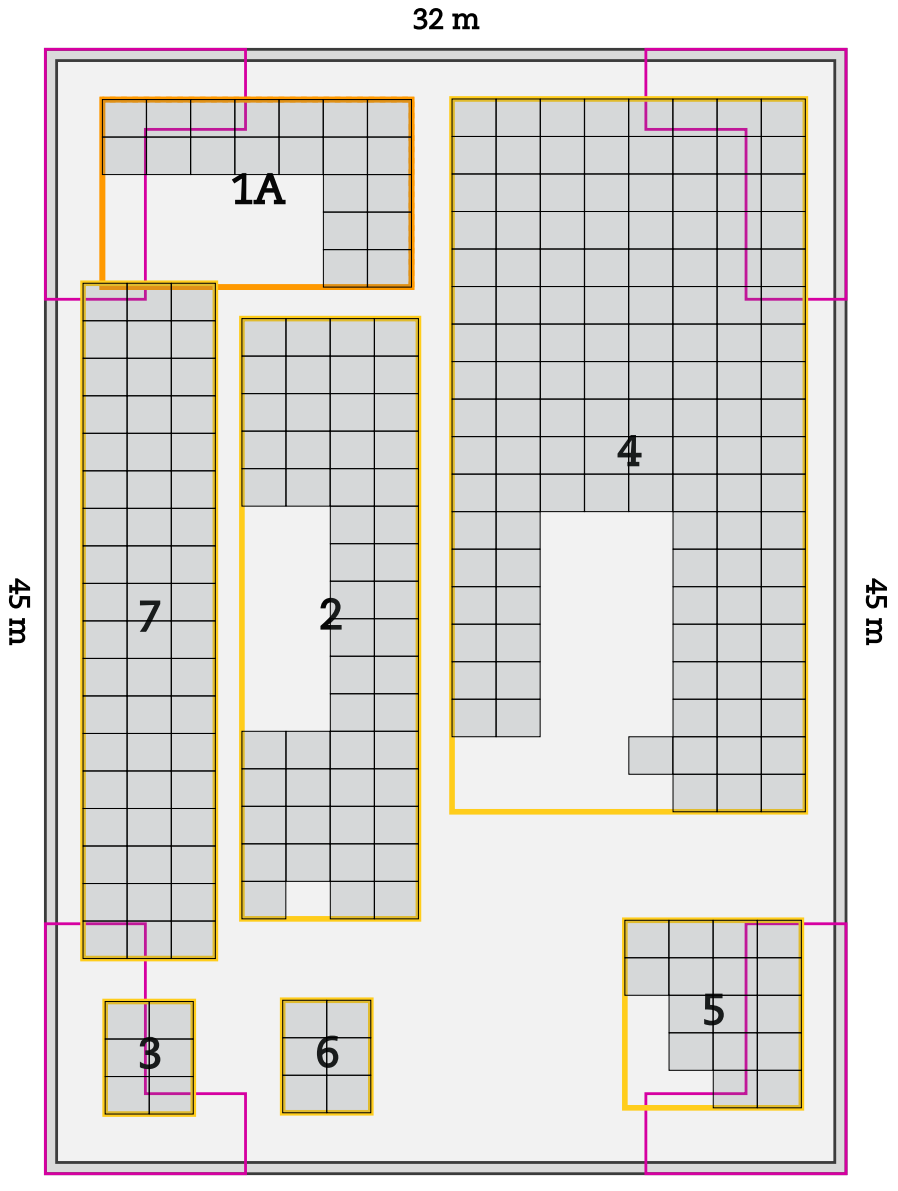
Eurocode calculations

Peak wind velocity pressure	0,89 kPa	Combination factor for wind load	0,5
Characteristic snow load	0,47 kPa	Combination factor for snow load	0,5
Min. point load on roof	10 kPa		
Max. point load on roof	29 kPa		
Load case	Dead weight (system + ballast)		

Weight calculations

Weight of solar panels	5.727 kg	Average weight on roof area	14,3 kg/m²
Weight of mounting system	2.960 kg	Average weight on PV-system area	28 kg/m²
Ballast weight	11.909 kg		
Total weight	20.596 kg		

Roof A | Field 1 | Solar panels

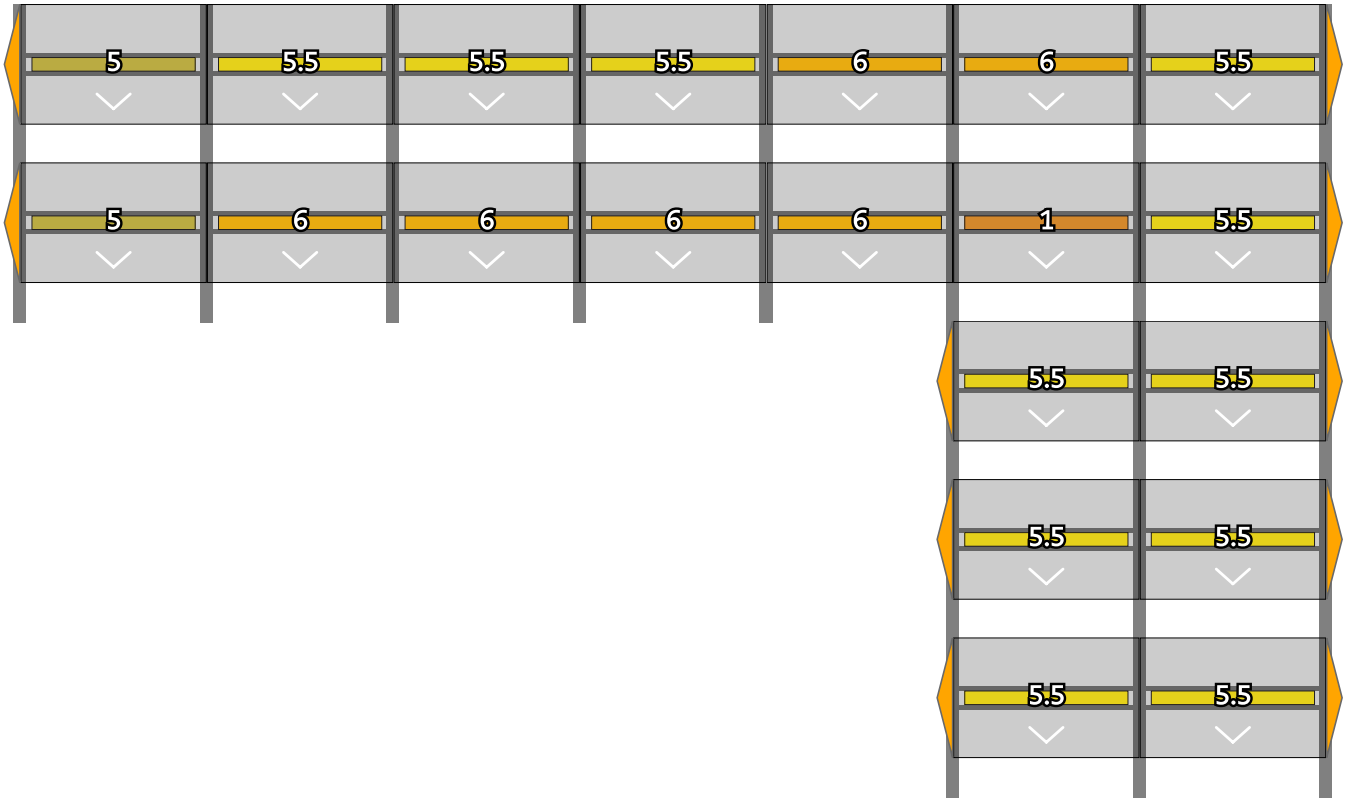


Corner/edge zone

Components

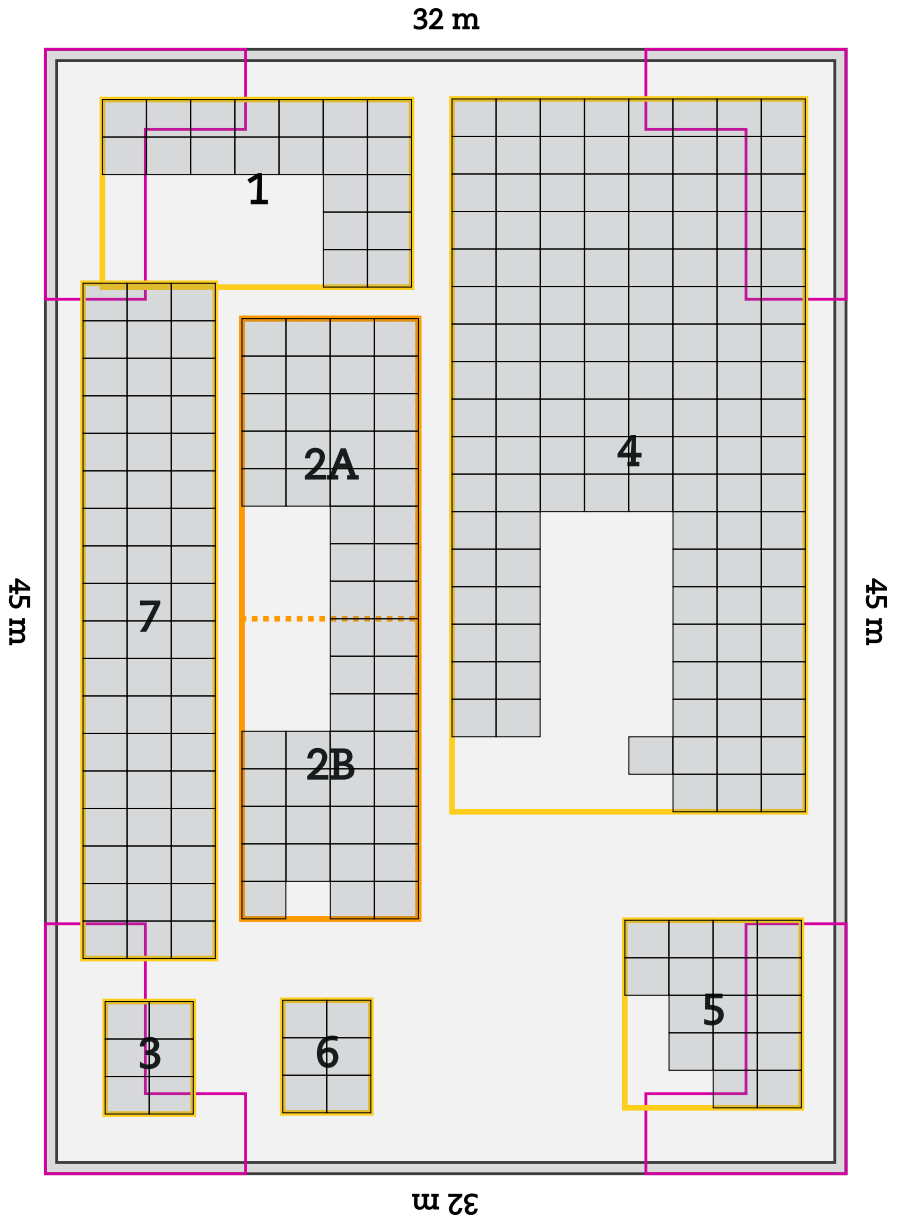
Module	20 Pcs	Galv roof carrier L=1500x1,5mm	25 Pcs
Alu rear foot ValkPro+ L10° middle	15 Pcs	Galv side plate ValkPro+ L10° universal	10 Pcs
Alu rear foot ValkPro+ L10° side	10 Pcs	SS thread-forming bolt M6x20mm - T30	55 Pcs
Alu front foot ValkPro+ P/L10° middle	15 Pcs	Rubber tile carrier - click - ValkPro+ PVC (new)	41 Pcs
Alu front foot ValkPro+ P/L10° side	10 Pcs		
SS hammerhead bolt M8x20mm + lock nut	17 Pcs	Galv. ballast carrier ValkPro+ L=1979mm	40 Pcs
Galv back plate ValkPro+ L10° L=1980mm	20 Pcs	Ballast full tiles	102 Pcs
		Ballast half tiles	11 Pcs

Roof A | Field 1 - part 1A | Solar panels



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Roof A | Field 2 | Solar panels

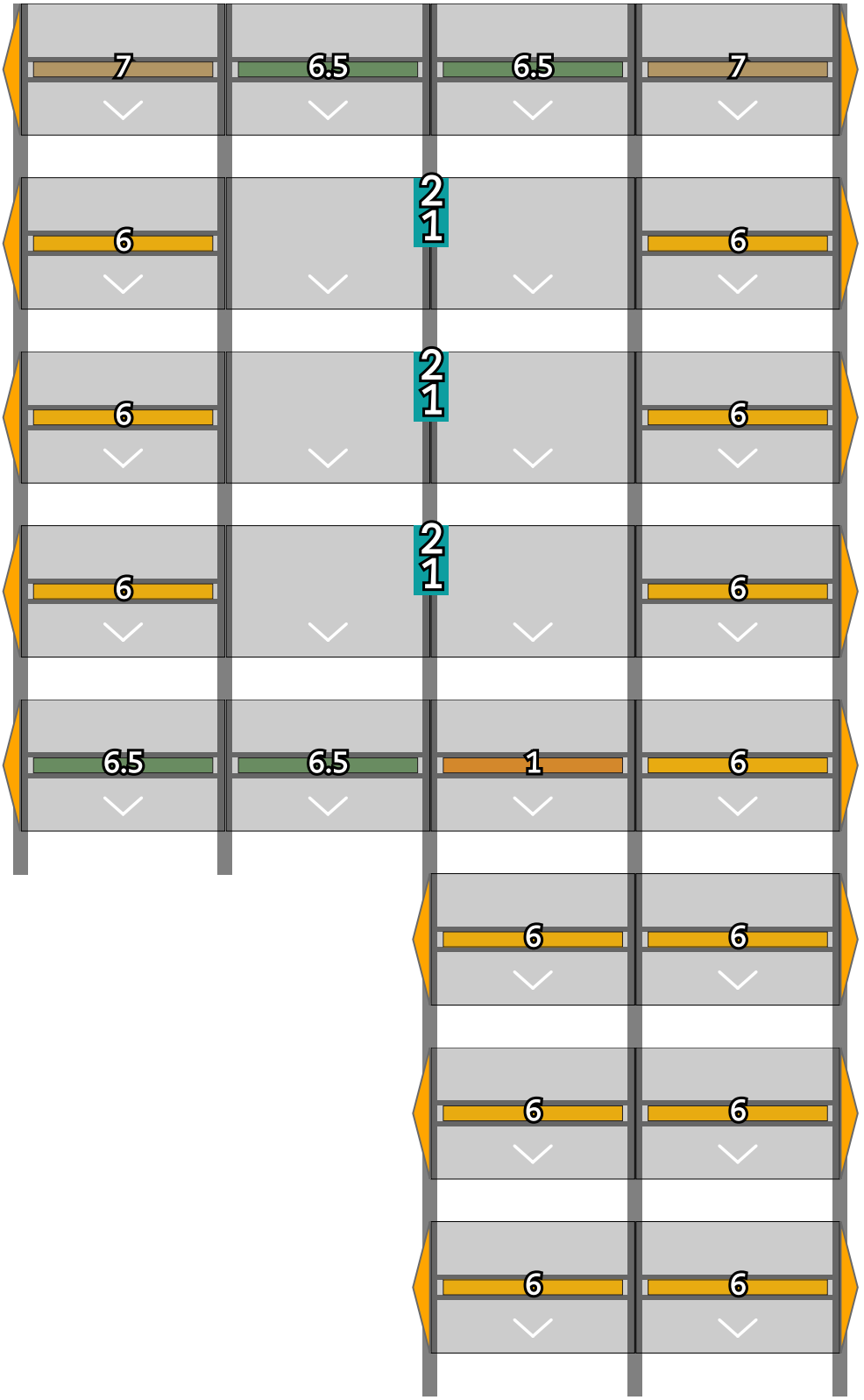


Corner/edge zone

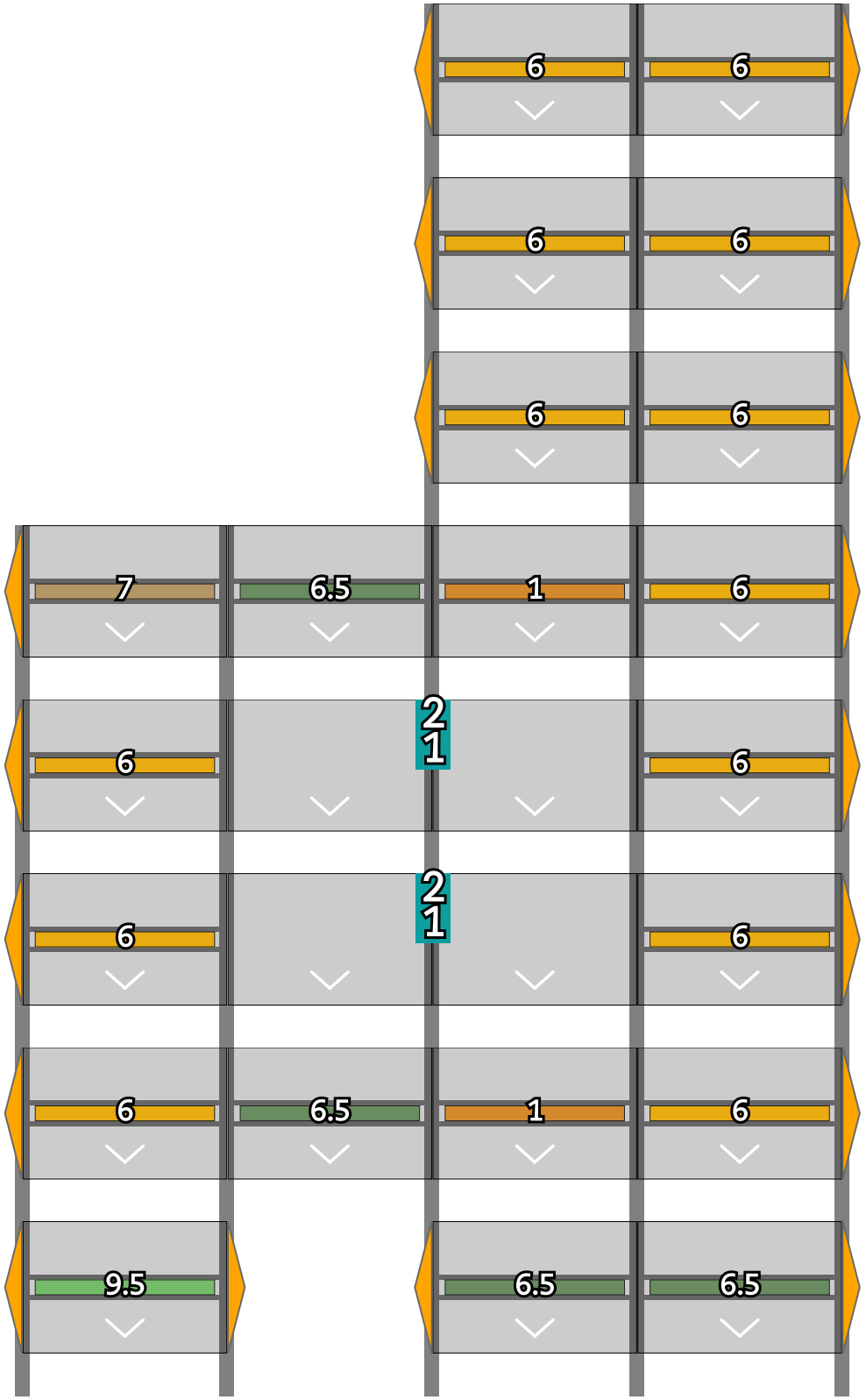
Components

Module	51 Pcs	Galv side plate ValkPro+ L10° universal	34 Pcs
Alu rear foot ValkPro+ L10° middle	34 Pcs	SS thread-forming bolt M6x20mm - T30	170 Pcs
Alu rear foot ValkPro+ L10° side	34 Pcs	Rubber tile carrier - click - ValkPro+ PVC (new)	82 Pcs
Alu front foot ValkPro+ P/L10° middle	34 Pcs	Galv. ballast carrier ValkPro+ L=1979mm	82 Pcs
Alu front foot ValkPro+ P/L10° side	34 Pcs	Alu. ballast wing ValkPro+	5 Pcs
SS hammerhead bolt M8x20mm + lock nut	61 Pcs	Ballast full tiles	252 Pcs
Galv back plate ValkPro+ L10° L=1980mm	51 Pcs	Ballast half tiles	9 Pcs
Galv roof carrier L=1500x1,5mm	68 Pcs		

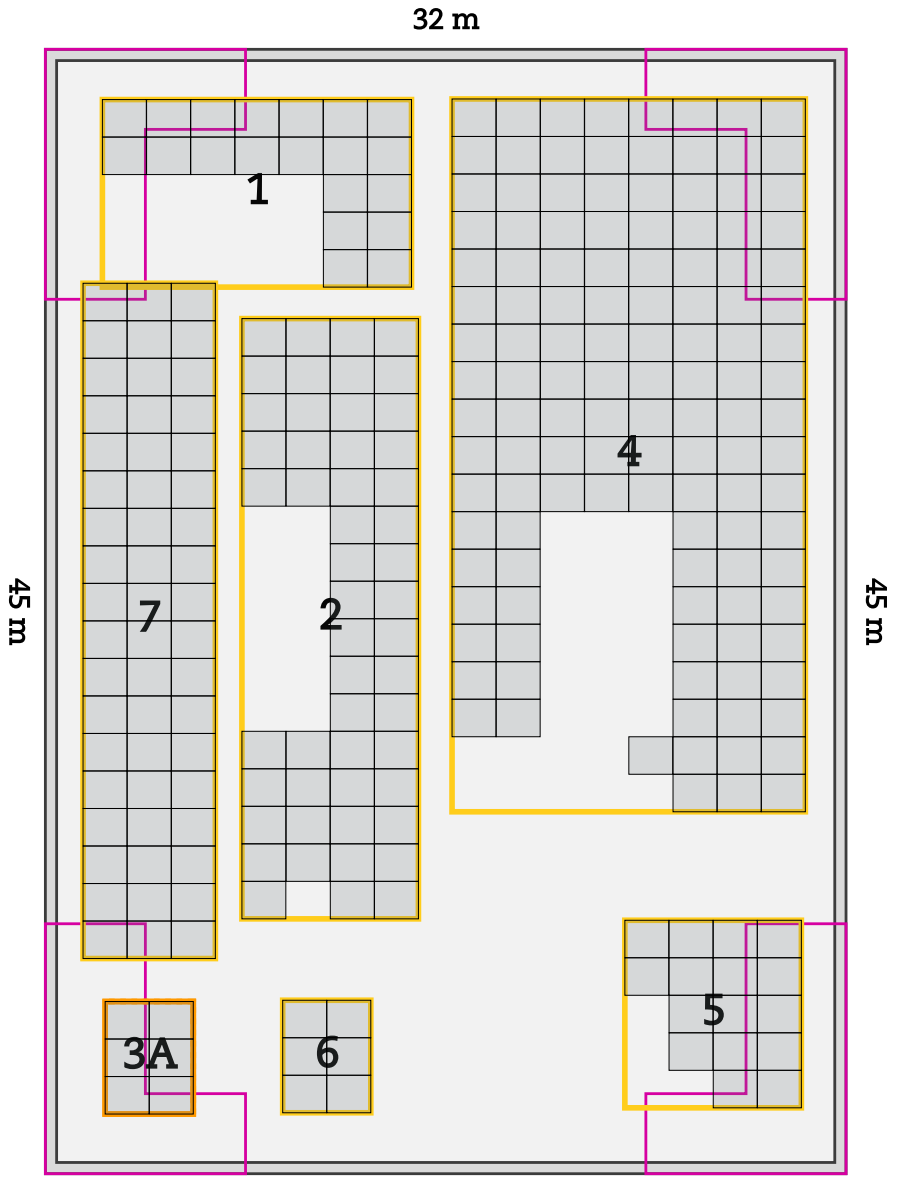
Roof A | Field 2 - part 2A | Solar panels



Roof A | Field 2 - part 2B | Solar panels



Roof A | Field 3 | Solar panels



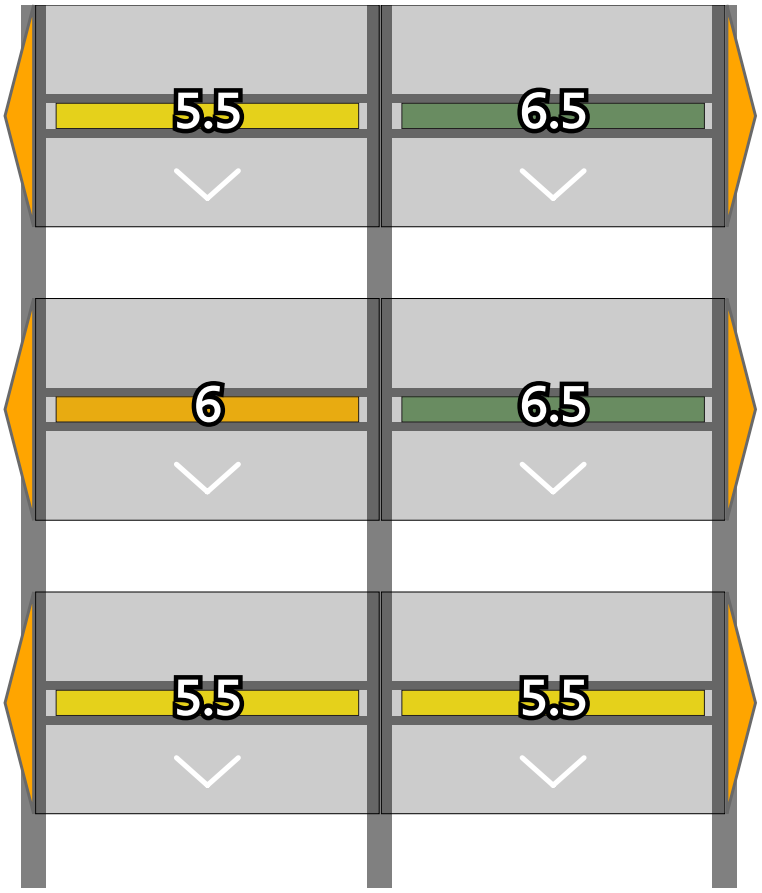
Corner/edge zone

Components

Module	6 Pcs	Galv roof carrier L=1500x1,5mm	9 Pcs
Alu rear foot ValkPro+ L10° middle	3 Pcs	Galv side plate ValkPro+ L10° universal	6 Pcs
Alu rear foot ValkPro+ L10° side	6 Pcs	SS thread-forming bolt M6x20mm - T30	27 Pcs
Alu front foot ValkPro+ P/L10° middle	3 Pcs	Rubber tile carrier - click - ValkPro+ PVC (new)	15 Pcs
Alu front foot ValkPro+ P/L10° side	6 Pcs		
SS hammerhead bolt M8x20mm + lock nut	6 Pcs	Galv. ballast carrier ValkPro+ L=1979mm	12 Pcs
Galv back plate ValkPro+ L10° L=1980mm	6 Pcs	Ballast full tiles	33 Pcs
		Ballast half tiles	5 Pcs

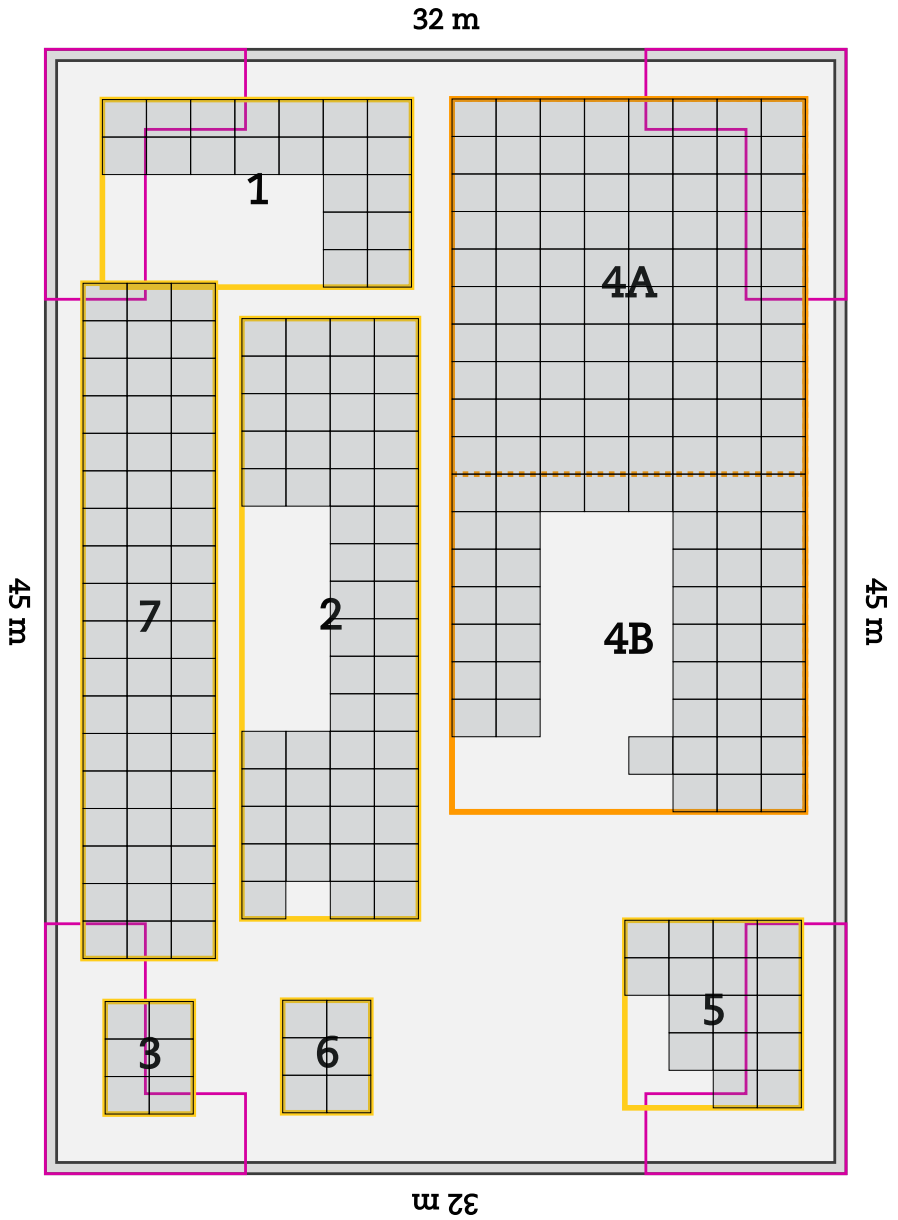
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Roof A | Field 3 - part 3A | Solar panels



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Roof A | Field 4 | Solar panels



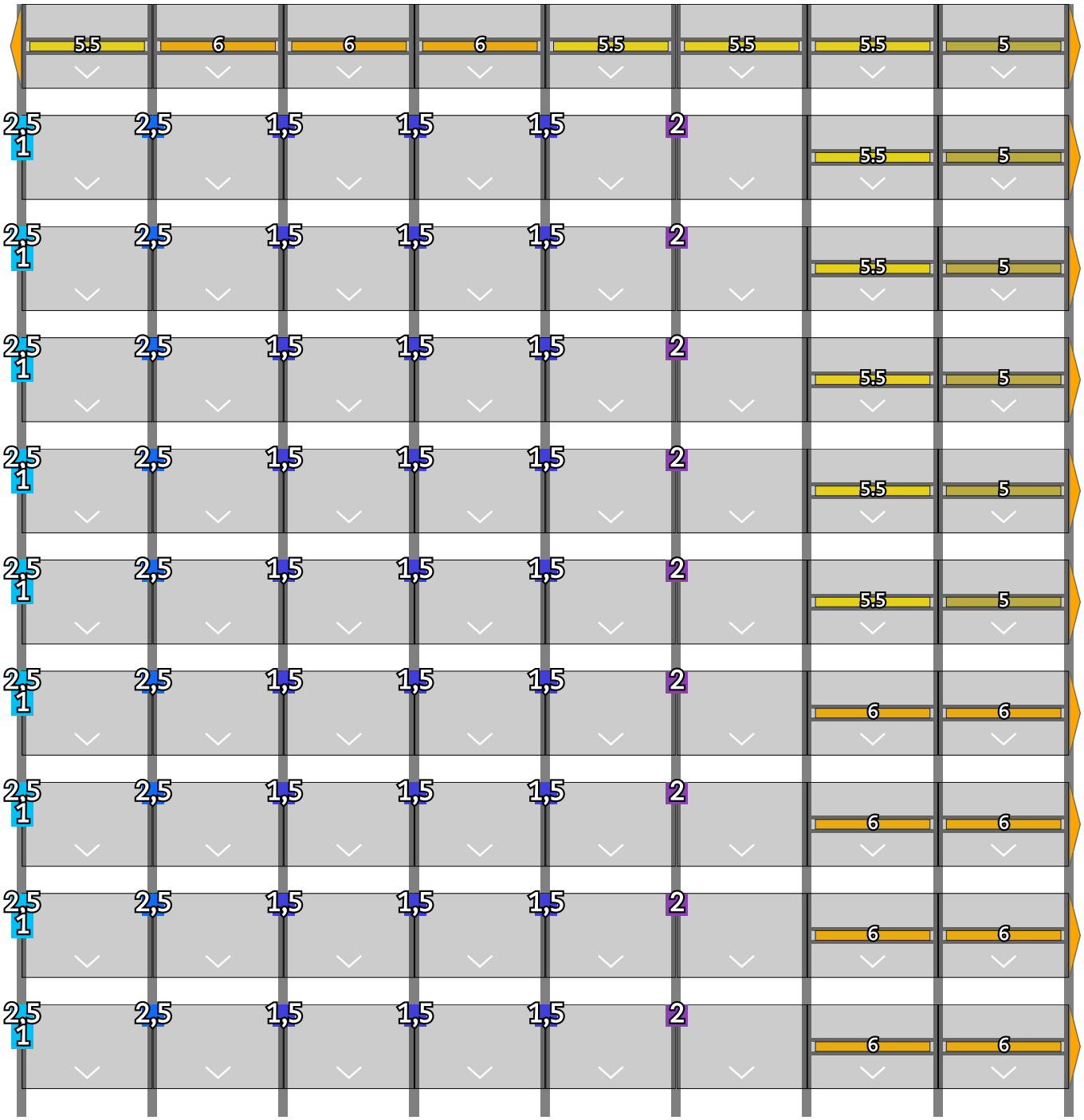
Corner/edge zone

Components

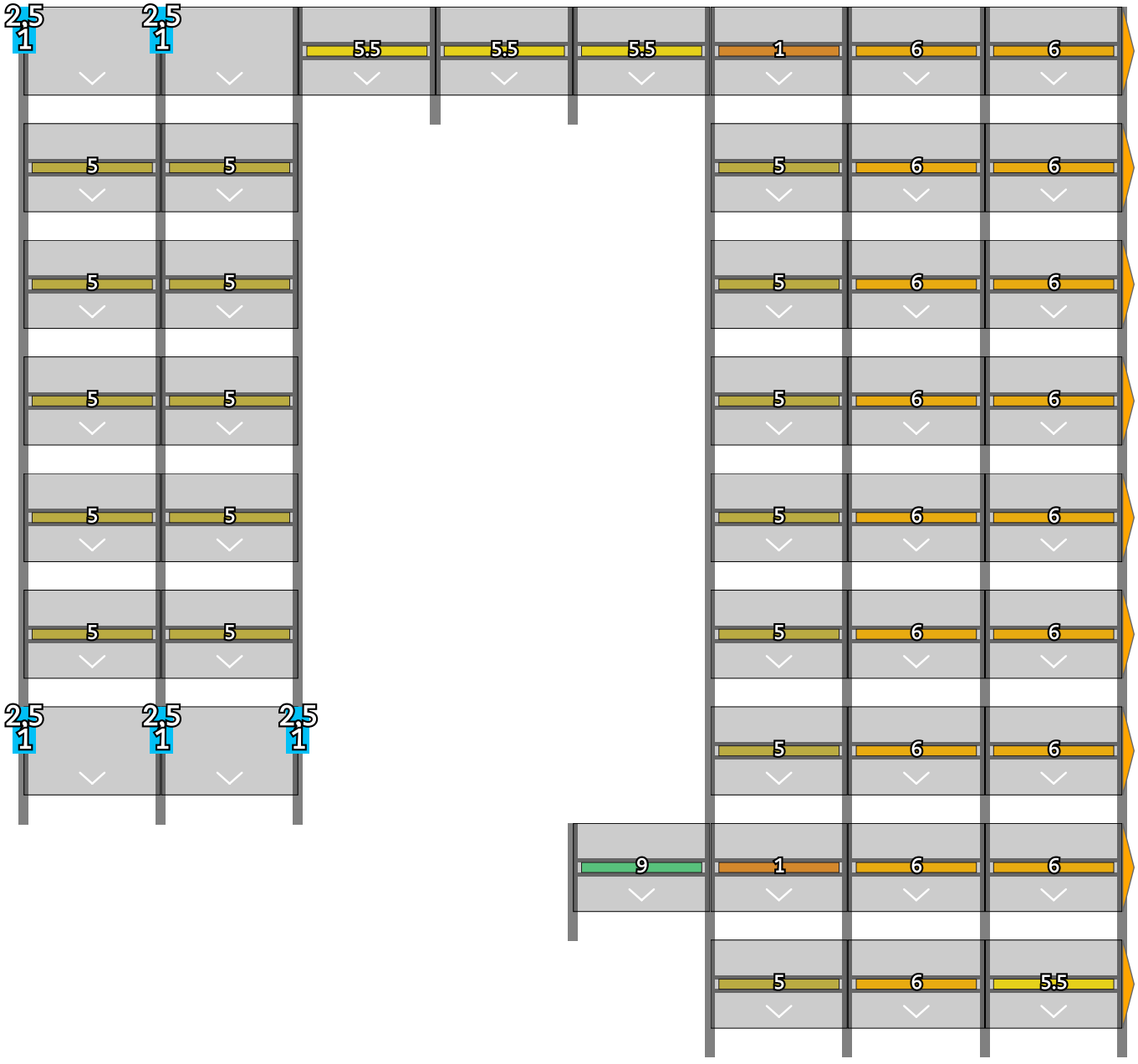
Module	125 Pcs	Galv side plate ValkPro+ L10° universal	20 Pcs
Alu rear foot ValkPro+ L10° middle	100 Pcs	SS thread-forming bolt M6x20mm - T30	210 Pcs
Alu rear foot ValkPro+ L10° side	50 Pcs	Rubber tile carrier - click - ValkPro+ PVC (new)	170 Pcs
Alu front foot ValkPro+ P/L10° middle	100 Pcs	Galv. ballast carrier ValkPro+ L=1979mm	134 Pcs
Alu front foot ValkPro+ P/L10° side	50 Pcs	Alu. ballast wing ValkPro+	14 Pcs
SS hammerhead bolt M8x20mm + lock nut	140 Pcs	Ballast full tiles	464 Pcs
Galv back plate ValkPro+ L10° L=1980mm	125 Pcs	Ballast half tiles	63 Pcs
Galv roof carrier L=1500x1,5mm	150 Pcs		

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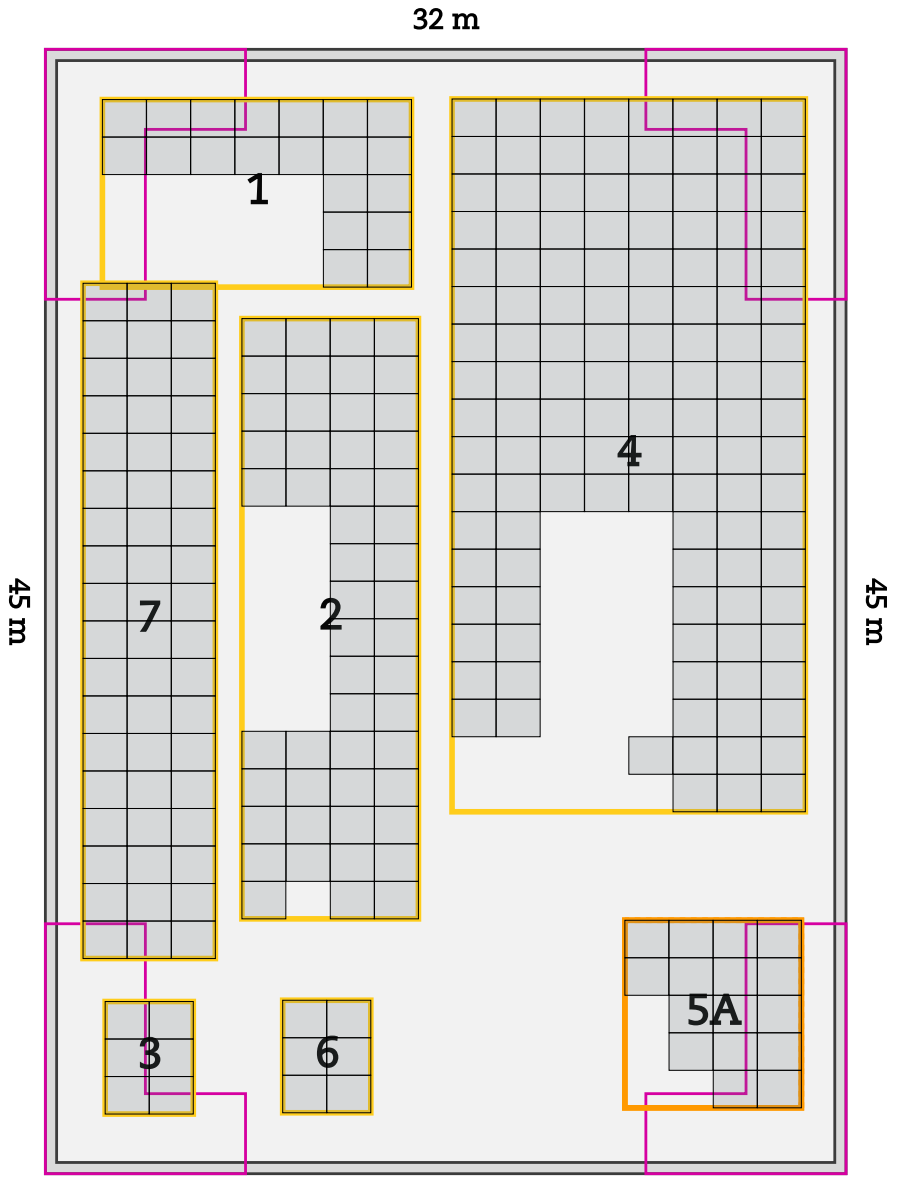
Roof A | Field 4 - part 4A | Solar panels



Roof A | Field 4 - part 4B | Solar panels



Roof A | Field 5 | Solar panels

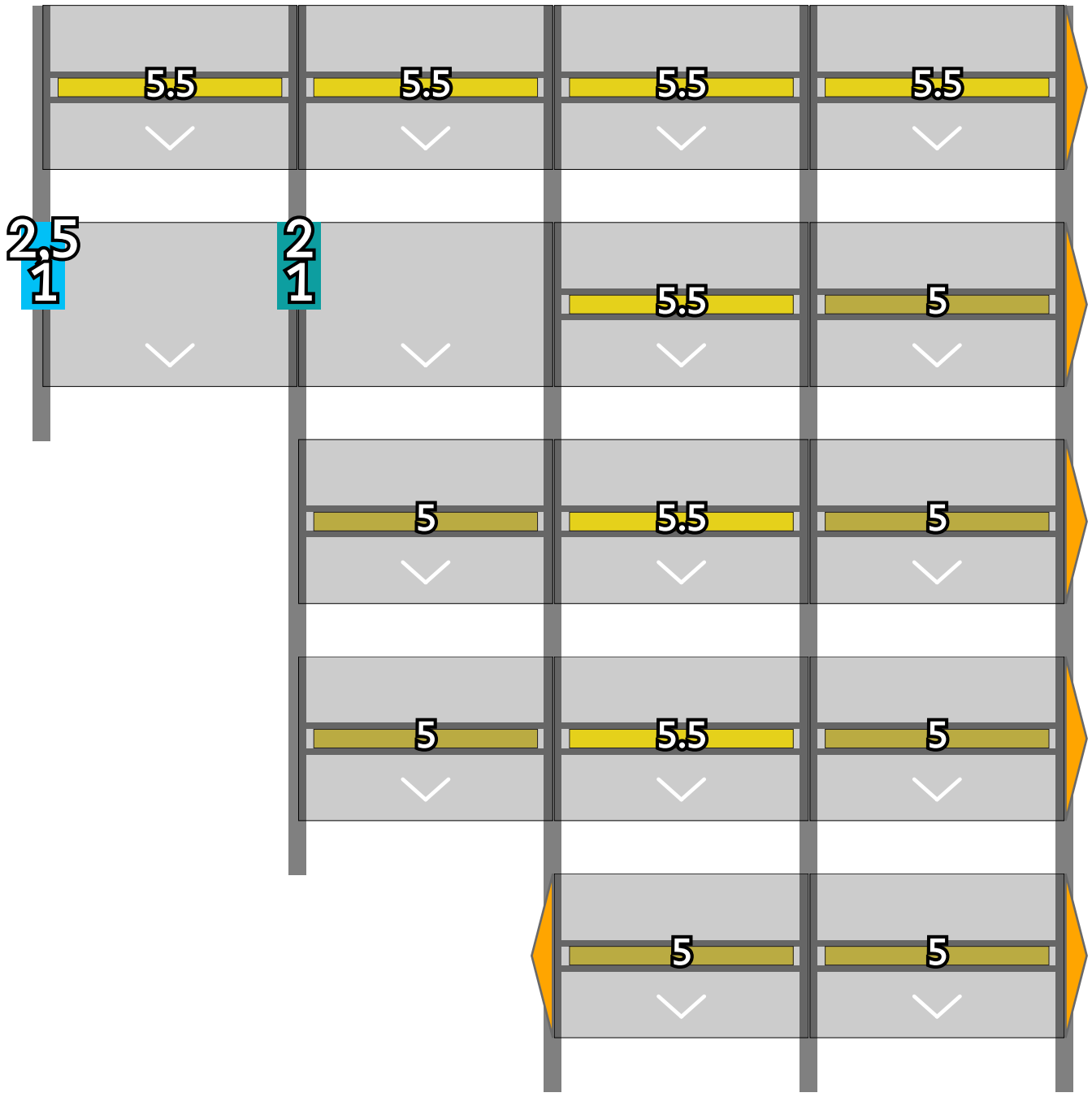


Corner/edge zone

Components

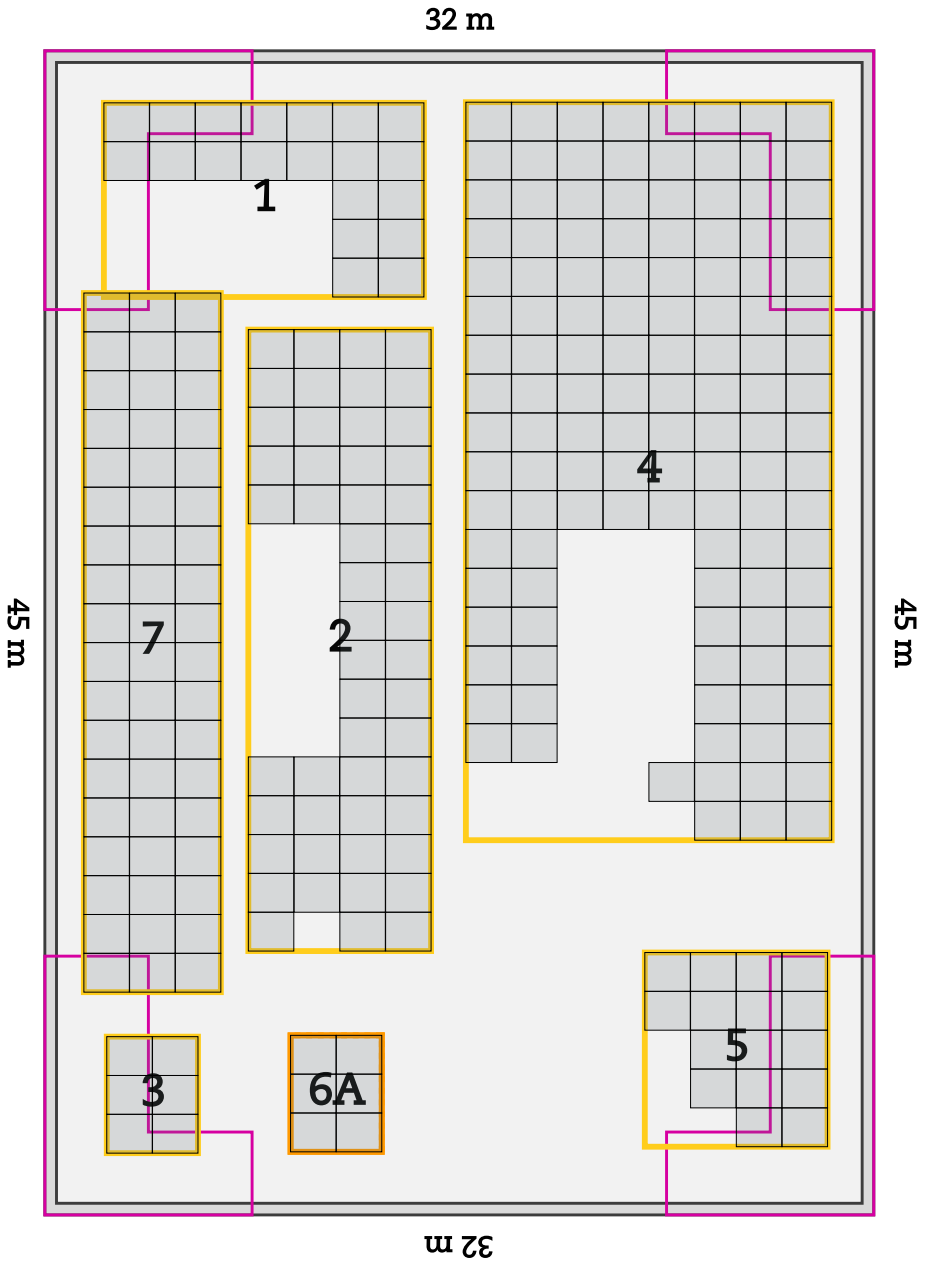
Module	16 Pcs	SS thread-forming bolt M6x20mm - T30	39 Pcs
Alu rear foot ValkPro+ L10° middle	11 Pcs	Rubber tile carrier - click - ValkPro+ PVC (new)	31 Pcs
Alu rear foot ValkPro+ L10° side	10 Pcs	Galv. ballast carrier ValkPro+ L=1979mm	28 Pcs
Alu front foot ValkPro+ P/L10° middle	11 Pcs	Galv side plate ValkPro+ L10° universal	6 Pcs
Alu front foot ValkPro+ P/L10° side	10 Pcs	Alu. ballast wing ValkPro+	2 Pcs
SS hammerhead bolt M8x20mm + lock nut	16 Pcs	Ballast full tiles	76 Pcs
Galv back plate ValkPro+ L10° L=1980mm	16 Pcs	Ballast half tiles	8 Pcs
Galv roof carrier L=1500x1,5mm	21 Pcs		

Roof A | Field 5 - part 5A | Solar panels



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Roof A | Field 6 | Solar panels

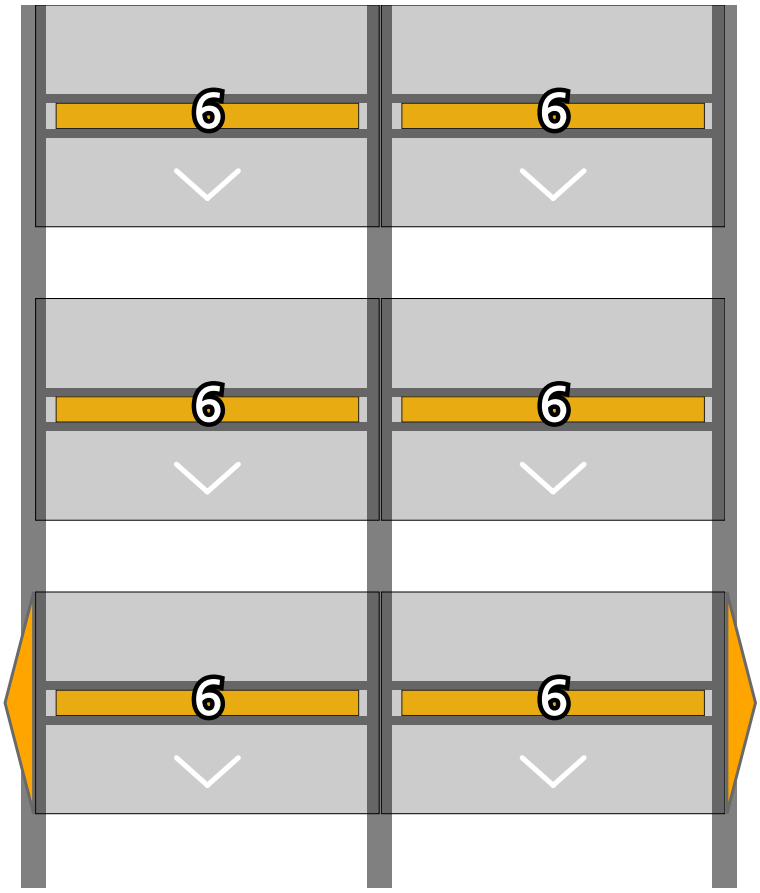


Corner/edge zone

Components

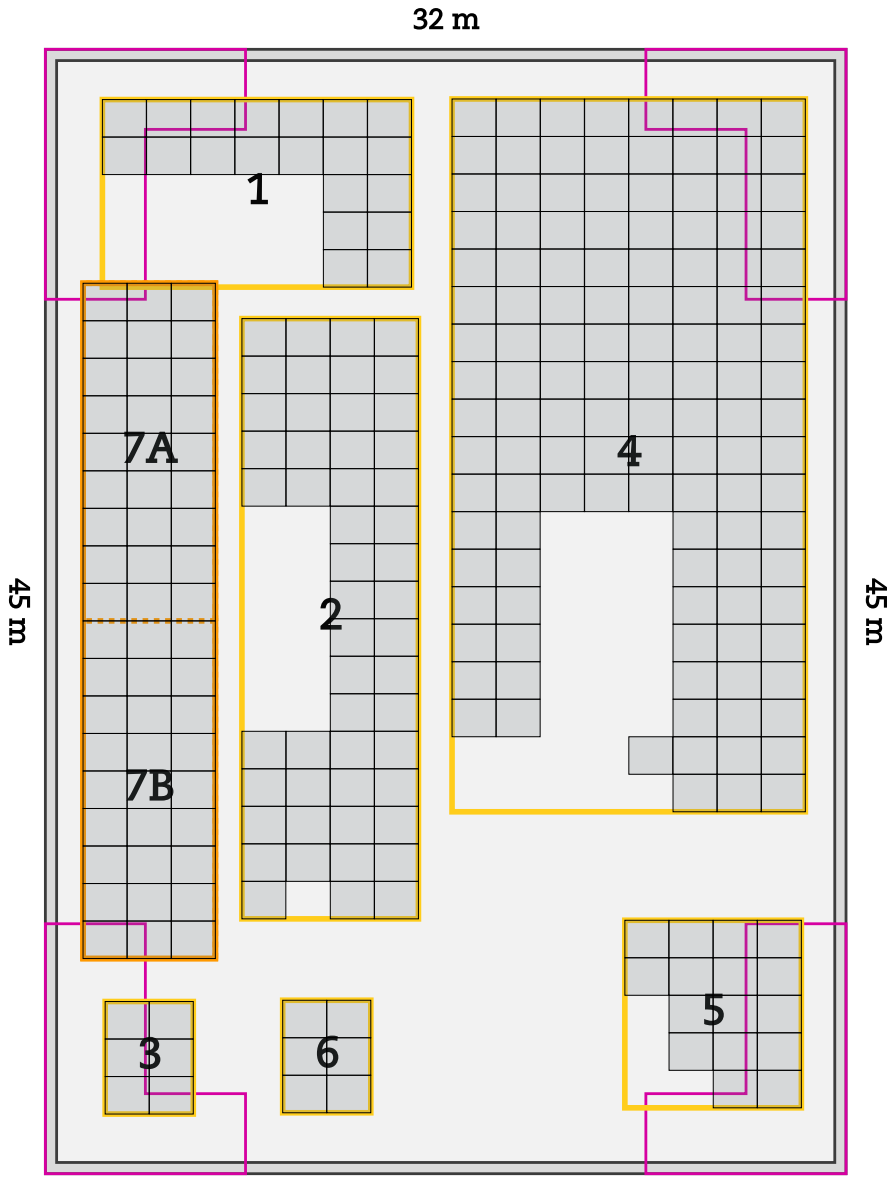
Module	6 Pcs	Galv roof carrier L=1500x1,5mm	9 Pcs
Alu rear foot ValkPro+ L10° middle	3 Pcs	SS thread-forming bolt M6x20mm - T30	15 Pcs
Alu rear foot ValkPro+ L10° side	6 Pcs	Rubber tile carrier - click - ValkPro+ PVC (new)	15 Pcs
Alu front foot ValkPro+ P/L10° middle	3 Pcs	Galv. ballast carrier ValkPro+ L=1979mm	12 Pcs
Alu front foot ValkPro+ P/L10° side	6 Pcs	Galv side plate ValkPro+ L10° universal	2 Pcs
SS hammerhead bolt M8x20mm + lock nut	6 Pcs	Ballast full tiles	36 Pcs
Galv back plate ValkPro+ L10° L=1980mm	6 Pcs		

Roof A | Field 6 - part 6A | Solar panels



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Roof A | Field 7 | Solar panels

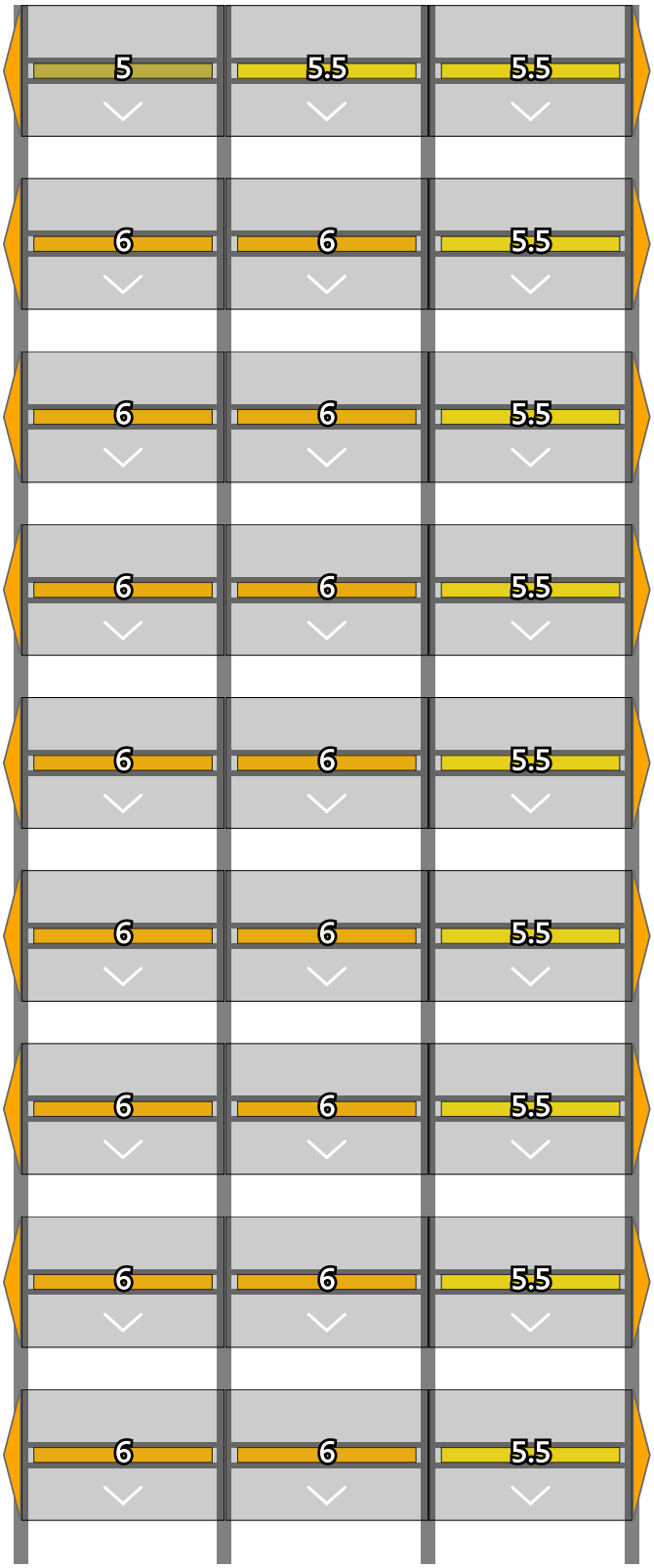


Corner/edge zone

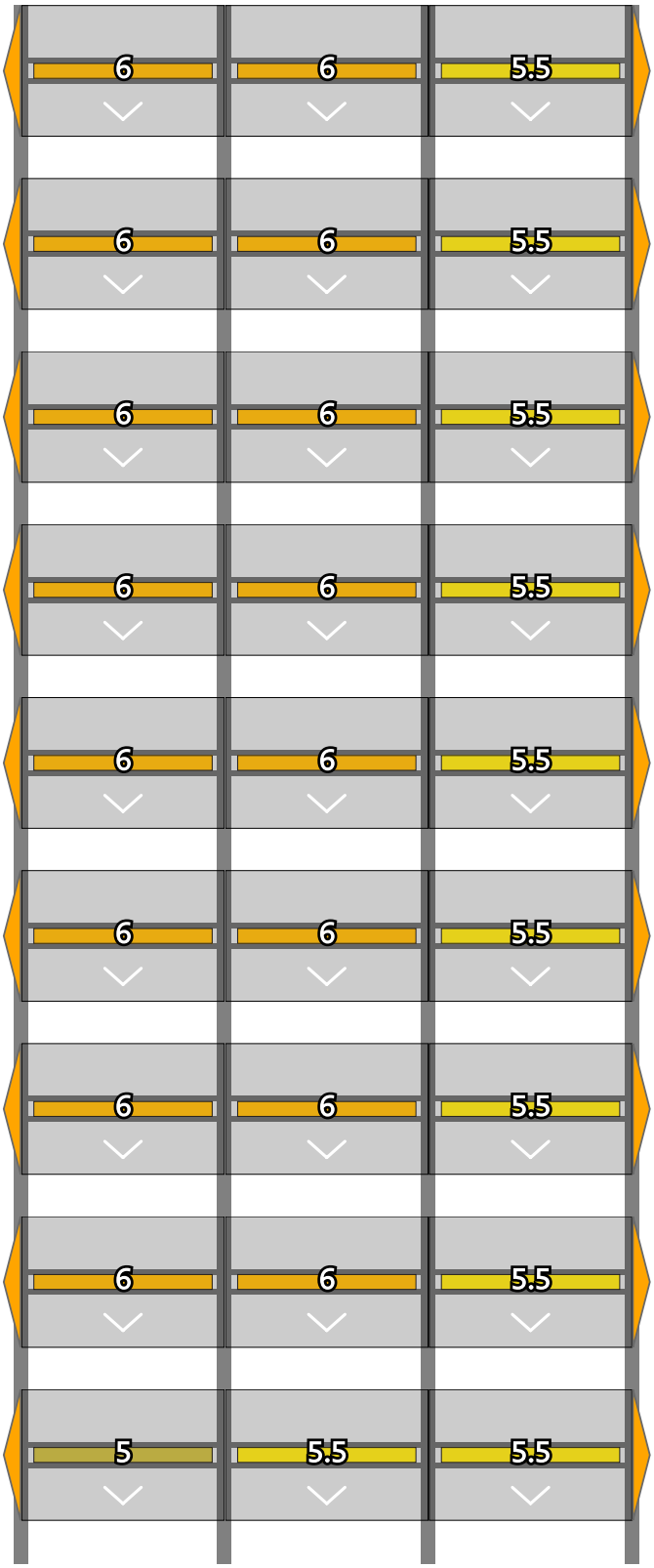
Components

Module	54 Pcs	Galv roof carrier L=1500x1,5mm	72 Pcs
Alu rear foot ValkPro+ L10° middle	36 Pcs	Galv side plate ValkPro+ L10° universal	36 Pcs
Alu rear foot ValkPro+ L10° side	36 Pcs	SS thread-forming bolt M6x20mm - T30	180 Pcs
Alu front foot ValkPro+ P/L10° middle	36 Pcs	Rubber tile carrier - click - ValkPro+ PVC (new)	80 Pcs
Alu front foot ValkPro+ P/L10° side	36 Pcs		
SS hammerhead bolt M8x20mm + lock nut	68 Pcs	Galv. ballast carrier ValkPro+ L=1979mm	108 Pcs
Galv back plate ValkPro+ L10° L=1980mm	54 Pcs	Ballast full tiles	302 Pcs
		Ballast half tiles	20 Pcs

Roof A | Field 7 - part 7A | Solar panels



Roof A | Field 7 - part 7B | Solar panels



Roof A | Bill of materials

Item no.	Panel type	Qty
AIKO-A470-MAH54Mw	**AIKO Solar**	**278 pcs**

Item no.	Mounting system	Calc. Qty
724650	**Alu rear foot ValkPro+ L10° middle**	**202 Pcs**
724651	**Alu rear foot ValkPro+ L10° side**	**152 Pcs**
724660	**Alu front foot ValkPro+ P/L10° middle**	**202 Pcs**
724661	**Alu front foot ValkPro+ P/L10° side**	**152 Pcs**
774221	**SS hammerhead bolt M8x20mm + lock nut**	**314 Pcs**
742512	**Galv back plate ValkPro+ L10° L=1980mm**	**278 Pcs**
741801500	**Galv roof carrier L=1500x1,5mm**	**354 Pcs**
742540	**Galv side plate ValkPro+ L10° universal**	**114 Pcs**
773320	**SS thread-forming bolt M6x20mm - T30**	**696 Pcs**
729629	**Rubber tile carrier - click - ValkPro+ PVC (new)**	**434 Pcs**
742564	**Galv. ballast carrier ValkPro+ L=1979mm**	**416 Pcs**
725150	**Alu. ballast wing ValkPro+**	**21 Pcs**

Item no.	Additional items	Calc. Qty
7506301545	**Tile 30 x 15 x 4,5cm - 4,5kg - NL**	**115 pcs**
7506303045	**Tile 30 x 30 x 4,5cm - 9kg - NL**	**1.266 pcs**

Project total | Project summary

Field number	Panel Quantity (pcs)	DC power (kWp)	System Weight (kg/m²)	Max. pressure/support (kPa)
1	20	9.400	30,5	26
2	51	23.970	29,1	29
3	6	2.820	33	29
4	125	58.750	24,7	27
5	16	7.520	29,1	26
6	6	2.820	33	27
7	54	25.380	31,9	27

Project total | Bill of materials

Item no.	Panel type	Qty
AIKO-A470-MAH54Mw	**AIKO Solar**	**278 pcs**

Item no.	Mounting system	Calc. Qty
724650	**Alu rear foot ValkPro+ L10° middle**	**202 Pcs**
724651	**Alu rear foot ValkPro+ L10° side**	**152 Pcs**
724660	**Alu front foot ValkPro+ P/L10° middle**	**202 Pcs**
724661	**Alu front foot ValkPro+ P/L10° side**	**152 Pcs**
774221	**SS hammerhead bolt M8x20mm + lock nut**	**314 Pcs**
742512	**Galv back plate ValkPro+ L10° L=1980mm**	**278 Pcs**
741801500	**Galv roof carrier L=1500x1,5mm**	**354 Pcs**
742540	**Galv side plate ValkPro+ L10° universal**	**114 Pcs**
773320	**SS thread-forming bolt M6x20mm - T30**	**696 Pcs**
729629	**Rubber tile carrier - click - ValkPro+ PVC (new)**	**434 Pcs**
742564	**Galv. ballast carrier ValkPro+ L=1979mm**	**416 Pcs**
725150	**Alu. ballast wing ValkPro+**	**21 Pcs**

Item no.	Additional items	Calc. Qty
7506301545	**Tile 30 x 15 x 4,5cm - 4,5kg - NL**	**115 pcs**
7506303045	**Tile 30 x 30 x 4,5cm - 9kg - NL**	**1.266 pcs**
732001	**SS cable clamp small**	**556 pcs**
732011	**Plastic cable clamp for back foot ValkPro+**	**354 pcs**

Ipsen Biopharm - Cor Energy - Dgn01

Project total | Bill of materials

Item no.	Additional items	Calc. Qty
732012	Plastic multi-cable clip for roof carrier	278 pcs
738201	Ss. Connector clamp	278 pcs

General Installation Guidelines

General

- This project report is based on the entered parameters and results of the calculator. The results of the calculations have been calculated with the greatest care. Always check carefully whether all values have been entered and displayed correctly in advance.
- During the installation of the mounting system, the instructions and safety regulations published in this project report and the installation manual of the chosen mounting system must be carefully followed. As shown in the general terms and conditions of sale and delivery of Van der Valk Solar Systems B.V., non-compliance with the regulations stated in this document means that the customer can no longer rely on any guarantees and Van der Valk Solar Systems is no longer liable for any form of damage.

Safety

- The installation of the mounting system must be carried out by qualified technical personnel.
- Omitting parts may negatively affect performance and is therefore not allowed.
- Avoid carrying out installation work during bad weather conditions, especially in case of strong winds and a wet (slippery) roof surface.
- During the planning and execution of the installation, always take into account possible changing weather conditions, in particular strong winds or storms. Take the right measures and make sure that no situation can arise where solar panels have already been placed on the system, but other essential parts (such as ballast tiles, side or back plates) are still missing.
- Always wear appropriate protective clothing and gloves when carrying out the installation work.
- During installation work on the roof, always use fall protection and, if necessary, work with safety nets and roof edge protection.
- Carefully follow the instructions for installation of the mounting system, as shown in the current installation manual and online installation videos.
-

Environmental factors

- High neighbouring buildings or objects, such as windmills, can affect the wind pressure. In these cases, advice should always be obtained from Van der Valk Solar Systems before installation can take place.
- Indien voor, tijdens of na de installatie wordt vastgesteld, dat de gegevens en/of omgevingsfactoren niet volledig overeen komen met het projectrapport, moet het project eerst opnieuw worden gecalculeerd en eventueel worden aangepast.
- In kustgebieden, dient het systeem op minimaal 500 meter van open water te worden geplaatst, ter voorkoming van versnelde corrosie door inwerking van zout water. Wanneer er bebouwing aanwezig is tussen het open water en het dak mag een minimum afstand van 250 meter tot open water worden aangehouden.

General Installation Guidelines

Standards and regulations

- For correct and safe installation and use of the solar mounting system, always observe the applicable standards and regulations:

EN 1990: Basis of structural design
EN 1991-1-3: General actions - snow loads
EN 1991-1-4: General actions - wind loads
IEC 60364: Electrical Installations for Buildings
IEC 62305: Protection against lightnings
EN 50110: Operation of electrical installations
NEN 7250: Solar energy systems - Integration in roofs and facades - Construction aspects

Stability and condition of the roof and roof covering

- Placing a mounting system that uses ballast only, is only allowed in case the roof pitch is less than 5°. In case the roof pitch is 5° or more the mounting system always needs to be fixed mechanically to the roof.
- The condition of the roof must be checked upfront for sufficient strength to bear the weight of the mounting system including PV panels ballast and wind and snow loads. Make sure that the load reserve of the roof is not exceeded anywhere.
- Check the stability of the roof and adjust the roof/construction where necessary.
- Check prior to installation whether the roof covering and/or insulation is suitable for the pressure and thermal expansion of the solar mounting system. The maximum pressure is shown in this project report or can be requested at Van der Valk Solar Systems.
- Bulging of the roof membrane should be prevented. This can lift the solar mounting system and can cause displacement of the mounting system or ballast. It is the installer's responsibility to prevent the roof membrane from bulging.
- Factors such as overhead cranes inside the building, seismic activity and others that affect the stability of the roof and/or building can affect the installed solar mounting system. Van der Valk Solar Systems does not take these factors into account, unless confirmed in writing.
- The roof surface on which the solar mounting system is to be installed must be clean, dry and flat.
- The roof height must always be correspond to the roof height in the project report. For installations on roofs higher than 50 meters, Van der Valk Solar Systems should always be contacted in advance.

Roof zones

- During the installation of the mounting system, always take the applicable roof zones according to EN1991-1-4 into account. Installation in the edge zone of the roof is only possible if this has been explicitly taken into account in the calculation. The edge zone is automatically calculated by the ValkPVplannerPro based on the roof height and building perimeter, according to the applicable standards. It is possible to draw panels in the edge zone of the roof, on the basis of which the required additional ballast, parts or mounting points are automatically calculated.
- In case solar panels on the ValkPro+ system are fully or partially placed in the edge zone of the roof, it is mandatory to use side plates.

General Installation Guidelines

Ballast

- After installation of the solar mounting system, it must be carefully checked whether the ballast has been placed in accordance with the ballast drawing. Ballast tiles must be neatly stacked, so that they are sufficiently supported by the tile carriers, mass carriers and/or ballast wings.

Dilatations

- The maximum allowed dimensions of a coupled mounting system is a 30 meters in the aluminium direction and 60 meters in the steel direction. The maximum dimensions are based on the thermal expansion in case of a maximum temperature difference (Delta T) of 70 degrees Celsius. Follow the recommendations in the installation manual for the required gap between the systems.
- The coupled mounting system must not be placed over a gutter or ridge. In the mounting system is place over a gutter or ridge, the system must be split (dilatation), even if the change in roof pitch is minimal.
- When using the extra wide panel support feet for ValkPro+ with ballast, different dilatation rules apply: in such installations the coupled system may be a maximum of 30 meters in the steel/roof carrier direction and 15 meters in the aluminium direction.

Solar panels

- It is the installer's responsibility to determine in advance whether the selected solar panel is compatible with the mounting system, in relation to the dimensions and allowable pressure loads. The calculated pressure loads on the solar panel are shown in this project report.

Cable management

- In order to create a sound and durable electrical connection between the solar panels, it must be ensured that the cables from the junction box have sufficient length and thus do not cause any mechanical stress on the cable glands. Take into account thermal expansion and contraction of cables and the mounting system.
- Cables and connectors must be kept away from sharp and/or abrasive parts and the roof surface by using sufficient and appropriate cable and connector clamps and cable baskets.
- Components of the Van der Valk solar Systems mounting systems can be easily and completely disassembled at the end of their service life and separated for recycling. The systems only have nut-bolt, screw and click connections. No parts are glued or welded. All materials are fully recyclable. Disposal of the components always in accordance with the locally applicable laws and regulations.