ESDEC

INNOVATIVE **MOUNTING SYSTEMS**



PROJECT PLAN

Victor Rumsey, Roof 1

Location:	38 Larkspur Dr, Calne SN11 8GN, UK
Calculation date:	09-12-2023

CLICKFIT EVO

TILED ROOF

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Scan the code for the product manual.

OVERVIEW

Location

Address	38 Larkspur Dr, Calne SN11 8GN, UK
Basic wind speed ($v_{b,map}$)	22.0 m/s*
Fundamental value of basic wind speed	23.96 m/s
Terrain category	Country*
Distance to coast	50.0 km*
Wind pressure	823.35 N/m²
Snow zone	1*
Characteristic value of snow on the ground	0.28 kN/m²
Snow load on the roof	223.24 N/m²
Altitude above sea level	89.0 m*
Consequence class	CC1
Reference period	50 Year(s)
Calculation date	09-12-2023

* Automatically determined based on the address.

Roof specification

Roof height	9.0 m
Edge zone depth	1.2 m
Roof pitch	40.0°
Roofing material	Tiles

System specification

Panel model	AIKO-A610-MAH72Mw
Panel dimensions	2278 mm x 1134 mm x 35 mm
Panel weight	28.2 kg
Panel count	10
Orientation	Portrait
Rail system	Horizontal
Segment count	2
Panel power	610 Wp
Total power	6.100 kWp

COMPLETE LIST OF MATERIALS

Total roof bill of materials

Article number	Description	Amount
1008020	ClickFit EVO module clamp universal grey	24
1008040	ClickFit EVO roof hook universal	36
1008060	ClickFit EVO mounting rail end cap grey	8
1008061	ClickFit EVO mounting rail coupler	4
1008063*	ClickFit EVO EPDM roof hook spacer	36
1008064*	ClickFit EVO auxiliary set	20
1008069*	ClickFit EVO bit torx 30	2
1008132	ClickFit EVO mounting rail 2338mm	4
1008133	ClickFit EVO mounting rail 3488mm	4

* Optional article

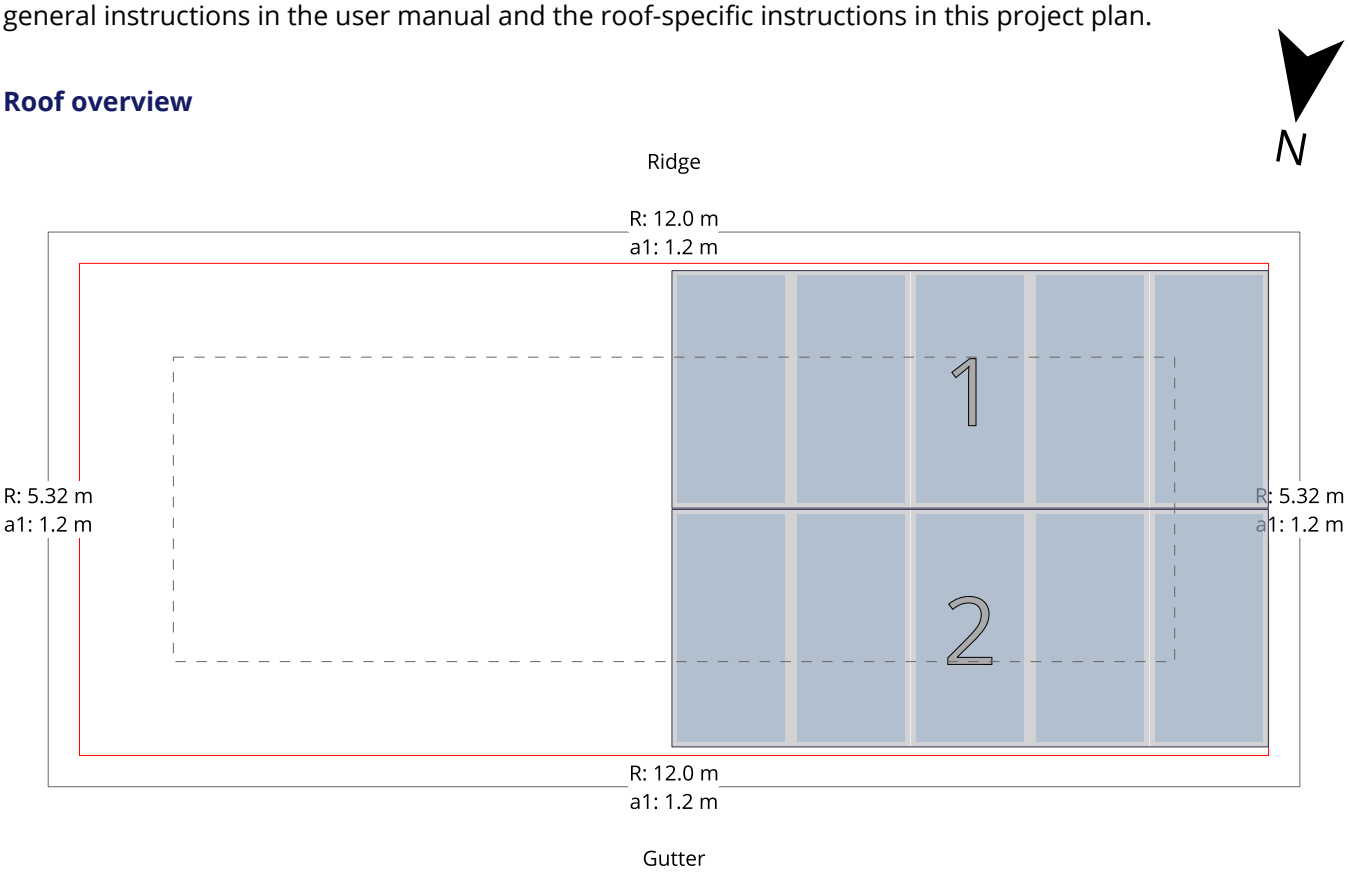
ASSEMBLY

General installation conditions

Warning!

⚠ To ensure the safe and efficient installation of PV systems, the work should be carried out by qualified personnel trained to do installations for the chosen roof material. The installation should be conform the general instructions in the user manual and the roof-specific instructions in this project plan.

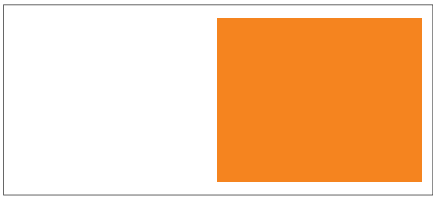
Roof overview



R: XXm	Length of outer roof side
	No-Go zone width (30cm)
a1: XXm	Edge zone width from roof edge

SEGMENT 1, 2

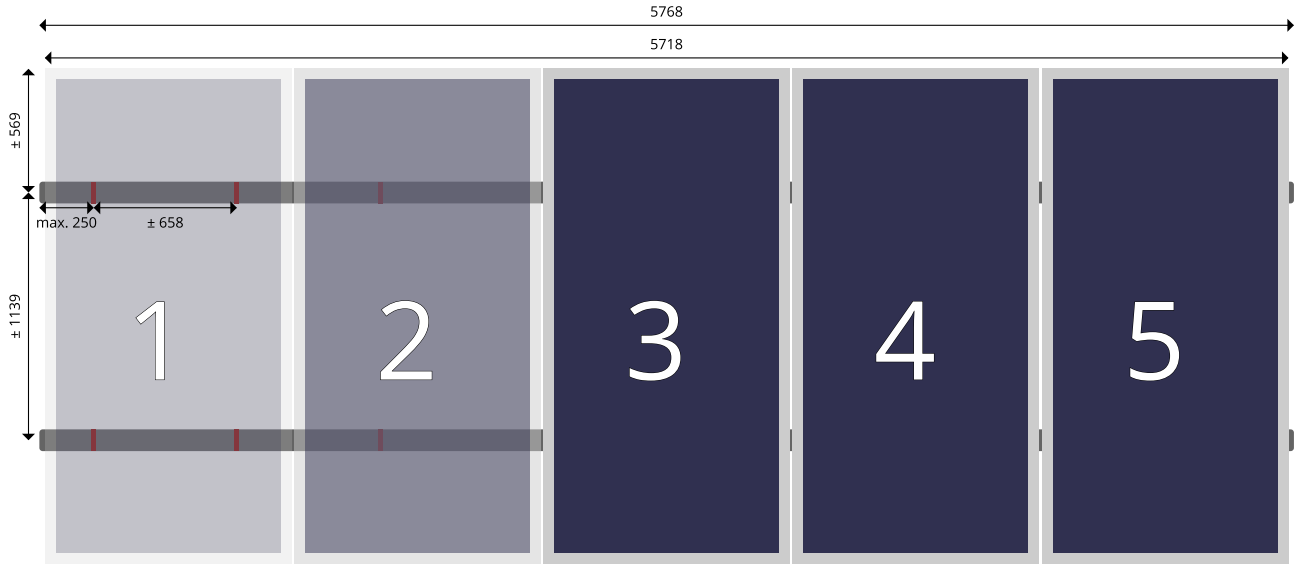
Panel count	5
Total power	3.050 kWp
Orientation	Portrait
Rail system	Horizontal



This assembly plan is applicable for the highlighted segments

Assembly plan

Fixation plan



Units are in mm

Materials

Article number	Description	Amount
1008020	ClickFit EVO module clamp universal grey	12
1008040	ClickFit EVO roof hook universal	18
1008060	ClickFit EVO mounting rail end cap grey	4
1008061	ClickFit EVO mounting rail coupler	2
1008063	ClickFit EVO EPDM roof hook spacer	18
1008064	ClickFit EVO auxiliary set	10
1008132	ClickFit EVO mounting rail 2338mm	2
1008133	ClickFit EVO mounting rail 3488mm	2

CALCULATIONS

Input

Address	38 Larkspur Dr, Calne SN11 8GN, UK
Basic wind speed ($v_{b,map}$)	22.0 m/s*
Altitude factor (c_{alt})	1.09
Fundamental value of basic wind speed	23.96 m/s
Terrain category	Country*
Distance to coast	50.0 km*
Air density	1.23 kg/m³
Wind exposure factor (c_e)	2.34
Town terrain exposure correction factor ($c_{e,T}$)	1.0
Displacement height (h_{dis})	0.0 m
Orography factor	1.0
Wind pressure	823.35 N/m²
Snow zone	1*
Characteristic value of snow on the ground	0.28 kN/m²
Snow exposure factor C_e	1.0
Snow fences	No
Snow load form coefficient	0.8
Snow load on the roof	223.24 N/m²
Altitude above sea level	89.0 m*
Consequence class	CC1
Reference period	50 Year(s)
Roof height	9.0 m
Edge zone depth	1.2 m
Roof pitch	40.0°
Roof area	63.84 m²
Roofing material	Tiles
Panel model	AIKO-A610-MAH72Mw
Panel dimensions	2278 mm x 1134 mm x 35 mm
Panel weight	28.2 kg
Panel count	10
Orientation	Portrait
Rail system	Horizontal
Segment count	2
Panel power	610 Wp
Total power	6.100 kWp

* Automatically determined based on the address.

Roof loads

Total weight	317.12 kg
Roof area (gross)	63.84 m²
System area (projected area)	26.11 m²
Average load over roof area	4.97 kg/m²
Average load over system area	12.15 kg/m²
Maximum downwards force per attachment	619 N
Maximum upwards force per attachment	-416 N
Maximum force on tile	676 N

Roof loads for segment 1, 2

Weight panels	141.0 kg
Weight system	17.56 kg
Total weight	158.56 kg
System Area	13.05 m²
Average roof load over system area	12.15 kg/m²
Average downwards force per attachment	619 N
Average upwards force per attachment	-416 N
Calculation value for the maximum upward force on the roof hook and tile	-516 N
Calculation value for the maximum downward force on the tile	676 N

DISCLAIMER

Please read this information carefully before starting with the design and installation of the PV system.

The output for the design of the PV system is generated by using the calculator tool made available through the website of Esdec B.V. ("**Esdec**") at www.esdec.com (the "**Calculator**"). The responsibility for the correct application of the output derived from the Calculator lies with the user of the Calculator and/or the installer or any other person responsible for the installation of the PV system, which output may be subject to or impacted by many different variables and factors. The installation of a PV system onto an existing building can for example impact the existing building loads (e.g., as a result of snow and wind) or the building construction. To avoid personal injury and/or property damages, the installer or any other person responsible for the installation of a PV system should ensure that the static calculations applicable to the existing building are reviewed and confirmed beforehand by a qualified technician. Any applicable regulations, including (but not limited to) NEN 7250, EN 1990, EN 1991-1-3, EN 1991-1-4 and relevant national annexes, should be observed and adhered to. Failure to obtain such confirmation or observe and adhere to applicable regulations may, amongst others, lead to failure of the roof load-bearing structure of the building. It is advisable to consult with the insurer of the building in case of the intention to install a PV system or in case of any other intended changes to the building.

The installer or any other person responsible for the installation of a PV system should also consider, confirm or control applicable design elements which include (but are not limited to):

a. changes as a result of the additional weight of the complete PV system on the building;
b. changes as a result of the changed geometry of the building's roof;
c. changes as a result of the dynamic wind pressure and possible accumulation of rain or any other precipitation on the building;
d. the loads occurring during installation on the building, roofing material and insulation;
e. the compatibility of the insulation and roofing material at the location of the contact points of the long-term PV-system's support structure, as a result of the pressure point;
f. the compatibility of the roofing material in combination with the support structure at the location of the contact points;
g. the effect of thermal performance of the building on the PV system and vice versa; and/or
h. the effect of any movement and vibrations of the roof on the PV system and vice versa.

In addition, the installer or any other person responsible for the installation of a PV system should confirm the compatibility of any third party products, components or materials (including PV panels) used in conjunction with Esdec's products, if such third party products, components or materials have not been provided for such use by or on behalf of Esdec or the use of which has not been expressly authorized by Esdec. Reference to a third party product in the Calculator should not be deemed an express or implied authorization by Esdec. Esdec's products should always be used in accordance with instructions set out in the most recent version of the applicable manual, available via www.esdec.com.

Prices in the Calculator are indicative and are subject to change resulting from, amongst others, fluctuations in commodity prices.

To generate output from the Calculator Esdec relies solely on the input and information that was submitted by the user of the Calculator. Esdec is under no obligation to confirm or verify such input or information. Esdec assumes no responsibility or liability of any kind in relation to, or resulting from, such input and/or information, and/or any risks, consequences or damages (including, but not limited to, indirect or consequential losses) resulting from incorrect, inaccurate, or incomplete input and/or information that was submitted through the Calculator or resulting from the improper use of Esdec's products. Any such responsibilities and liabilities are solely for the account of the user of the Calculator and/or any other person responsible for the installation of a PV system, as applicable.

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