

SCHLETTER
The Solar Mounting Group

FIXGRID18

PRODUCT SHEET

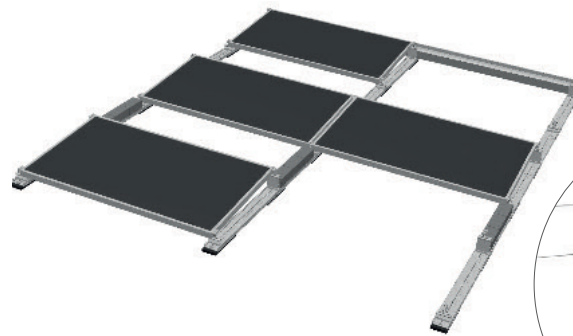


FIXGRID

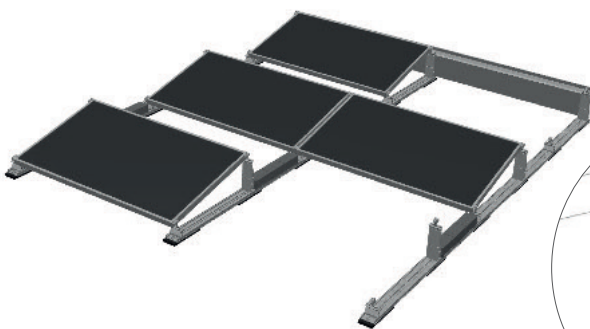
THE ELEVATED FLAT ROOF SYSTEM GENERAL BUILDING APPROVAL

The latest generation of flat roof systems at any scale. FixGrid18 is a material- and tool-optimized system that allows modules to be fastened in closed rows and with a fixed inclination angle of 6° or 13° – with minimum loads. The components are connected to each other with the FixGrid18 one-turn connector. A mechanical slide safety catch is always recommended for inclined roofs. Installation is done simply by placing the pre-assembled FixGrid supports on the base profile, and then turning them 90° clockwise. The module is fastened with the Rapid16 module clamps. Loading can be done in troughs (optional) or on the base profile. No additional fastening of the installation system is needed for the roof cladding.

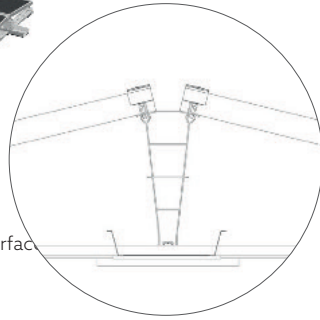
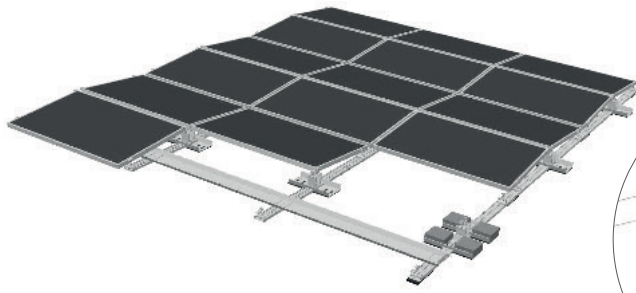
- Simplified installation
- Elevated to 6° or 13°.
- Ballast arm, optimized for wind dynamics
- No roof penetration
- For flat roofs
- Material- and cost-optimized
- abZ according to Z-14.4-631



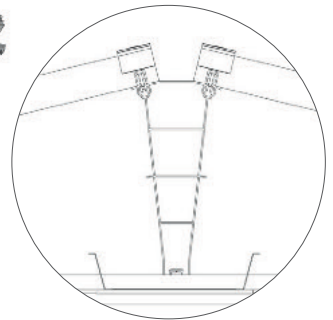
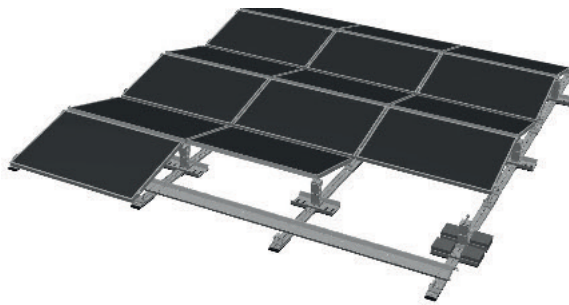
Simple alignment (e.g. southward), incline: about 6°
with Windsafe sheets for ballast optimization



Simple alignment (e.g. southward), incline: about 13°
with Windsafe sheets for ballast optimization



Double alignment (e.g. east-west), incline: about 6° for maximum surface use



Double alignment (e.g. east-west), incline: about 13° for maximum surface use

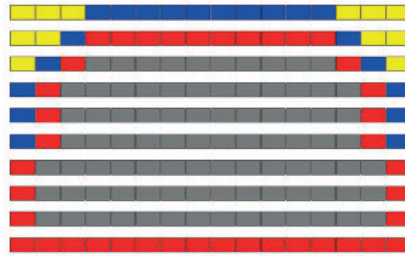
STATICS

NOTES ON LIMITING MODULE FIELD SIZES

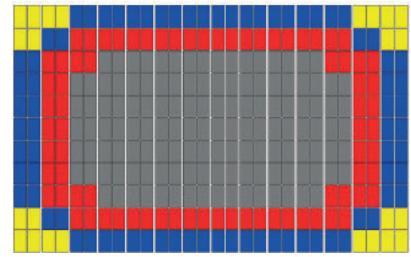
Due to the installation system's differing linear expansion coefficients compared to the material or roof covering, temperature variations can stress the roof cladding. Depending on the roof covering of the building to be roofed, the maximum field sizes should therefore be limited, so as not to damage the roof cladding. On concrete roofs, for example, module field sizes of about 20 to 30 meters are possible without any other work. To prevent mechanical stress on the covering of roofs with film covering, we recommend a maximum module field size of 10 m, and a structure protection mat compatible with the roof cladding. When separating the fields, it should be ensured on inclined roofs that the fields can again be flexibly connected and that any necessary lightning protection or potential equalization connections are also designed to be flexible.

NOTES ON SURFACE PRESSURE AND EQUIVALENT SURFACE LOAD

Surface load is the flat load exerted on the roof structure. Besides snow and wind stress, loads from photovoltaic modules, installation frames and any ballasts on the surface have to be taken into account. However, this has nothing to do with partially operative surface pressures that may affect a location if these exerted forces are introduced over small surfaces by supports or profiles in the roof structure. The pressures exerted at these locations are called partial surface pressure.



Example: Roof layout plan
Simple alignment (e.g. southward)



Example: Roof layout plan
Double alignment (e.g. east-west)



Depending on the roof seal and substructure or insulation under the seal, these surface pressures can be absorbed to different degrees. If there is a firm substrate under the seal, such as wood or concrete, there is usually no problem here. With especially soft insulations, however, the maximum permissible partial surface pressure may be exceeded.

Therefore, it must be ensured at the construction site that it is not exceeded. This can be done as follows:

Partial surface pressure [kg/m²] =

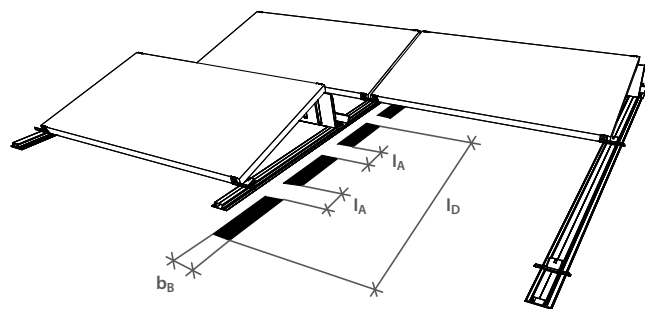
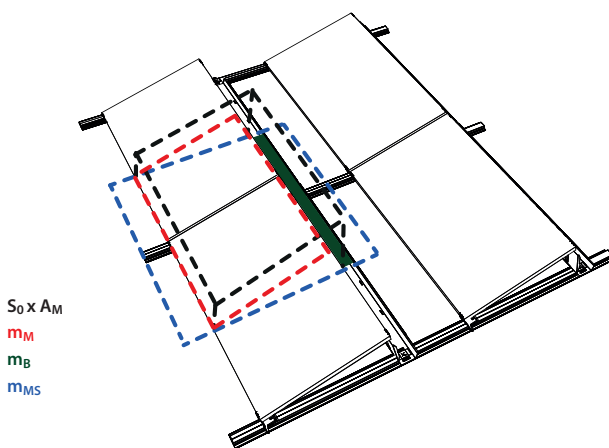
Here the sum of superimposed loads is related to the module:

and the effective bearing surface of the structure protection mat:

Sum of superimposed loads Effective bearing surface of the structure protection mat

Weight of module: **mM**
 + approx. 5 kg weight of installation system: **mMS**
 + Ballast per module: **mB**
 + Snow load x module surface: **S0 x AM**

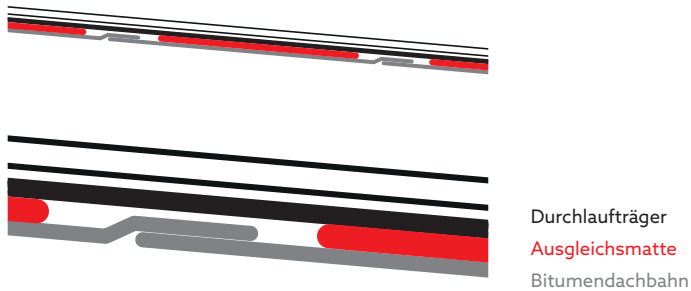
$A_{eff} = (\text{Length of continuous beam per module row } l_D - \text{Sum of recesses in structure protection mat } l_A) \times \text{Width of structure protection strips } b_B$



If the surface pressure is exceeded, we will be happy to advise you on custom solutions!

NOTE ON VERY THICK ROOF SEALS

With very thick roof seals, such as with bitumen seals, uneven roofscapes can occur due to the joint overlaps. Especially at high temperatures, the continuous beam can leave impressions, because here a locally increased surface pressure occurs. To prevent this, we recommend underlaying additional compensation pads to achieve the evenest possible load distribution.



NOTES ON USE OF VERY SMALL UNITS

For static reasons, it is necessary to connect at least two rows with the base profile. This means that the smallest possible configuration forms 1 module per row with 2 module rows.

NOTE ON USE OF ROOFS WITH SUBSTRATE OR GRAVELLED COVERING

For roofs with substrate or gravel covering, it must be considered that a low weight load for the system can only be achieved if sliding of the system sections is reliably prevented by an adequately slip-free connection for the substrate surface. For gravel roofs, flush embedding of the base beams in the gravel surface is enough. For overgrown roofs, slip resistance can be achieved with additional measures. For example, screws in the continuous beam can be used on the construction site to create a non-slip connection to the substrate.

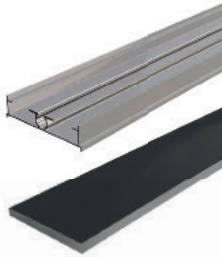
NOTE ON ROOF BORDER GAPS

For the system versions FixGrid 6° and FixGrid 13°, from the border of the roof, a minimum gap of 1.5 times the inclined module height must be adhered to. For a horizontally arranged module with dimensions of 1.60/0.99 m, for example, the edge gap necessary is 1.5 x 0.99 m. For system versions FixGrid100 6° and FixGrid100 13°, no border gap is necessary. The necessary border gaps must also be maintained if there is an attic. Here any additional border gaps from opacity must be considered when planning. The border and corner areas of the flat roof do not match the load zones of the module field. This means that increasing the border gaps will not lead to a release of higher ballasts at the edge of the module field. This is based on wind-dynamic flow behaviour.

COMPONENTS

Base profile FlatGrid for structure protection mat strips

128039-006	Base profile FlatGrid 6000 mm
128039-212	Base profile FlatGrid 2650 mm
128039-214	Base profile FlatGrid 4200 mm
128039-215	Base profile FlatGrid 6300 mm
169004-003	Structure protection mat cut 300x110x20 mm, Aluminium lining



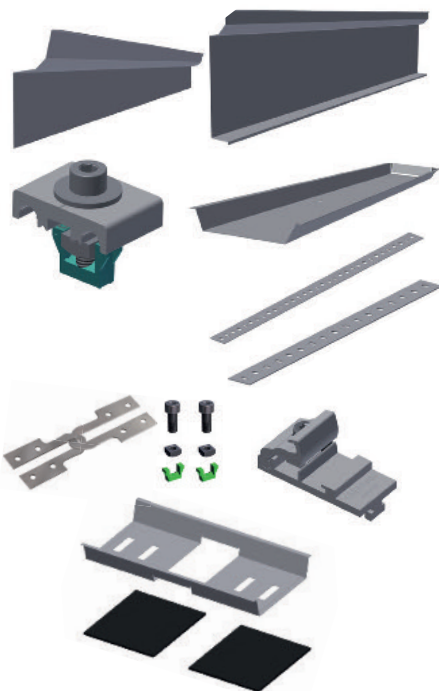
Other available lengths

128039-202	Base profile FlatGrid 1995 mm
128039-210	Base profile FlatGrid 2995 mm
128039-206	Base profile FlatGrid 3900 mm
128039-006	Base profile FlatGrid 6000 mm



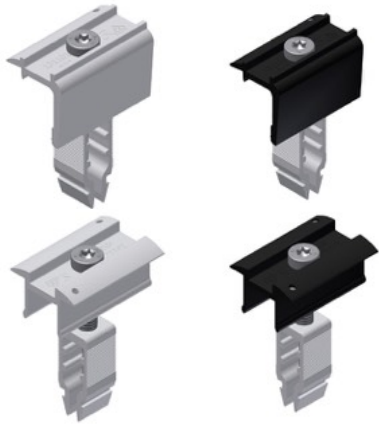
FixZ profile pieces with connector

163900-012	FixZ-7 system profile 18 below 96 mm with connector
163900-011	FixZ-7 system profile 18 above 96 mm with connector
163900-002	FixZ-15 system profile 18 below 96 mm with connector
163900-001	FixZ-15 system profile 18 above 96 mm with connector
163900-003	FixZ-15 system profile 18 middle 96 mm with connector



Accessories

169018-170	FixZ-7 Windsafe 18 to 1700 mm module
169018-210	FixZ-7 Windsafe 18 to 2067mm module
169019-170	FixZ-15 Windsafe 18 to 1700 mm module
169019-210	FixZ-15 Windsafe 18 to 2067mm module
169020-170	FixGrid ballast shaft 18 mm to 1700 mm module width
169020-210	FixGrid ballast shaft 18 mm to 2067mm module width
169017-000	Additional vat
169004-007	Structure protection mat 230x200x6
135003-005	Lightning protection clamp M8
129063-000	Rapid cross connector
129062-001	Tension connector set M8
119015-002	Perforated installation tape 6-50 m
119015-003	Perforated installation tape 16-50 m



Module clamps

You can find a choice of suitable Rapid 16 module clamps in our component overview.

TECHNICAL DATA

Material

Structure protection mat: Rubber granulate with aluminium lining
Connector: Stainless steel 1.4301 or better
Other system components: Alu EN AW 6063

Statics

Static calculation according to the current country-specific standards (in Germany EN 1991, EC1 and abZ). Static systems for dimensioning the number of the required ballast.
Always obey the instructions on statics!

More information at www.schletter-group.com

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