

FS In

The lay-in system

- Simple, quick and screwless module mounting
- Highest level of pre-assembly
- Only few and perfectly harmonized system components
- Long service life due to optimal combination of materials



Schletter ground-mounted systems have been successfully installed for many years and have proven their quality in the field. FS In is suitable for the most different terrain categories and enables you to generate clean solar power almost anywhere.

Quick and simple. Convenient and safe.

With lay-in mounting, the solar modules only have to be laid in into the module-bearing profiles that have been designed especially for that purpose. This saves a considerable amount of time and makes module mounting simpler and more convenient.

FS In is suitable for solar modules that have an accordant additional certification for lay-in mounting. Modules with frame thicknesses from 40 - 50 mm can be used. Projects with modules that have other frame thicknesses can also be realized, as far as the respective module producer approves this kind of module mounting. For projects with a total power of 5 MW or more, an individual project planning for any approved frame thickness is possible.



Everything from one source!

We manufacture all components ourselves in our factory. Thus, we can avoid shortages and can reliably offer you high quality products. We supply modular systems for any kind of foundation, any subsoil and any type of type of mounting.

No clamps. No nuts and bolts. Just lay the modules in.

In order to secure the laid-in module, special spring-borne distance pieces are inserted. This also serves as a theft prevention, as the modules cannot be removed by unauthorized people. Suitable end plates that are fastened with grooved nails to the ends of the rails complete the overall picture.



*The terms of guarantee can be referenced at www.schletter.de/AGB_en.

Be on the safe side!

The detailed and individual project planning on the basis of currently valid standards safeguards the structural safety of the solar plant for many years. But of course that is not all. A geological survey of the building ground is created on location. The load-bearing capacity of the soil is determined by means of load tests.

- Inclined pull tests
- Horizontal pressure tests
- Creation of soil profiles
- Chemical analysis in a laboratory

Structural safety

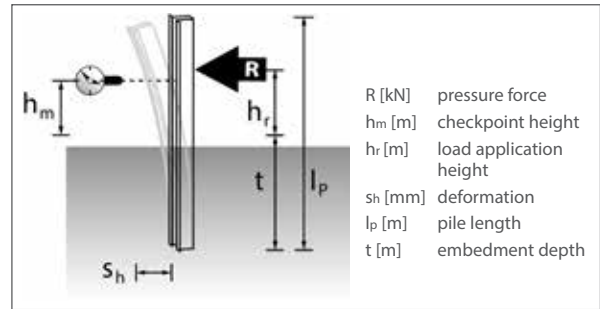
Hot-dip galvanized foundation posts in different size categories are used for the foundation in order for the anchoring forces to be transmitted as far as the upper connection point, thus ensuring optimal structural safety of the plant against wind and snow loads. The profile designs we have developed safeguard optimum embedment in the ground combined with maximum bending stiffness.

Quick and terrain-friendly

Special hydraulic pile-drivers are used to pile-drive the profiles into the soil. This pile-driving technique is very suitable for large ground-mounted solar plants. Depending on the condition of the soil, one pile-driver can pile-drive up to 250 posts (profiles) a day. Mounting on steep slopes is also possible. If the subsoil is rocky, the machine can be equipped with a boring unit.

Good load-bearing capacity. High economic efficiency.

The support geometry is the skeletal structure of each FS plant. After all, the individual support base is the crucial factor because it must optimally use the structural characteristics of the ground anchoring and the good load-bearing capacity under moment loading. As the profile is continuous to the attachment head, additional joints (with the associated mechanical effort and / or risk of corrosion) is avoided. The reduced number of components as well as the almost 100% prefabrication of the girder assembly group in the factory reduce the assembly time to a minimum. FS Uno stands for quick and economic solar plant construction of big solar farms with any desired type of solar module.



Mechanical background of inclined pull-out tests:

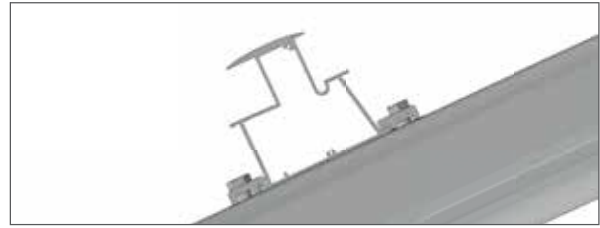
The basic idea of inclined pull tests is that the wind impacts the inclined module area almost vertically. Thus, a surface pressure is created from the application of the bending moment in the form of a pair of forces. With inclinations higher than 15°, the frictional resistance between the pile and the surrounding ground is generally higher than the jacket friction which results in a greater pull resistance.



Cost-efficient assembly without clamps

The module-bearing rail always has a profile geometry that is aligned to the flow of forces. Thus, the required structural characteristics are achieved with minimum use of materials. The module-bearing rails are fastened to the support units with special mounting claws.

The modules are assembled quickly and cost-efficiently to the rack from the ground using appropriate tools. Framed modules are arranged vertically or horizontally with spacers. Finally the modules are secured at the profile ends with end plates.



Technical data

Material	<ul style="list-style-type: none"> • Pile-driven foundation posts: Steel, hot-dip galvanized • Rails: Aluminium MgSi05 /EN AW 6063, EN AW 6005 • Fastening elements, screws/bolts: High-grade steel 1.4301 • Cover sheet with drilled drainage outlets 3.3535 / AlMg3; AlMg3 H12/H22 • Spacer: PA66
Construction	<ul style="list-style-type: none"> • Fine adjustment option to align the pile after pile-driving • Cost-optimized complete construction due to structural optimization • Components designed for quick and easy mounting
Module clamping	<ul style="list-style-type: none"> • Framed modules • No module clamping required
Accessories¹	<ul style="list-style-type: none"> • Cable channels, cable ducts • Lightning protection system (FS Protect system)
Logistical details	<ul style="list-style-type: none"> • Pre-assembled as far as possible. • Can easily be transported on the installation site
Delivery and services	<ul style="list-style-type: none"> • Site-specific structural analysis based on local loading data • Delivery of the complete mounting material • Optional: Soil examination and soil statics • Optional: Pile-driving of the foundations, rack and/or module mounting
Design calculations	<ul style="list-style-type: none"> • Structural analysis of the respective terrain based upon a geological survey • Individual system structural analysis based on regional load values • Load assumptions according to DIN EN 1990 (Eurocode 0), DIN EN 1991 (Eurocode 1), DIN EN 1993 (Eurocode 3), DIN EN 1999 (Eurocode 9) and further respectively country-specific standards • Profile geometries with highly efficient material utilization. • Structural verification of all construction components based on FEM-calculation • Optional: Wind load vibration simulation • Optional: Earthquake simulation
Terrain maintenance	<ul style="list-style-type: none"> • A central support allows optimum terrain maintenance • Sheep grazing

¹ module clamps and accessories are listed in our component overview. You will also find them in the download area of our website at: <http://www.schletter.eu>