



# FS System

## Features and Benefits

- ETL Listed
- High level of pre-assembled parts
- Proven extremely short installation time
- High quality and sustainable materials
- Easily accessible for ground and system maintenance
- Included certified engineering by professional engineer licensed in the location of the project
- Included soil tests and pull out tests on systems larger than 250 kW
- Options for in field adjustment, if needed

**The Schletter FS Racking System** has a proven worldwide product and installation history, with over 6 GW of ground mounted installations installed throughout the world with many FS installations ranking among the largest globally. Project specific system calculations and optimized material utilization address the ever increasing pressure to reduce costs in planning PV systems, taking into account balance of system (BoS). Complete structural calculations are provided for system design, while assuring compliance with current building codes and regulations.

With this established history and experience in ground mounted PV installations, the latest generation of the FS System offers a culmination of experience and the highest level of in-house pre-fabrication to date, while always maintaining the focus of making the overall cost of a PV system more competitive. **The result is an attractive system installed quickly, efficiently, and with the durability to last.**

Schletter stands behind the quality, durability, and functionality of its products and services its customers with professionalism. Because of our commitment to customer satisfaction, all Schletter systems have a voluntary 10-year warranty.

For more information, please visit [www.schletter.us](http://www.schletter.us) or call (520) 289-8700.

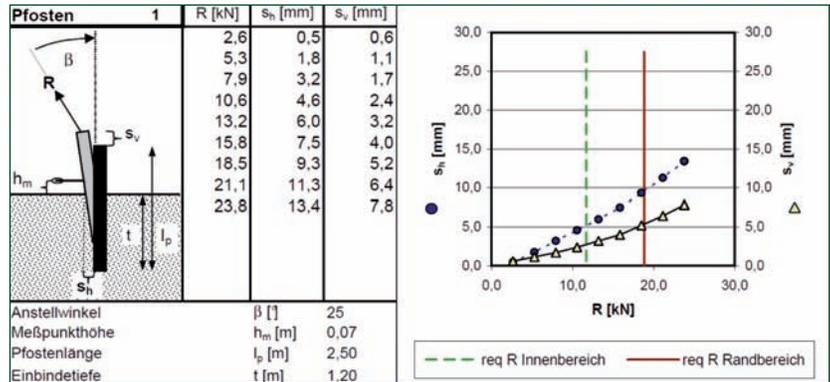




## Design Process

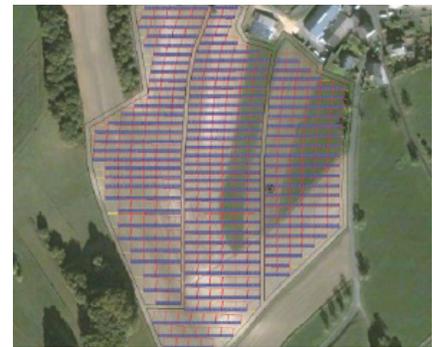
The first step in planning a ground mount system is thorough soil investigation and pull out tests of the pier driven posts at the project site. Such testing generally requires numerous soil samples and subsequent soil classifications, which are the basis for determining the quantitative bearing capacity. Testing includes:

- Vertical pull-out tests
- Lateral load tests
- Independent laboratory analysis of soil classification, corrosion potential, gradation and soil plasticity



**Layout planning** for the FS System can be accomplished using the **Helios 3D™** layout software. Helios 3D features automatic, optimized drop shadow free placement of PV tables, making planning large systems virtually seamless. The program's sophisticated design tools and intuitive workflow allow users to complete days worth of project work in hours.

A two-part software system, Helios 3D consists of database management and an AutoCAD-based drafting interface. Helios 3D is a proven software system for utility scale solar planning in Europe and Schletter is the exclusive distributor of Helios 3D in North and South America.



### ➔ Helios 3D Product Sheet

**The FS foundation** consists of hot-dip galvanized steel posts (also known as profiles) with a proprietary u-shaped design. The u-shape grants optimum anchorage in the soil while maximizing the post strength.



**Insertion of the posts into the soil** is performed quickly by means of a terrain versatile hydraulic ram (GAYK). This pile-driving technique is especially suitable for the installation of large power plants. The **GAYK™ Ram** features a track machine with center pounding for more efficient and accurate installations. Even difficult terrain conditions (gravel or stones) are possible; in case of bedrock, the GAYK can be equipped with a drilling unit. It is possible to ram posts on slopes up to 20 degrees.

### ➔ GAYK Ram Product Sheet





## Product Enhancements

**Generation 6 is the result of experience gained through years of project planning and implementation** with ground mount systems. The FS System Generation 6 is enhanced with new support designs that include a high level of pre-fabrication.

Four simple steps are done in the field:

- Drive the post into the ground
- Place the support on the post attachment head and bolt the lower strut
- Insert the locking plate at the attachment head
- Install the cross beams—that's it!

**For any type of module**, including the more fragile thin film modules, clamps are available. Schletter works with many module manufacturers to find the most appropriate clamping methods by performing structural FEM simulations with various modules and our clamping options.

**The cross beams** feature a profile geometry that is designed for optimal distribution of forces. Suitable bolt channels are integrated in all profiles for more efficient mounting. The cross beams are fixed to the support units by means of special mounting claws that are pre-assembled in the exact position required for the chosen module.



## Time is Money

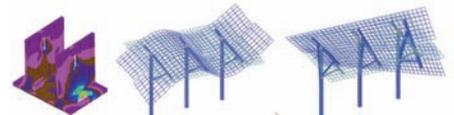
A reduction of BoS costs in the mechanical area is only possible by a minimization of the mounting time at the construction site. The materials of FS System Generation 6 are **pre-assembled in the factory** and are delivered to the construction site according to the customer's requested delivery schedule.





**Technical Data**

Material	<ul style="list-style-type: none"> <li>Fastening elements, bolts: Stainless steel 304 and 316</li> <li>Profiles (rails): Aluminum alloy 6105 T5</li> <li>High life-expectancy, high residual value, no disposal costs</li> <li>Pile driven support posts: Steel, hot-dip galvanized with a G235 process                             <ul style="list-style-type: none"> <li>- Easy plant re-powering due to modular design</li> </ul> </li> </ul>
Logistics	<ul style="list-style-type: none"> <li>Quick and simple mounting</li> <li>Maximum level of prefabrication prior to shipment</li> </ul>
Construction	<ul style="list-style-type: none"> <li>Can be installed on uneven terrain</li> <li>Simple adjustment options</li> <li>Cost optimized configurations for framed and unframed modules</li> </ul>
Accessories	<ul style="list-style-type: none"> <li>Cable channels, cable ducts</li> <li>Components for potential equalization/grounding</li> <li>Clamps for every type of module</li> <li>Fastening systems for large laminate modules (OptiBond system)</li> </ul>
Calculations	<ul style="list-style-type: none"> <li>100% code compliant designs for any locality</li> <li>Third-party structural PE, stamped drawings and calculations</li> <li>Individual system structural calculations based on geotechnical report</li> <li>Individual system design calculations based on regional load values</li> <li>Design loads according to IBC 2006 or 2009</li> <li>Patented profile geometries with optimum material utilization</li> <li>Verification of all construction components based on FEM-calculation</li> <li>Earthquake simulation, optional</li> </ul>
Available Third-Party Services	<ul style="list-style-type: none"> <li>Geotechnical soil investigation and analysis</li> <li>Ramming of foundations</li> <li>Optional: rack mounting</li> <li>Optional: complete module mounting</li> <li>EPC services</li> <li>PPA formation</li> </ul>
Terrain maintenance	<ul style="list-style-type: none"> <li>Simple terrain maintenance due to single support                             <ul style="list-style-type: none"> <li>- Specification of module height above ground possible</li> </ul> </li> </ul>
Grounding, Potential equalization	<ul style="list-style-type: none"> <li>Grounding options available</li> <li>Components for the internal potential equalization</li> </ul>
Warranty and Certifications	<ul style="list-style-type: none"> <li>10-year warranty, optional 20-years</li> </ul>



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