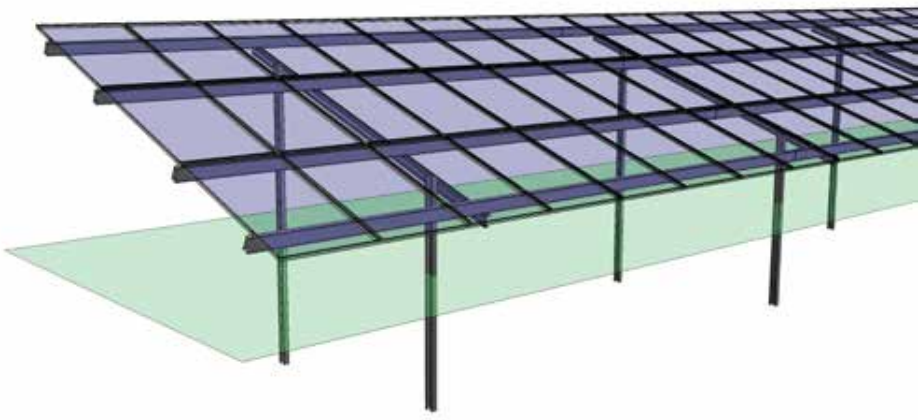
SCHLETTER
The Solar Mounting Group

FS DUO GEN 3

PRODUCT SHEET



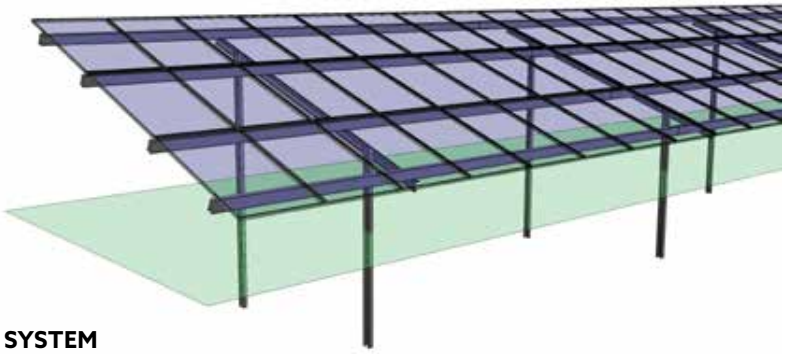
SCHLETTER

FS DUO GEN 3

Further development and the third generation of the steel twin-support system

- No soil sealing
- Extremely short assembly times
- High efficiency
- Optimises and reduces the number of components
- Wide span thanks to the high-tensile steel
- Suitable for challenging ground and terrain conditions
- Integrated cable duct in purlin and girder

Schletter Solar GmbH substructures are renowned for their high level of structural safety, ease of assembly, long lifespan and efficiency. The previous generation of the mounting system has been used successfully in projects all over the world with a total output of several gigawatts. With Generation 3, we have been able to provide even more advantages for the user by reducing the amount of material used, making the assembly easier and improving the cable routing.



OPTIMISING AN ALREADY OPTIMISED SYSTEM

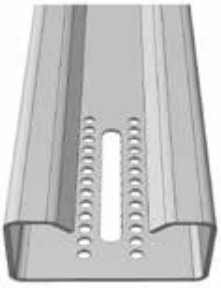
Saving costs without losing quality – that's our top priority. We have been able to significantly reduce material and assembly costs by using high-tensile steels, which are usually only used in the automotive and mechanical engineering sectors, and with the carefully thought-out optimisation of the profile geometries. Thanks to the integrated cable ducts in purlin and girders, it's easier to lay the cable wires in the rack and no expensive cable ties are needed. The use of zinc-magnesium alloys as corrosion protection guarantees a long service life. The optimised connections allow for a quicker assembly.

1000 POSSIBLE USES – 1 SYSTEM

SCHLETTER Solar GMBH operates worldwide. Factories and branches across all continents, as well as a standardisation of our product portfolio, ensures that all customers get the same level of quality and service regardless of where they are in the world. Local sourcing at a high-end level!

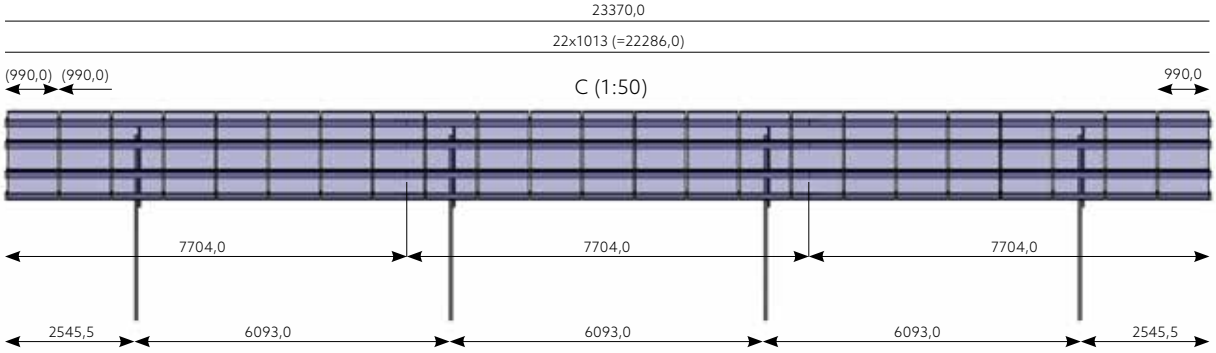
STRUCTURAL SAFETY IS OUR NUMBER 1 PRIORITY

Even when used on the worst possible ground conditions, the system guarantees structural safety. This means that all components can still be fully used which contributes to the high economic efficiency! The tilt head can easily compensate for steep slopes of up to 25°. Using the geological survey that you provide, we calculate the necessary depth of foundation. We also use the topography to calculate the post length and the chemical soil analysis to develop the perfect coating system for the profile. The optimal ram foundations for your project can be chosen based on the ground hardness thanks to the SRF and FG foundation posts that we offer. When it comes to the load determination, we of course base it on the locally applicable regulations, which we always keep up-to-date in our global database.



THE ADVANTAGES OF THE FS DUO TWIN-SUPPORT SYSTEM

2 is better than 1 – this also applies to PV construction! The FS Duo twin-support system allows for a significantly more precise static adjustment of the individual components, which directly influences the economic efficiency. Larger spans and module tables reduce material usage and make service and maintenance easier.



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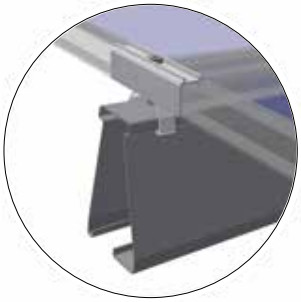
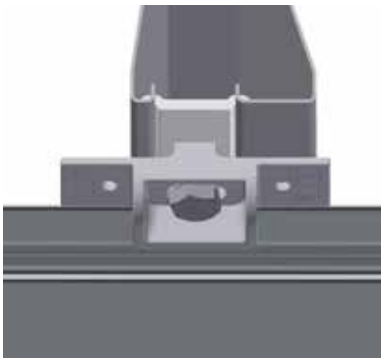
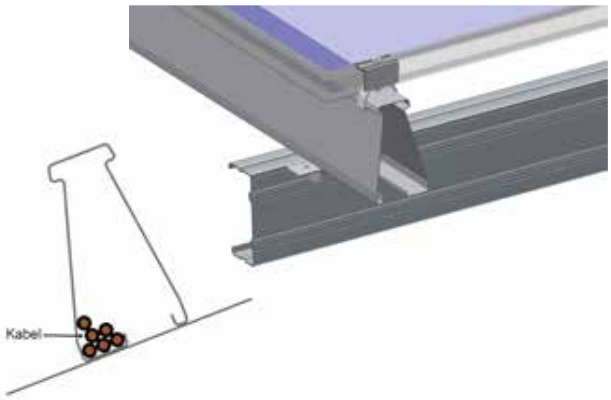
In order to reduce the time needed to assemble the connections, we've again really focused on the small details. It's not necessary to drill on the building site and most connections are made using clamps. This makes the assembly significantly easier and it saves money!





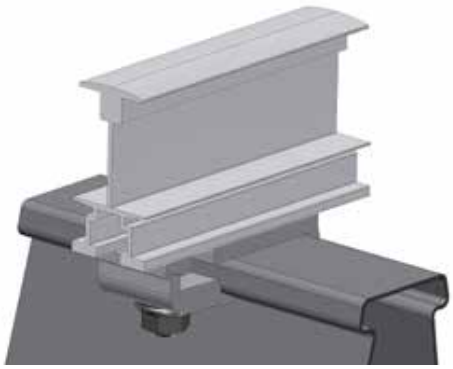
OPTIMISING THE PURLINS

The purlins represent the largest cost component on the rack. Thanks to the optimised geometries and the high-tensile steel, the new module bearing rails can reach spans of up to 6.5 m without a problem. In addition, it's no longer necessary to orient the position of the connectors according to the static conditions thanks to the reinforced rail connectors. All purlin lengths are cut to the same length. This makes them easier to handle on the building site. The geometry of the purlins also makes it possible to lay the cable wires in the purlin so that they are protected from the elements, and even UV radiation.



HORIZONTAL MODULE ASSEMBLING WITH PLUG-IN RAFTERS

In order to make horizontal module assembling even easier, we developed the rafter plug-in system. The assembling of the modules can be done entirely without ladders or lifting platforms and therefore meets all health and safety requirements – not to mention it saves a significant amount of assembly time. Available for frame thicknesses 30 & 40mm. For frameless modules or modules without approval for storage on the short sides, the rafter systems with module clamps are still available.



TECHNICAL DETAILS

Material	• Ram foundations: Steel, treated through continuous hot-dip galvanizing in accordance with DIN EN 10327 • Girders / purlins: Steel, coated with zinc-magnesium alloy, alternatively treated through continuous hot-dip galvanizing in accordance with DIN EN 10327 • Fastening elements, screws: Zinc-scale coated steel, aluminium • Module clamps: Aluminium • Rafter profiles: Aluminium
Construction	• Options for the precise adjustment to the ram foundation result • Overall lower cost constructed based on the static optimisation • Components for a fast and simple installation
Accessories	• Cable fastening, zinc-magnesium & zinc repair paint
Logistics	• Optimal transfer to the building site, on-time delivery according to customer requirements
Delivery and services	• Individual structural design of the rack based on country-specific standards • Delivery of all installation materials • Creation of a terrain model using external topography
Structural analysis	• Individual structural analysis of the terrain based on an external soil survey • Individual structural analysis of the system based on the regional load values • Load assumptions according to DIN EN 19990 (Eurocode 1), DIN EN 1993 (Eurocode 3), DIN EN 1999 (Eurocode 9) and other, relevant, country-specific standards • Profile geometries with a highly-efficient use of materials • Verification of all construction components based on FEM calculations and laboratory tests • Optional: • Vibration simulation under wind load • Optional: Earthquake simulation
Terrain maintenance	• Grazing with sheep is possible without a problem thanks to the large strut spans and greater distance from the ground

Further information is available at: www.schletter-group.com

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FS Duo100

- Highest possible level of pre-assembly
- No ground sealing
- Quick and easy assembly
- Perfectly synchronized system components
- High economic efficiency
- Suitable for heavy loads

The FS system for ground-mounted solar plants has been deployed by Schletter for many years in a large number of projects across Germany and Europe.

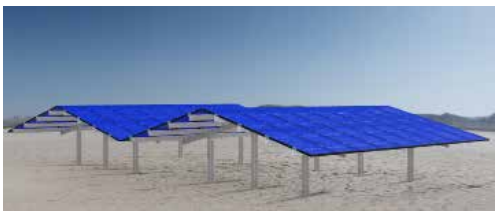
Schletter has utilized the experience gained in these projects to further enhance the FS Duo and to develop an even more effective variant to its range of PV mounting assemblies. Increasing cost pressure within manufacturing, particularly in the sector of ground-mounted solar plants has resulted in the mandatory optimization of materials.

Just like the FS Uno 100, the FS Duo100 is designed for an east-west alignment of the modules. In contrast to the the FS Uno100, it allows higher loads respectively bigger module areas. Due to the three-support arrangement, bigger support distances are possible.

Nowadays, solar modules are getting cheaper, but at the same time the expenses for lease as well as additional costs for lease and incidental costs keep increasing. Thus, the terrain must be used in the most efficient way. Due to the short shading distance, the **FS Duo100** allows an efficient occupancy of the roof area which results in higher yields. In contrast to south-facing solar plants, east-west facing solar modules can generate a more balanced energy yield in the course of the day. This aspect is getting ever more important regarding energy politics.

Benefits

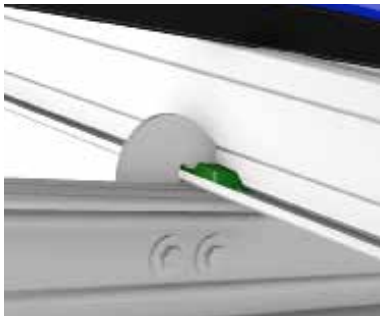
- Efficient use of materials
- Greater distances between supports are possible
- Galvanized sheet metal edges made of strip galvanised material
- Average zinc layer thickness of up to 80 µm
- Optimum area utilization



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

Short description of the mounting

The girder rail is fastened to the pile-driven supports. The module-bearing profiles are hooked in using connector hooks and are fastened with a fastening device made of high-grade steel. For this purpose, the fastening device is accurately hammered in using a hammer in order to create a fixed connection with pre-stress. This safeguards durable stability also in difficult conditions.



Technical data

Material	Fastening elements, screws/bolts: High-grade steel (fastening device, bolts) Profiles (rails): Steel, hot-dip galvanized (strip-galvanised) Pile-driven foundation posts: Steel, hot-dip galvanized
Logistical details	• Delivery of single components as well as a maximum level of pre-assembly is possible. • Transport to the installation site appropriate to the specific kind of mounting
Construction	• Quick and easy mounting
Delivery and services	• Soil survey and structural analysis of the soil • Individual rack structural analysis based on regional conditions • Pile driving of the foundations and delivery of the complete mounting material • **Optional:** Rack mounting • **Optional:** Complete module assembly
Structural analysis	• Structural analysis of the respective terrain based upon a geological survey • Individual systems 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 corresponding country-specific technical standards • Highly efficient, material-saving rail geometries • Structural verification of all constructional components on the basis of experimental tests and FEM calculations

Further information at: www.schletter.eu

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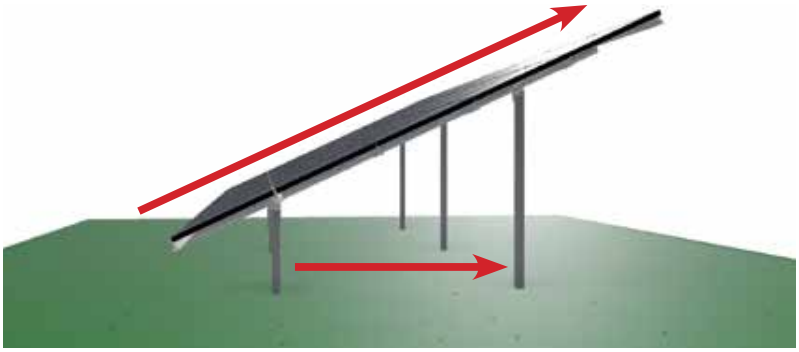
FS II

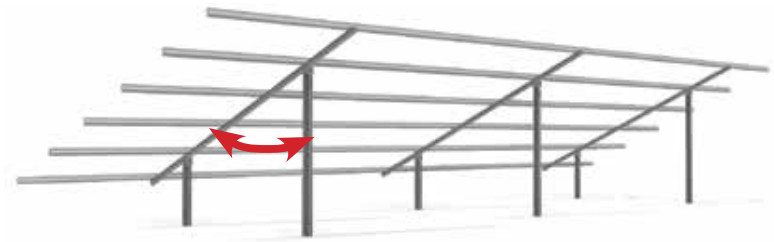
- Maximum level of pre-fabrication
- No ground sealing required
- Quick and simple mounting
- Coordinated system components
- Long service life due to optimal combination of materials

The FS open area mounting system has been deployed by Schletter for many years, in a large number of projects across Germany and Europe.

Schletter has utilized the experience gained in these projects to further enhance the FS Systems and to develop an even more effective variant to its range of PV mounting assemblies. Increasing cost pressure within manufacturing, particularly in the open-area plant sector, has resulted in the mandatory optimization of materials.



By implementing the **FS II** system, supports can be positioned at greater distances apart, particularly on level terrain. This enables a potential increase in breadth of the arrays resulting in a more efficient use of racks for a lesser use of materials.



To reduce shading distances, we recommend installing the arrays with a shallower angle of tilt.

Benefits

- Efficient use of materials
- Greater distances between supports are achievable
- Increased efficiency due to a broader module surface.

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

The supports are delivered, for the most part, pre-assembled, facilitating a quick and safe construction of the racks on site. This saves valuable time and contributes to a high quality of daily delivery by our mounting team.

- Bolt head attachments to foundation posts.
- Position girders and bolt together securely. Done!

Technical data

Material	Fastening elements, bolts: stainless steel 1.4301 Rails: aluminium MgSi05 /EN AW 6063, EN AW 6005 Pile-driven foundation posts: Steel, hot-dip galvanized
Construction	• Quick and easy mounting • Adjustment options to compensate for uneven ground • Cost-optimized complete construction based on structural optimization • For framed and unframed modules
Delivery and services	• Ground survey and structural analysis • Structural analysis of the individual rack based on regional data • Pile driving of the foundations and delivery of the complete mounting material • **optional:** rack mounting • **optional:** complete module assembly
Structural analysis	• Structural analysis of the respective terrain based upon a geological survey • Individual systems 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 corresponding country-specific technical standards • Highly efficient, material-saving rail geometries • Structural verification of all construction components based on FEM-calculation

Further information at www.schletter.eu

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FS Uno

The ground-mounted system made of steel

- No soil sealing
- Extremely short assembly times
- Maximum level of pre-assembly
- Perfectly synchronized system components
- High economic efficiency
- Optimum accessibility for terrain maintenance (central support)

Ground-mounted plants are an economically efficient alternative to solar plants on roofs. The right substructure made by Schletter safeguards structural safety, maximum economic efficiency and long durability of ground-mounted solar plants.

In use all over the world
The FS ground-mounted system has proven itself for many years in countless projects almost all over the world. The FS Uno substructure made of steel has been designed as an alternative to the FS aluminium design. It has all the advantages of the FS System (aluminium), but is an even more price-efficient design due to the use of steel. A module clamp adapter allows both vertical module mounting and horizontal module alignment.

An economically efficient solution for big projects
The module-bearing structure is made of strip-galvanised steel and is available in different designs. It has been made sure that the substructure is suitable for almost any terrain. Efficient material utilization and support distances that are adapted to the terrain make the design even more attractive for large ground-mounted solar projects.

In order to reduce the costs to the customer, the system is already largely pre-assembled when it is delivered to the site. As the material is galvanized, FS Uno is rather versatile.

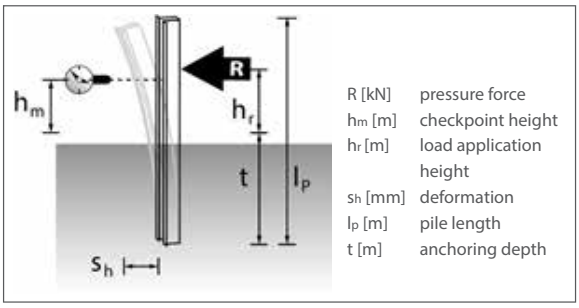
In most cases, the pile-driven foundations are used instead of concrete foundations. This saves both material and labour costs. The system stands for optimum accessibility and there is no soil sealing.

Everything from one source
We manufacture all components ourselves in our factory. Thus, we can avoid shortages and can offer you high quality products at the same time. We supply modular systems for any kind of foundation, any subsoil and any type of mounting.

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

Structural safety first
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.

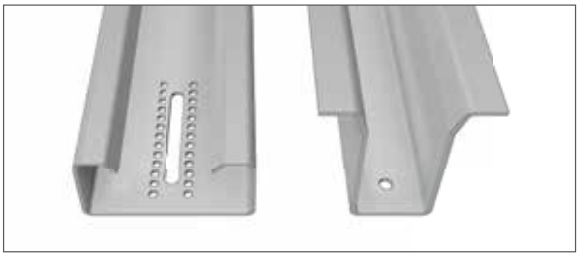
- Inclined pull tests
- Horizontal pressure tests
- Creation of soil profiles
- Chemical analysis in a laboratory



Mechanical background of inclined pull-out tests

The idea behind inclined pull-out tests is that the wind does not act in an isolated manner in vertical or horizontal direction, but 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 bigger 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.

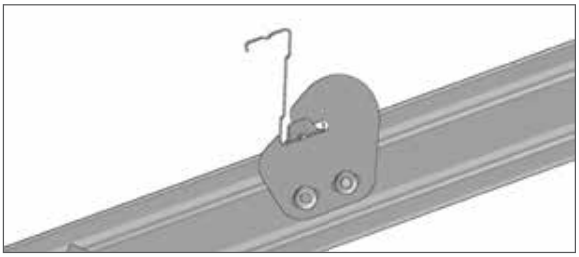
Extremely stable
In order to make sure that the anchoring forces can be transferred up to the upper connection point to achieve maximum structural safety against wind and snow loads, hot-dip galvanized pile-driven foundations of different sizes are used. The pile-driving techniques (FG and SRF) we developed safeguard optimum anchoring in the ground and maximum bending stiffness at the same time.



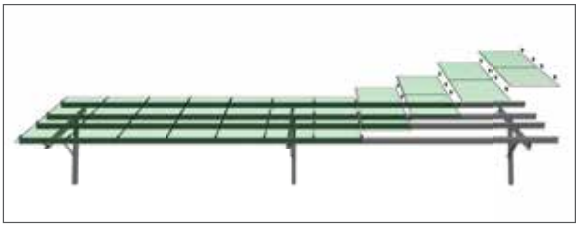
Technical solutions for slopes and rocky subsoil
Special terrain-friendly hydraulic pile-drivers are used for the pile-driving of the profiles into the soil. This pile-driving technique is very suitable for ground-mounted solar plants. Depending on the condition of the soil, one pile-driver can pile-drive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

The pile-driven supports are stable - individually and combined
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 utilize 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.
FS Uno stands for quick and economic solar plant construction of big solar farms with any desired type of solar module. Pile-driven steel profiles with optimized geometry are the foundations of all systems of this series. This safeguards long durability, optimum anchoring in the soil, as little soil sealing as possible and convenient access maintenance operations.

Perfect fit
The module-bearing rail always presents a profile geometry that is aligned to the flow of forces. Thus, the required structural characteristics are achieved with minimum utilization of materials. Fastening grooves are incorporated into all profiles to facilitate assembly. The module-bearing rails are fastened to the supporting units by means of special mounting claws.



According to customer requirements, the modules are mounted quickly and cost-efficiently from the ground or to the rack using suitable tools.
The arrangement of the modules is project-specific. The modules are fastened vertically, horizontally or with the combined clamping system by Schletter.



Technical data

Material	• Pile-driven foundation posts: Steel, hot-dip galvanized • Profiles (rails): Steel, hot-dip galvanized • Fastening elements, screws/bolts: High-grade steel 1.4301
Construction	• Fine adjustment option to align the pile after pile-driving. • Cost-optimized complete construction due to structural optimization • Components designed for extra quick and easy mounting
Module clamping[1]	• Framed and unframed modules • Combined module clamping possible • With steel clamps, standard clamps or Rapid 2+ clamps
Accessories[1]	• Cable channels, cable ducts, cable ties • Components for internal potential equalization
Logistical details	• Highest level of pre-assembly • Quick transport to the installation site
Delivery and services	• 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	• Structural analysis of the respective terrain based upon a geological survey • Individual system statics 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 corresponding country-specific technical standards • Profile geometries with highly efficient material utilization • Structural analysis of all construction components based on FEM-calculation • Optional: Wind load vibration simulation • Optional: Earthquake simulation
Terrain maintenance	• 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

PvMax-S

The inexpensive and efficient ground-mounted system with concrete foundations

- quick and cost-effective project planning, also for special projects
- complete structural analysis incl. foundation calculation with concrete anchor recommendation

The new PvMax-S completes our FS steel product series. PvMax-S combines the FS Duo system with concrete foundations which makes it a cost-efficient steel version of the PvMax3 that is made of aluminium.

The foundation of ground-mounted solar plants on concrete foundations is an efficient way of installing solar plants on subsoils that do not allow pile-driving or when pile-driving would not be economically efficient. This also includes areas with chemically aggressive subsoils, as a foundation using driven piles made of steel is not easy or even impossible on such soils. PvMax-S is also an option for small solar plants, because special soil surveys or test pile-drivings would be too expensive and out of all proportion to the overall investment.

If the PvMax-S is combined with the proven FS Duo100 east-west rack, not only south-facing areas can be used for the generation of solar power, but also areas that are not ideal for "standard" ground-mounted solar plants.

Technical data

Material	Fastening elements, bolts: Steel, hot-dip galvanized or high-grade steel (fastening device, bolts) Rails: Steel, hot-dip galvanized
Logistical details	• Delivery of single components as well as a maximum level of pre-assembly is possible • Transport to the installation site appropriate to the specific kind of mounting
Construction	• Quick and easy mounting
Foundation	• Cast-in-place concrete provided by the customer on site according to our specifications • Pre-cast concrete foundations according to data taken from the system structural analysis
Delivery and services	• Soil statics and structural analysis of the foundation including concrete anchor recommendation • Structural analysis of the individual rack based on regional data • Delivery of the complete mounting material • **Optional:** Rack mounting • **Optional:** Complete module assembly
Structural analysis	• Structural analysis of the respective terrain based upon a soil survey • Individual systems 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 corresponding country-specific technical standards • Highly efficient, material-saving rail geometries • Structural verification of all construction components based on FEM-calculation

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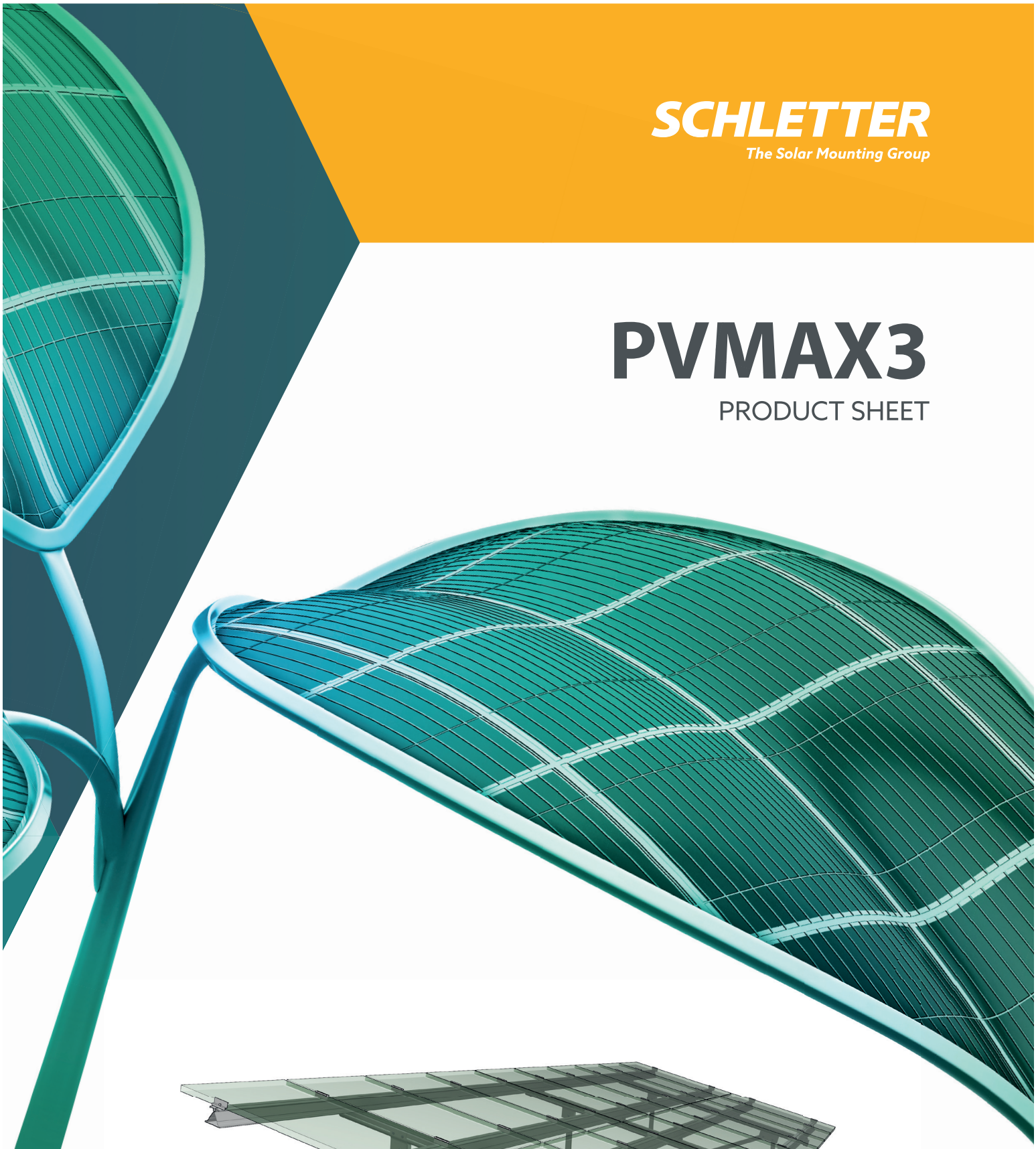
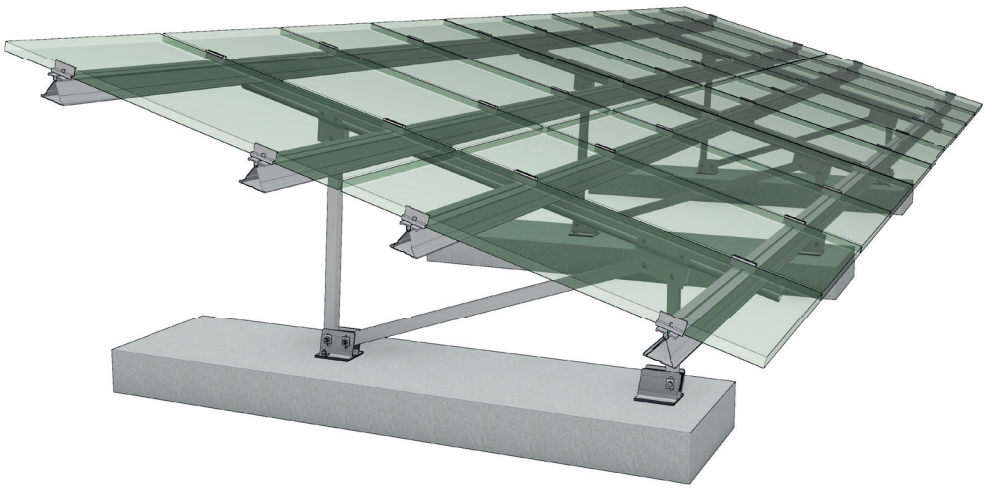
SCHLETTER
The Solar Mounting Group

PVMAX3

PRODUCT SHEET





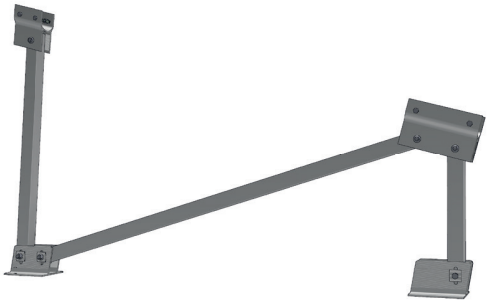
SCHLETTER

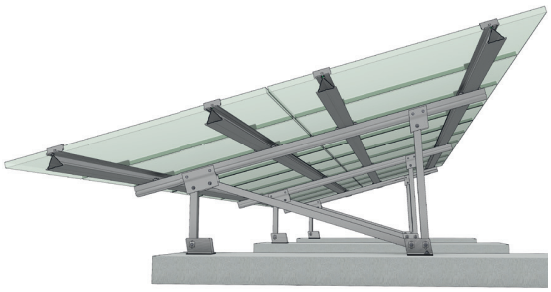
PVMAX3

With PvMax3, you get an universal unit assembly system. PvMax3 can be perfectly combined with our FS Gen6 system for ground-mounted solar plants. In many cases, a foundation with driven piles is not possible due to the soil conditions (soil is too soft or too stony, landfi ll site, etc.). PvMax3 has been designed especially for such cases. As the substructure is fastened to pre-cast concrete foundations, the assembly time is shortened which reduces the costs. This system is also ideal for small solar plants when costs for test pile-drivings or soil expertises are to be avoided.

THE ECONOMICALLY PRICED UNIT ASSEMBLY SYSTEM FOR GROUND-MOUNTED SOLAR PLANTS

- No perforation of the subsoil
- Stability and high durability
- Perfectly synchronized system components
- High level of corrosion resistance (100% aluminium)
- Quick and cost-eff ective project planning, also with special projects
- Complete structural analysis incl. foundation calculation with concrete
- anchor recommendation
- Quick assembly (partially pre-assembled support kits)



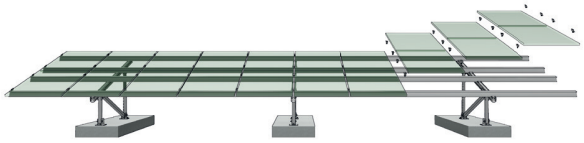


LESS IS MORE

The reduction of bolted connections to the required minimum speeds up and simplifi es the assembly on the construction site. The supports are fastened to the concrete foundation with special profi le bases. We will give you accordant structural specifi cations for the selection of the appropriate dowels.

PLEASE CONSIDER THE FOLLOWING INFORMATION!

On landfi ll sites, there is a maximum admissible soil pressing that must not be exceeded. Please consider that in your inquiry! Just like the FS Gen6 system, PvMax3 allows the use of several types of modules and fastenings. The arrangement of the modules is project-specifi c. According to the individual requirements, the modules can be fastened vertically, horizontally or with the combined clamping technique we have developed.



TECHNICAL DATA

Material	Module bearing profiles: Aluminium, special profiles of the S series Girders: Aluminium, special profiles of the BF series Supports: Aluminium, RHP profiles Bolts, nuts: A2-70, A4-80
Construction	Partially pre-assembled support structures for a quick and simple assembly. Wide spans reduce the number of required supports and foundations
Module clamping [1]	Framed and unframed modules Combined module clamping possible With Rapid16 and Rapid16L
Accessories [1]	cable ducts
Logistical details	Pre-assembled as far as possible Can easily be transported on the installation site
Design calculations	According to the current national standards (in Germany, EN 1991/ EC1). System structural analysis with data on foundation dimensioning and screw anchor recommendation based on the wind and snow loads that have to be considered
Foundation	Concrete (The structural analysis of the system features specifications on reinforcement and dimensioning)

[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

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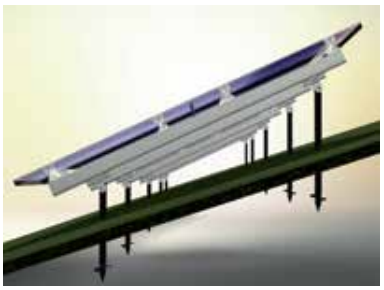
SCHLETTER
The Solar Mounting Group

TerraGrid

The ground mount system for low-level foundations

- Low anchoring depth due to screw (two-disc) foundations
- Maximum structural safety and durability
- Especially for applications on landfill sites
- Simple disassembly

The TerraGrid system is part of the Schletter product series for ground mount systems and allows the mounting of solar plants on steep sites and on heterogeneous subsoils. TerraGrid is mainly used for solar plants on landfill sites, as due to the wide cross-sections of the screw (two-disc) foundations, only very low anchoring depths are required to transfer of the loads from the construction into the subsoil. The Schletter ground-mount systems have been used for many years in large-scale projects all over Europe; they are customized to the project-specific location and terrain category.

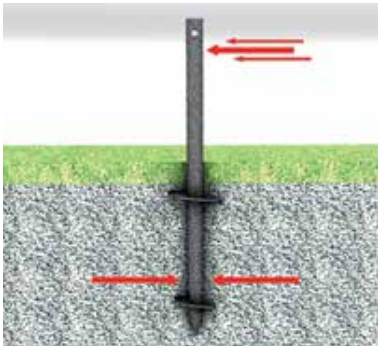


Product Information

The TerraGrid system excels with its flexible application options for complex soil compositions. As the solar plant is mounted on adjustable screw foundations, which are drilled into the soil using special drilling units, soil unevenness can be levelled out. There is no need to seal the soil by concrete foundations. The TerraGrid system is fastened close to the ground and only requires low anchoring depth. We recommend dimensioning the module racks in small segments of up to 12 meters. Thus, the solar plant can be best adapted to the terrain shape. All kinds of modules can be used.

Special Characteristics

The TerraGrid system does not only have advantages in ecological respect, as no concrete foundation is required; it also guarantees optimum structural safety even with difficult subsoils.



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*The Terms of Guarantee are available at www.schletter-group.com/AGB_en.

SCHLETTER
The Solar Mounting Group

Mounting

As a basis for the calculation of the ground mount system, geological surveys are made in advance. For this purpose, samples are taken by specialists and a detailed soil profile is created.

On the basis of the structural analysis, the screw foundations are drilled into the soil using special drilling units, i.e. ground screw drivers.

After that, the rack is put on the foundations and fastened by bolted connections.

Module mounting is carried out quickly and cost effectively from the ground, or, depending on the module arrangement, using appropriate auxiliary devices. Framed modules are usually mounted vertically (in portrait) above each other, unframed thin-film modules horizontally (in landscape) above each other, in order to thus best utilise the structural characteristics of the respective module types.

Accessories

To facilitate the mounting, the following accessories are available:

- Cable duct
- Cable clip for purlin
- Cable clip for girder
- Pipe clamp (conduit strap) for the foundation posts

On request, the complete plant can be equipped with exterior lightning protection by means of only a few additional components. The Schletter Group provides a special planning program for that.

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Technical Data

Material	Fastening elements, screws/bolts: high-grade (stainless) steel 1.4301 Profiles / rails: aluminium MgSi05 /EN AW 6063, EN AW 6005 Screw foundations: steel, hot-dip galvanized
Logistical details	• Quick and easy mounting • Maximum level of pre-fabrication • Optimized delivery to the construction site
Construction	• Adjustment options to compensate for uneven ground • For framed and unframed modules
Soil analyses	Ground survey on site and chemical analysis in the laboratory to create a soil profile.
Structural analysis	• Structural analysis of the respective terrain based upon a geological survey / soil expertise • Individual systems 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 resp. corresponding national standards • Optimised material dimensioning based on the latest research results on wind dynamics • Structural verification of all construction components based on FEM-calculation
Delivery and services	• Structural analysis of the individual rack based on regional data • Pile driving of the foundation posts and delivery of the complete mounting material • **Optionally:** Assembling of mounting structure • **Optionally:** Complete module assembly

Conclusion

Schletter ground mount systems have been designed to provide an economic and practical mounting solution for large-scale ground mount plants and are suitable for almost all kinds of landscape conditions.

Using our TerraGrid system saves both time and labour costs

- The screw foundations can be inserted simply and quickly and safeguard optimum structural safety. Only low anchoring depth is required - even on difficult subsoils!
- The Terra Grid system also provides the opportunity to use areas for solar power generation that would have been unusable for solar installations in the past, as for example landfill sites.
- Both from an ecological and economic point of view, this kind of mounting has the advantage that there is absolutely no soil sealing with concrete - this saves money and protects the environment.

Our team will be happy to assist you with any specific enquiries!

Further information at: www.schletter-group.com.

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TerraGrid Steel

The ground mount system made of steel, with low anchoring depth

- optimum structural safety and durability, even in case of difficult soil composition
- especially for plants on landfill sites or on subsoils which only allow very low anchoring depths
- simple deconstruction

Application of two-disc foundations on a landfill site

TerraGrid Steel was designed to combine all benefits of the proven TerraGrid and TerraGrid Light systems with an even more cost-efficient material. Two-disc foundations form the basis of this PV construction. The wide sections of these "discs" provide a high structural safety of the plant with very little foundation depth, also in case of complex soil compositions. These foundation posts are driven into the ground by special ground screw drivers and can thus level potential terrain irregularities.
Due to its low anchoring depth, TerraGrid is an ideal solution for installing solar plants especially on landfill sites whose subsoils are protected by special sealing foils.
The TerraGrid Steel system is individually designed and project-planned for the respective location. All kinds of modules can be used. We recommend to dimension the module racks in small segments. Thus, the solar plant can be adapted to the terrain topography.

Technical data

Material	Fastening elements, screws/bolts: Steel, hot-dip galvanized or high-grade steel (fastening device, bolts) Profiles (rails): Steel, hot-dip galvanized Screw foundations: Steel, hot-dip galvanized
Design	• Adjustment options to compensate for uneven ground • For framed and unframed modules
Soil analyses	Soil survey on location and chemical analysis determine a soil profile
Delivery and services	• Structural analysis of the individual rack based on regional data • Delivery of the complete mounting material • **Optional:** Rack mounting • **Optional:** Complete module assembly
Structural analysis	• Structural analysis of the respective terrain based upon a geological survey • Individual systems 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 corresponding country-specific technical standards • Highly efficient, material-saving rail geometries • Structural verification of all construction components based on FEM-calculation

Further information at: www.schletter.eu

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