



Solar Module Mounting Solutions

Perfect Synergy For Solar Energy

ILIOS™

Client : Simcon Power Project
Location : Ganjbasoda, Madhya Pradesh
Project Size : 21.3 MW (690 MT)
Solution : ILIOS™ Ground Mounting Solar Solutions
C Purlins made of high strength ZINCALUME® steel

Background:

The solar power segment has taken off in a way that most people would not have anticipated. From an almost non-existent solar market in 2010, India today is home to the 5th largest installed solar power generation capacity in the world and Karnataka is the top solar state of India followed by Telangana, Andhra Pradesh, and Rajasthan. Overall, the country is estimated to add nearly 16 GW of clean energy capacity in 2019, driven by large-scale solar projects. India's solar capacity addition is set for a record in 2019. New installations this year will reach nearly 14 gigawatts (GW), which is about 50% more than the capacity added last year. For addressing this ever increasing demand for solar energy, selection of the right module mounting structure becomes even

more critical. While being cost competitive the module mounting structure should possess uncompromised strength with durability. Over the years the trend has shifted from post-coated to pre-coated products for the virtues it brings to the table. Traditionally used Hot Rolled Sections were overdesigned, making them bulky and redundant. Moreover, on site welding and fragmented supplies added to the woes of the overall feasibility/affordability of the project. In such cost competitive market, selection of the right module mounting structure becomes even more critical. While being cost competitive the module mounting structure should possess uncompromised strength with durability.

ILIOS™ from Tata BlueScope Steel optimizes the consumption of steel, thus optimizing the overall cost. The pre-punched components with standardized kit ensures agility in overall erection/installation. ILIOS™ has gained immense popularity amongst EPC players in the Indian Solar solutions ecosystem.

Simcon Solar Park Project

Simcon Power, is a fully integrated EPC company that provides Design, Engineering, Project Management, Project Execution and maintenance services.

For Simcon Solar Park project in Ganjbasoda, Madhya Pradesh; the company intended to implement Ground Mounting Solar Solutions, with a special requirement. Simcon wanted to install solar panel on Rod foundation, unlike conventional systems. Rod foundation as compared to traditional system has better compatibility with engineering specifications and is easy to install with a quicker turnaround time. It also eliminates the need for expensive and heavy construction equipment.

ILIOS™ Solar Module Mounting Solutions from Tata Bluescope Steel

ILIOS™ customized solutions perfectly matched Simcon's requirements. ILIOS™ offers premium solar module mounting solutions for both ground and roof top applications. These customized structures offer higher corrosion resistance, weight optimisation and quick installation.



Challenges and Solutions

Challenge

Weight optimisation

The initial design proposed for this project was two pole design with base plate foundation. The overall steel requirement for the structure based on base plate proposal was high. Design modification was required for reducing the overall weight.

Solution

After discussing with customer, Tata BlueScope Steel provided two pole design with rod foundation. This helped in reducing overall steel requirement for the structure. Thus weight optimisation was achieved through the modified design.

Structural stability of design

It was very important to achieve structural stability for the modified design with weight optimisation.

Tata Bluescope Steel team of expert engineers provided a stable and compliant design for the required structure. The structural stability of the design was approved by IIT Chennai.

Significant Savings due to Optimized Material Usage : ILIOS™ structural design is engineered for strength and durability and minimizes material usage without compromising on strength and load. Weight optimization leads to cost advantage.



Product

Challenge

Increase in weight due to GI sections

To achieve high strength and structural stability Galvanised sections with higher thickness were initially proposed for the design. But this resulted in increase in weight of the structure.

Solution

High strength and Light weight C section purlins made from G550 ZINCALUME® steel was offered to overcome the challenge.

Longer life

Solar module mounting structures are usually exposed to extreme environmental conditions. So it is important to have higher corrosion resistance for longer life.

C section purlins made from ZINCALUME® steel were offered. These sections have greater corrosion resistance and last upto 4 times longer than galvanised steel.

Higher Performance: High quality Al-Zn alloy ZINCALUME® steel ensures better performance under extreme environments as compared to galvanized steel.



On Time Delivery

Challenge

The installation process was planned in several phases. It required 'Just in Time' delivery of Mounting structures in accordance with other raw materials.

Solution

Tata Bluescope Steel operations and supply chain team were able to deliver the materials 'Just In Time' as per the required schedule. All the supplies of 21.3 MW were executed within the agreed timeline.

Flexibility with Customization: ILIOS™ comes with a wide range of sectional dimensions and thicknesses; making it suitable for every requirement. Pre Punched Sections ensure faster project delivery and takes lesser time for assembly & installation.



Ground Mounted Solar Installation In Progress

Conclusion:

Complete understanding of customer's requirement, adopting innovative design optimization techniques, enabling quick turnaround through an agile supply chain along with team work and collaboration; helped achieve customer satisfaction.

"We are delighted to do business with LYSAGHT® from Tata BlueScope Steel from whom we procured 700 MT of material for our 22 MW Power project. Customer centric approach and the promptness displayed by the company representatives was very professional. Tata BlueScope Steel's in-house engineering team helped us design the project which resulted in substantial weight optimization and thus helped us to save on the cost. The supply of the material was trouble free and the on-time delivery helped us to achieve the project timelines. Overall with LYSAGHT® we had a trouble free experience and we would like to do business with LYSAGHT® again"

Anil Kumar Verma

Co-Founder & Director,
Simcon Power and Infrastructure Pvt. Ltd.