

# Tata BlueScope Steel

## Delivering Value Engineering

Tata BlueScope Steel undertakes re-roofing of damaged roof of Salcomp Manufacturing India using LYSAGHT KLIP-LOK® 700 - the widest concealed roof system - and Double Skin TRIMDEK®

**F** inland-based Salcomp, a global leader in the mobile phone charger market, with an existing manufacturing capacity of 150-200 million chargers annually, wanted to expand its manufacturing capacity by 100 million chargers per annum. Salcomp contracted Tata Bluescope Steel to undertake re-roofing of its facility in Sriperumbudur, Chennai. Following the successful roofing, the factory expanded its manufacturing unit for making mobile accessories for global brand Nokia, within an area of 12,000 sqm, with re-roofing of total 160 tons.

The Sriperumbudur manufacturing site had a 10-year-old PEB building that had severe leakage problems in several locations. This was causing huge production losses. The structure

required comprehensive inspection by a reliable roofing consultant for which Salcomp approached Tata BlueScope Steel.

The Tata Bluescope team conducted an in-depth investigation of the building and identified the root cause of the roofing problem. The building had many collateral loads hanging from purlins and rafters. Many rafters were already deflected leading to further deflecting of the main purlins, resulting in several undulations in the existing roof, which had a Single Skin Screw Down System. Undulations caused rain water stagnation, leading to heavy leakages at many places.

Tata BlueScope suggested LYSAGHT KLIP-LOK® 700 - the widest concealed roof system - with LYSAGHT TRIMDEK® as

the liner panel. LYSAGHT KLIP-LOK® made from high strength ZINCALUME® steel has long been a roofing design favourite in prestigious commercial, industrial and architectural projects across the globe.

Besides its high performance, with its bold rib geometry rising from wide, flat pans, LYSAGHT KLIP-LOK® roof provides a strong visual statement, and its flat pans offer excellent water carrying capacity. It is one of the strongest profiles with a longer spanning capability. Absence of piercing and a special clip locking ensures zero chances of roof leakage. It offers on-site roll forming preventing step joints and end laps. LYSAGHT KLIP-LOK® has been tried and tested at NATA Lab (Australia) under rigorous cyclonic and non-cyclonic applications.

### Design challenge

While the solution seemed straightforward, there were a few onsite challenges that had to be addressed: for instance, there were too many undulations along the slope length of the roof due to deflections in the main frame rafters and purlins. These undulations needed to be rectified to achieve leakproof roof system

**Solution:** Contour layout was conducted to measure the undulations at every 5 metres along the roof length. Accordingly, supporting brackets with heights varying from 40mm to 140mm were designed and detailed to get the same level or plane of top sheet.

### Operational challenge

Fixing of LYSAGHT KLIP-LOK® clip was a challenge since sub purlin line was not straight due to longitudinal mis-alignments of main purlins. Variable height supporting brackets were also provided to ensure perfect alignment to the existing undulated roof.

**Solution:** Supporting brackets were designed and detailed to support sub purlins. Alignment was made to bring the sub purlins in line, parallel to the building length to achieve placement of KLIP-LOK® clips in a straight line.

### Conclusion

- Project completed with Zero Harm: new-age construction technology from LYSAGHT® team was put into place to enable the workforce to execute the job seamlessly. With safety training and regular supervision, the project was completed without any untoward incident.
- Right solution with on-time delivery: LYSAGHT® team proposed a technically sound solution to the customer. Onsite roll forming, and efficient project management ensured on-time delivery.
- 100% leak-proof solution: Single length sheet of 60 metres from ridge to eave avoided any joints and eliminated any kind of leakage. This also helped savings in lap lengths, thus reducing the input material and installation time. Since the customer was looking for a leakproof roof, installation support and best quality workmanship were provided to achieve the desired objective. Inspections were undertaken on a daily basis to achieve the highest quality of installation. With collaborative team work, design optimisation and an efficient supply chain management, the project was successfully delivered to customer's satisfaction.

"Tata BlueScope Steel has successfully completed the re-roofing project at Salcomp unit 3. A total 14,000 sqm area of the factory was completed within the stipulated time. Also, we would like to appreciate the material quality and timely support of the company. Their safety, quality and performance during the project phase was good.

**C R Subramaniam**, GM- Compliance and Admin, Salcomp

