



MR-24[®]

Delivering excellent weather-tightness; seamlessly

LYSAGHT[®]

Global Excellence since 1857

Customer	: KONE Elevator India Private Limited
Location	: Sriperumbudur, Chennai
Project Consultants	: C R Narayana Rao
Project Partners	: Ocean Lifespaces India Pvt. Ltd.
Customer Requirement	: FM Approved roofing system for withstanding I-135 wind rating

World leaders in escalator and elevator Industry, KONE wanted to set up their second plant in Sriperumbudur, Tamil Nadu. To match up with KONE's international repute and commitment for highest safety norms; Tata BlueScope Steel was recommended by consultant 'C R Narayana Rao' and awarded by 'Ocean Lifespaces' as their trusted partners for Roof and Wall Cladding (supply and installation).

Customer requirement

Since the project location was prone to extreme wind exposure, KONE wanted a system that would withstand FM I-135 wind rating, which is the highest rating so far used in roof designing in India. KONE needed a leak proof structure with a roof pitch of 2.29°. Being a premium brand, KONE expected the facility to resonate with their global repute alongside safety being of paramount concern.

Tata BlueScope Steel's recommendation

Considering the onsite conditions, Tata BlueScope Steel recommended MR-24[®], a standing seam metal roof system which is the only FM approved profile that is tested beyond I-120 wind rating. The MR-24[®] Roof System is a standing seam roof system where the critical 180° of the roof panel seam is mechanically seamed on-site to complete a 360° Pittsburgh Double-Lock seam creating the tightest seam available today. The Pittsburgh double-lock seam is the same design used to seal soft drink cans, added to which a factory applied sealant assures weather tightness in even the most unforgiving conditions. The slope requirement was easily met by MR-24[®] as it has prowess to offer a minimum pitch of 1.2° which easily qualified the customer's requirement of 2.29°.

MR-24[®] roof system is just one of the reasons why Tata BlueScope Steel is an architect's first choice! With 50 years of global presence, MR-24[®] is the time-tested and widely used standing-seam roof system. Tata BlueScope Steel has FM Approved MR-24[®] panel assemblies for wind class rating up to I-180.

Tata BlueScope Steel was entrusted with end-to-end responsibility, from design to detailing and supply to installation. SHADOWRIB® 900, an aesthetically superior wall cladding profile, with its flat pans that offer a 38 mm deep crest, accentuated the overall appearance of the facility. A perfect match to KONE's corporate blue elevated the fascia, giving an elegant look to the entire structure.

Challenge

The sheeting for MR-24® roof commences from right to left, with a condition that an entire roof front is available for roofing, enabling uninterrupted seaming process. However in this case, only the portion of roof was ready.

Solution

In order to execute the project on-time, TBSPL Construction team followed a customized approach that helped to achieve MR-24® roofing, without any hindrance.



Challenge

There are chances of Insulation being sagged and create the gap between bottom of top panel to top of insulation, which leads to vapor condensation.

Solution

Tata BlueScope Steel designed a roof system in such a way that the bottom liner and Top MR-24® were perfectly sandwiched with 100 mm thick insulation without any gap. In addition, a Vapour barrier is placed in between insulation and MR-24® panel which ensured the elimination of condensation.



Challenge

Customer wanted the staggered intermediate Skylight on the roof for 4% of the total roof area.

Solution

For any standing seam profile in the market, Skylight can be provided from Eave to Ridge for a full length of the slope, whereas in MR-24® Skylight arrangement is specially designed to install intermediately to satisfy the customer requirement. Also intermediate skylights are seamed to 360° to ensure a leak proof performance.

Challenge

Constant thermal expansion and contraction of the roofs according to the weather conditions could have resulted in thermal stress to the profile.

Solution

MR24® is designed in such a way so as to allow smooth expansion and contraction, as per the weather conditions with the help of specially designed clips which have a sliding arrangement. Since the MR-24® roof is seamed at 360 degrees to the stainless steel tab of clips, chances of thermal stress to the profile due to thermal movements is eliminated. For KONE a 100% leak proof system was provided since there were no screws and punctures in the roof.

KONE and Tata BlueScope Steel, both follow world class safety standards. Tata BlueScope Steel deployed a mechanical crane for handling sheet of 10.5m length and hoisting it to a roof height of 14 m for the entire duration of the project. Also two boom lifts and one scissor lift were made available for providing safe platform for workmen.



Demonstrating “Zero Harm” philosophy, Tata BlueScope Steel supplied and installed over 500 MT of metal sheets to KONE. With best safety practices, the company has been able to clock over 50,000 LTI/MTI free man-hours. Entire engineering, design and detailing for the roof and wall cladding including gutter and downpipe was done by Tata BlueScope Steel, and were vetted and approved by CRN and KONE Finland team.



Appreciate the effort taken by Tata BlueScope Steel in maintaining safety practices at site. Good to note that 50K safe man-hours were achieved by them at KONE site. Let's continue these efforts till the end of this project and make KONE site safe to work.

B. Sankar

DGM – New Factory Project
KONE Elevator India pvt. Ltd.

