



SMARTDEK® 51

Building Stories; Spanning Capabilities



Project Name	: D Y Patil University, Navi Mumbai
Application	: Hostel Building
Number of buildings covered	: Single Building (Phase A, B, C)
Sq. m	: 42,000 Sq. m
Tonnage and Thickness	: 520 MT, 1.2 mm thickness

Background:

D Y Patil University was established in 2002 with a vision to provide quality education in all spheres of higher education and health services in India. As part of their expansion plan, the university wanted to construct a new hostel building to extend residential facilities to its students.

Customer requirement involved fast construction of a complex hat truss supported structure for which around 42,000 Sq. m area of decking sheets were required. LYSAGHT® engineering team performed a thorough study of on-site conditions such as vertical and horizontal load capacities, fire ratings, joist spacing etc. and offered LYSAGHT SMARTDEK® 51, 1.2 BMT for a slab thickness of 150 mm and fire rating of 120 minutes.

SMARTDEK®51 has excellent spanning capacities for greater strength and less deflection. It is a complete structural steel decking system for concrete, masonry or steel frame construction. It helps customer save on concrete and reinforcement cost. The diagonally opposite embossment on either side of webs and on the top of the flange provides mechanical interlocking between steel and concrete,

ensuring adequate composite action. Additionally the panel has a 'V' shape 10mm deep stiffener on rib and valley for extra strength and a male and female interlocking at side lap for ensuring zero leakage of concrete.

The composite interaction between the slab and the beam is achieved by the attachment of shear connectors (Studs) to the top flange of the beam. It is a standard practice for the studs to be welded to the beam through the decking, prior to pouring the concrete. For DY Patil Project, a 19mm diameter and 120 mm long stud were used.

LYSAGHT SMARTDEK® 51 gets augmented by MEGAFLOOR design software. The software accurately optimizes design and provide assurance on performance.

At D Y Patil University the new structure had a lot of openings at corners and edges of decking, LYSAGHT® engineering team guided the customer with the supporting details of each opening pattern.

MTO delivery helped in effective planning. Just-in-time system was followed to enable swiftness in material supply as per requirements. LYSAGHT® project management team worked in close coordination



with client to ensure on-time and complete delivery, enabling customer to focus on more important issues of the construction phases. These practices resulted in timely project delivery and speedy construction of the structure.

Sorting of materials floor-wise was crucial in order to efficiently segregate the same once received. LYSAGHT® understood the floor and area wise plan for laying decking sheets and applied demarcated codes which helped the customer segregate material section and floor wise with convenience.



Before Concreting



After Concreting

Conclusion:

Tata BlueScope Steel's construction and engineering capabilities not only fulfilled D Y Patil University's project requirements but also ensured adherence to desired timelines. Right from its mock-up stage, the customer was thoroughly impressed with the timely efforts taken to build up the prototype. Overall SMARTDEK® 51 has proven itself as the most suitable alternative for conventional reinforcement materials, especially in high-rise building projects such as D Y Patil's hostel premise.