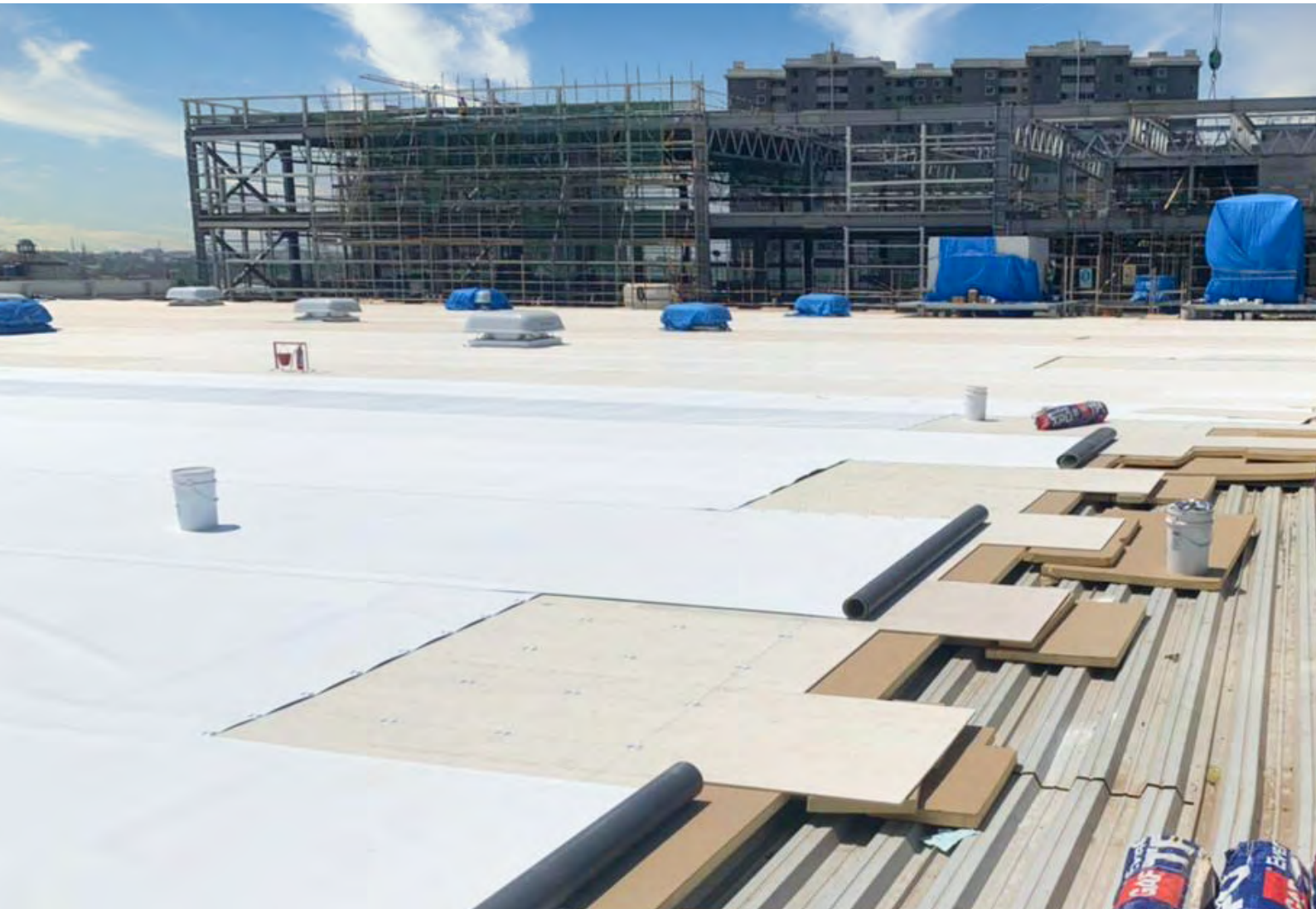
Georgia-Pacific
DensDeck®
Roof Board

CASE STUDY

DENSDECK® ROOF BOARDS, FIRE-RESISTANT ROOF COVER BOARDS, WERE SPECIFIED FOR THE SOLAR PANEL FLAT ROOF OF IKEA BANGALORE



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DensDeck® Roof Boards, gypsum core cover boards by Georgia-Pacific DensDeck® Roof Board classified as A1 in accordance with EN 13501-1 and non-combustible as described and tested in accordance with ASTM E136, were installed to help increase the performance of the ***solar panel flat roof*** system of IKEA Bangalore. The roof was designed to provide an on-site source of renewable energy, in line with IKEA's global sustainability policy. ***DensDeck® Roof Boards*** were specified in a cover board position to enhance the robustness and improve the fire resistance of the ***flat roof build-up***. The roof helps protect the 42,600 square metre store. The store has an estimated footfall of seven million customers a year.

PROJECT NAME	IKEA STORE, BANGALORE
CLIENT	IKEA
CONTRACTOR	NOT PROVIDED
SPECIFIER	BMI GROUP INDIA

The store opened in June 2022 and as well as stocking over 7,000 products, it includes a 1,000-seat restaurant and a supervised children's play area. It is IKEA's third store in India and directly employs around 800 people, with a further 1,500 providing various support services.

The 12.7 mm thick DensDeck® Roof Boards were chosen as a critical part of the specification of solar panels on the flat roof. The gypsum core boards with glass mat facers were installed above PIR (polyisocyanurate) insulation and provided a firm, flat and homogenous substrate for the white Everguard TPO (Thermoplastic Polyolefin) 60-mil membrane. The roof assembly was installed over a 0.7mm gauge D64 TATA profiled steel deck.

WHY WERE COVER BOARDS REQUIRED FOR THE ROOF MOUNTED SOLAR PANEL FLAT ROOF?

It was decided early in the project's planning stage that cover boards would be required for the solar flat roof installation. The aim was to increase the resilience of the solar panel roof system and add an extra layer of fire resistance.

The 5,000 square metre roof of the IKEA Bangalore store houses 450-500 roof mounted solar PV modules with each one ballasted to keep them firmly in position. All this weight, along with that of other heavy equipment, such as HVAC units and ducting, introduced a static load that meant two layers of 60 mm BMI Everguard PIR insulation placed over the steel deck needed additional protection from compression. Resistance to the dynamic load imposed by increased foot traffic during regular maintenance and inspection visits and impact resistance was also a consideration.

The cover boards helped introduce an increased layer of fire resistance into the roof build-up in line with the project's FM requirements. FM Approval offers global third-party testing and verification services covering a wide range of properties. These include testing for fire resistance and in many cases, projects are required to be specified with flat roof systems that are FM approved.

THE REASONS FOR THE SELECTION OF DENSDECK® ROOF BOARDS FOR SOLAR PANEL ROOF OF IKEA BANGALORE

When asked why DensDeck® Roof Boards were chosen for the project Ashok Ninan, Managing Director at BMI Group India, explained the key reasons were twofold:

> *"We were looking for a fire-resistant roof cover board to meet the fire requirements of the project and one that would provide a rigid substrate to protect the insulation from compression. We chose DensDeck® Roof Boards over other fire-resistant roof cover boards because they are non-combustible, with a Class A fire rating, and have greater compressive strength and impact resistance".*

DensDeck® Roof Boards were installed in stages over 12 months and Ashok commented that using the fire-resistant flat roof cover boards brought also the benefit of speeding up the roof completion: "Laying the TPO membrane onto the smooth and sturdy surface of the DensDeck® Roof Boards gave the installers confidence in the application process knowing that a good bond would be achieved, and the insulation below would be protected".

After seeing ***DensDeck® Roof Boards*** in action on the new IKEA store in Bangalore, we asked Ashok if he would consider using them on other projects and the reply was emphatic:

"Yes definitely. We are already talking to consultants about DensDeck® Roof Board and including it in our standard specifications".

Contact us for more information on DensDeck® Roof Boards and DensDeck® Prime Roof Boards. We are happy to discuss how our range of roof and cover boards can help achieve specific performance requirements and speed up the installation of your low slope commercial roof system.

DENSDECK RESOURCES

You can book one of our CPDs here

densdeck.buildgp.com/advice-resources/request-a-cpd

And you can read more case studies here

densdeck.buildgp.com/case-studies

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