

Chhatrapati Shivaji International Airport

KERAFLEX MAXI S1 and MAPELASTIC: a winning combination for a grandiose international project in Mumbai, India



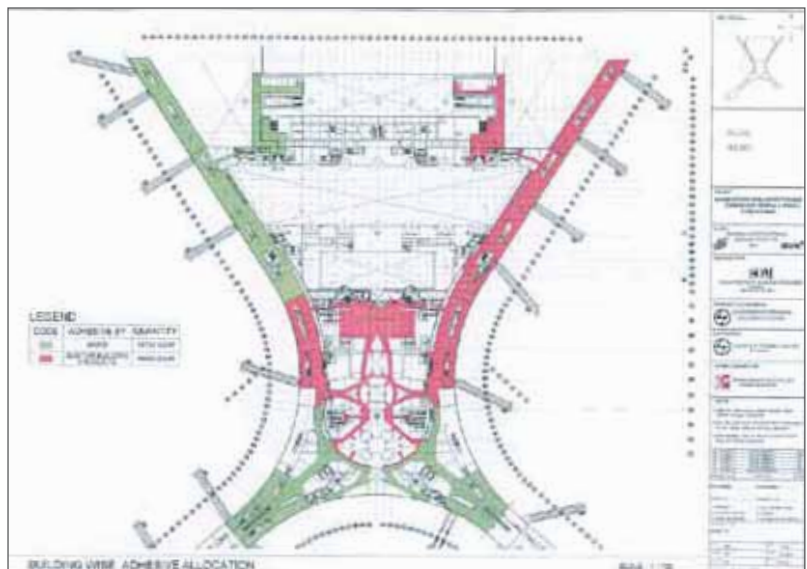
Although India is going through a period of sustained, rapid growth, it is also a country full of contradictions, and in particular the co-existence of rural areas with large, technologically-advanced cities. Seven hundred and forty two million people out of total population of one billion two hundred million people live in rural areas, while

there are also over-populated cities such as Mumbai, Kolkata, Chennai and New Delhi. With these characteristics, India is one of the few areas in the world where, when we talk about projects, it may easily occur that we are not talking about the construction of a simple house, but of an entire city! Within the framework of a process to construct new infrastructures and increase the capacity of existing ones, the Indian government has decided to upgrade or rebuild more than 50 airports.

There are 25 international and 115 domestic airports in the country. The Airport Authority has made plans to modernise 35 airports. A further investment of 75.5 million dollars has also been programmed for three airports in the north-east.



ON THE OPPOSITE PAGE AND ABOVE. Mumbai airport upon completion of work. **BELOW.** A plan view of two of the levels at the airport. Mapei products were used in the areas highlighted in green.



PROJECTS LAYING GRANITE

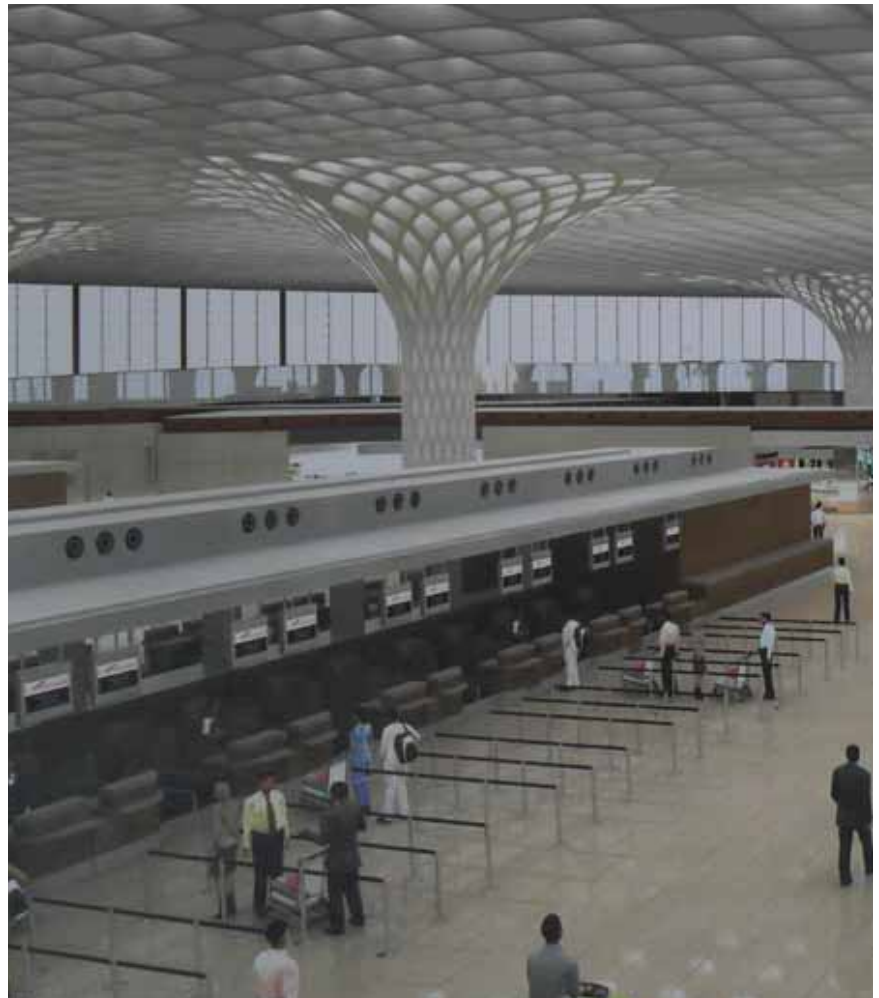


IN THESE PHOTOS.
Brazilian Santa Cecilia granite, bonded with KERAFLEX MAXI S1 and KERALASTIC T, was used for the flooring in the airport.

The Best Products to Lay 160,000 m² of Granite

The airport in New Delhi was completed in 2011 when Mapei India had still not been created. In spite of this, shortly before Mapei India was actually founded, Mapei still managed to win a contract for the Mumbai Airport International Terminal, just a few kilometres from Mumbai City; a large job which involved the laying of around 160,000 m² of Brazilian Santa Cecilia granite slabs measuring 60X60 cm. To lay the granite flooring, the client specified the use of high performance adhesive suitable for large sized natural stone slabs and for flooring subjected to intense traffic. For this task, after various tests in the Mapei Central Laboratory in Milan, KERAF-

LEX MAXI S1 high performance adhesive was singled out as the ideal product to lay the flooring. This is a high-performance, deformable cementitious adhesive with no vertical slip for ceramic tiles, particularly suitable for laying large porcelain tiles and natural stone slabs (thickness of adhesive from 3 to 15 mm). To guarantee that all the laying operations were carried out correctly, it was agreed with the contractor, Shah Granites, that Mapei technicians would train a team of local floor installers directly on site for one week before commencing laying. Accordingly Mr Wong Chun Fatt from Mapei Far East came to India and conducted the training for a week at the project site. KERAFLEX MAXI S1 was used to lay the granite in the enor-





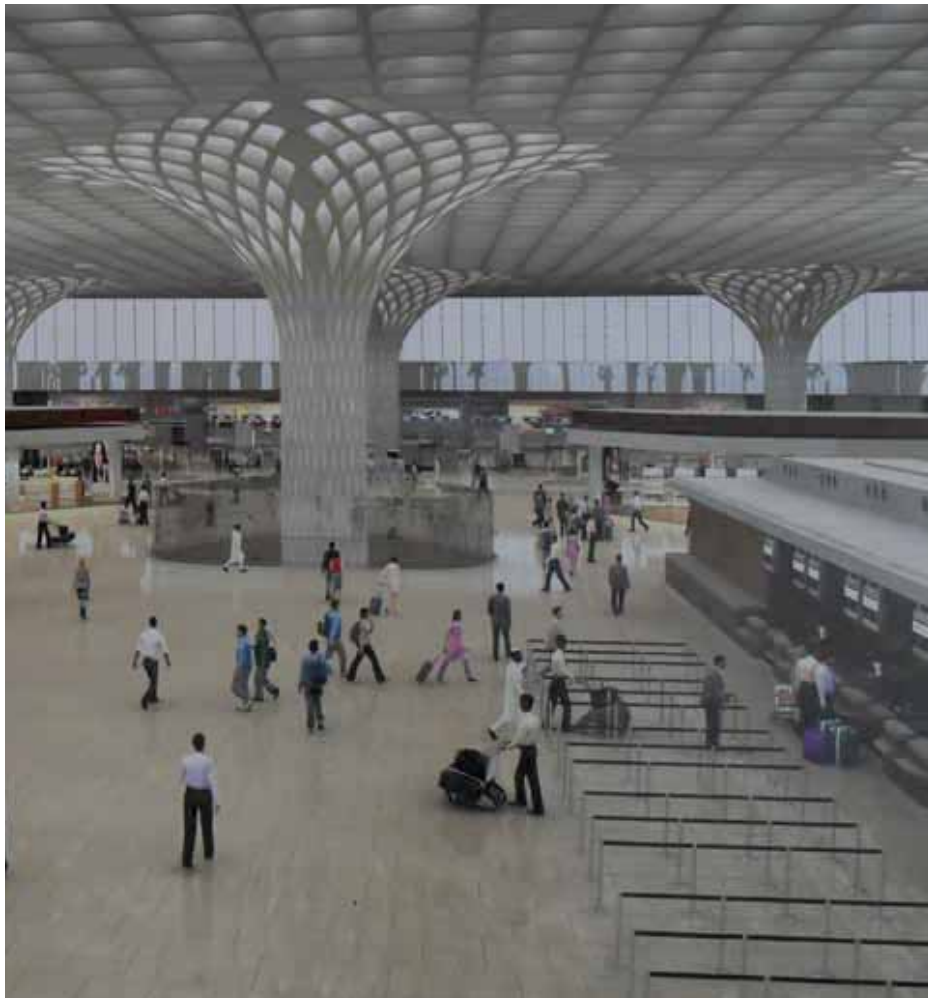
mous lobby in the new terminal and in the terminal bathrooms. Apart from for the flooring, it was also used to bond the granite wall covering. Before laying the stone, EPORIP two-component epoxy adhesive was used to repair the cracks in the substrate. Once this had been done, the surfaces were smoothed over with ULTRAPLAN ECO self-levelling, ultra rapid-hardening smoothing and levelling compound with very low emission of volatile organic compounds (VOC) applied in layers from 1 to 10 mm thick. KERALASTIC T two-component, high-performance epoxy-polyurethane adhesive was used to lay granite over the steel surfaces in the service lifts and elevators. Laying of the granite slabs was completed by the all-important grout-

IN THE SPOTLIGHT KERAFLEX MAXI S1

High performance, cementitious adhesive with no vertical slip, suitable for the installation of large-size ceramic tiles and natural stone, for interior and exterior bonding (up to 15 mm thick). KERAFLEX MAXI S1 is a deformable, improved slip resistant, cementitious adhesive with extended open time. The innovative Low Dust technology considerably reduces the amount of dust compared with standard cementitious adhesives, making floor-layers' work easier and healthier. It can contribute up to **4 points** to obtain the **LEED** certification.



ing of the joints. The product chosen for this operation was KERAPOXY anti-acid epoxy grouting mortar and adhesive for laying and grouting ceramic tiles and stone (minimum width of joints 3 mm). MAPELASTIC two-component flexible cementitious mortar was used to waterproof the water bodies around the structure, a product particularly recommended to form highly flexible, protective waterproof coatings on concrete structures prone to cracking. In this specific case, because the surfaces are particularly stressed, MAPELASTIC was reinforced with MAPENET 150 alkali-resistant, 4 x 4.5 mm weave glass fibre mesh, for reinforcing protective waterproofing coatings, anti-fracture membranes and cladding systems.



Technical Data

Chhatrapati Shivaji International Airport,
Mumbai (India)

Period of Intervention: 2011

Intervention by Mapei: laying granite slabs and waterproofing of the water bodies

Client: Mumbai International Airport Private Limited - MIAL - (a Joint Venture between GVK India & Airport Authority of India)

Designers: Owings & Merrill LLP, New York (USA)

Contractor: Larsen and Toubro Ltd, Mumbai

Laying Companies: Shah Granite, Plus Systems, Waterman, SMG Inter Decor, Rajasthan Marbles, AES

Mapei Technical Assistance: Enrico Geronimi (Mapei SpA), Sandeep Shinde (Mapei India) and Wong Chun Fatt (Mapei Far East)

Mapei Co-ordinators: Lorenzo Pastore (Mapei SpA), Abhijit Dutta, Meher Mukherjee, A. Deshpandey (Mapei India)

Mapei Products

Preparation of the substrates: Eporip, Ultraplan Eco

Laying and grouting of granite slabs: Keraflex Maxi S1; Keralastic T; Kerapoxy

Waterproofing: Mapelastik, Mapenet 150

For further information see the websites
www.mapei.com and www.mapei.in