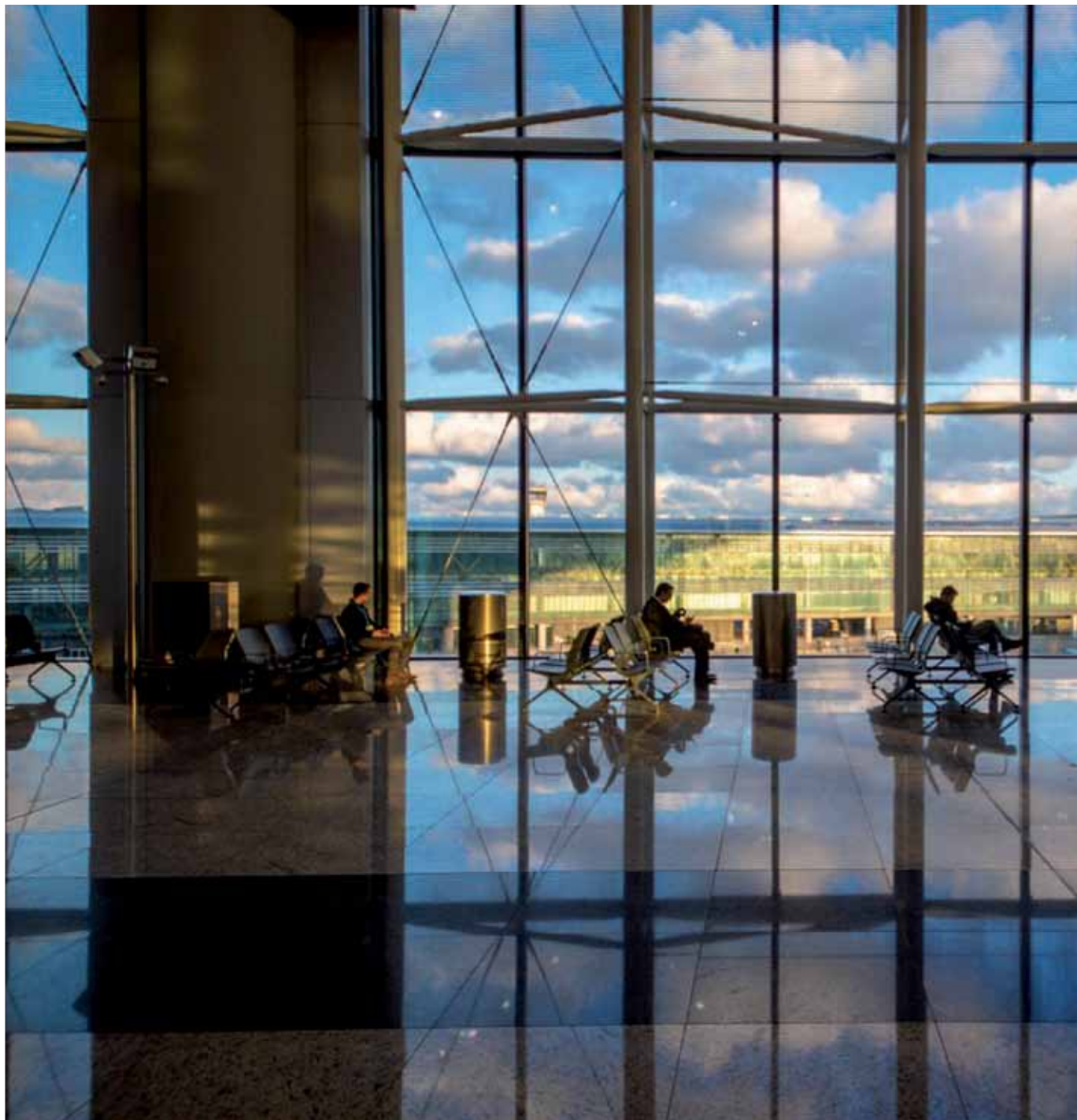


Istanbul

THE NEW ISTANBUL AIRPORT



IN THE FACING PAGE.

A view of the whole Istanbul Airport.

BELOW. KERACOLOR FF grout was used to grout the joints in all the ceramic coverings of the project.



FROM TERMINAL 1 TO THE AIR TRAFFIC CONTROL TOWER: MAPEI PRODUCTS IN THE WORLD'S LARGEST AIRPORT WORLD

The 1st section of Istanbul's new airport, designed to become the world's largest airport in terms of annual passenger capacity, has been officially inaugurated on 29th October 2018. From soft launch till full completion, the airport is expected to open in four phases. Phase 1 was completed with 1.4 million m² of terminal space, an ATC (Air Traffic Control) tower, support facilities and two runways.

Between 2021 and 2022, phases 2 and 3 will be completed, featuring two additional air traffic control towers and two additional runways. By 2028, the airport is expected to be fully completed with the sixth runway, as well as the opening of a satellite terminal. It will offer flights to more than 350 destinations with an annual capacity of up to 200 million passengers. Istanbul's new airport will also be home to the world's largest duty-free shopping complex. The 53,000 m² shopping complex will consist of six sections, including luxury stores and bazaars.

AN UNPRECEDENTED PROJECT

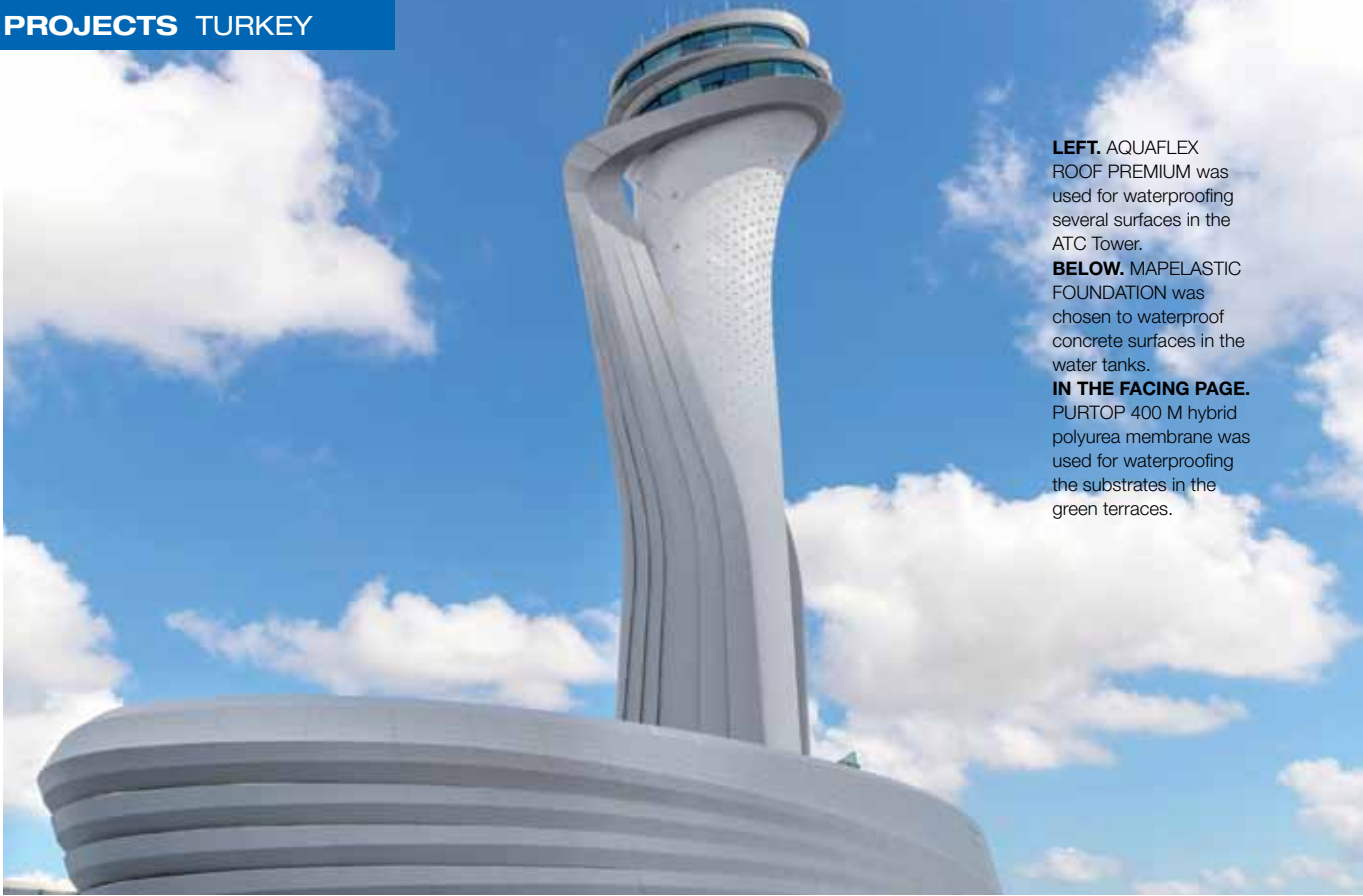
Istanbul new airport aims to establish itself as a major travel hub and a key player on the world aviation stage: once completed, it will be spread over 76 km², having the world's largest terminal under one roof.

"From an airport planning perspective, the project is unprecedented, both in terms of its size and the speed with which the project was attempted," said Dr Thomas Budd, Lecturer in Airport Planning and Management, Centre for Air Transport Management, Cranfield University, UK.

Mapei Yapı Kimyasalları A.S, the Turkish subsidiary of the Group, began supplying products to the project in 2016 and continued in 2017 with a broader scope, providing products and systems for several applications.

MAPEFIX VE SF chemical styrene-free vinylester anchor was chosen for bars which had been applied throughout the project. Due to its quicker setting time, this product provided great advantage in comparison with traditional epoxy based chemical materials.

MAPELASTIC FOUNDATION two-component, flexible cementitious mortar was used for waterproofing concrete surfaces in the water tanks, which were subject to both posi-



LEFT. AQUAFLEX ROOF PREMIUM was used for waterproofing several surfaces in the ATC Tower.

BELOW. MAPELASTIC FOUNDATION was chosen to waterproof concrete surfaces in the water tanks.

IN THE FACING PAGE. PURTOP 400 M hybrid polyurea membrane was used for waterproofing the substrates in the green terraces.

**IN THE SPOTLIGHT
AQUAFLEX ROOF PREMIUM**

It is a ready-to-use, solvent-free, liquid waterproofing membrane, without VOC emissions. Once applied, it forms a seamless membrane with 400% elongation capacity that is resistant to atmospheric agents, UV rays and ponding water. It is resistant to foot traffic

and may be applied on all walkable areas without an additional protective layer. Its excellent mechanical characteristics remain stable over the years which makes the product highly durable.



tive and negative water pressure. Prior to the application of MAPELASTIC FOUNDATION, PRIMER 3296 acrylic primer with strong penetrating action had been applied to level off the surface and improve its bonding properties.

After applying MAPELASTIC FOUNDATION, either MAPECOAT I 24 or MAPECOAT DW 25 were used for the protection of the waterproofing layers during their service life. MAPECOAT I 24 two-component epoxy paint has a high resistance to aggressive chemical agents. MAPECOAT DW 25 is a two-component epoxy paint used to form a coating on concrete surfaces that are in contact with drinking water and foodstuffs.

MAPEPROOF SWELL single component hydro-expansive paste was used to solve the delicate problem of waterproofing pipe inlets and outlets. MAPEPROOF SWELL has been specially developed to form flexible, waterproof seals in cracked reinforced concrete or in precast elements with infiltration of water.

THE AIR TRAFFIC CONTROL TOWER

The site's landmark air traffic control tower has been designed by Pininfarina and Aecom, selected from six solutions proposed by international architecture studios, including Zaha Hadid, Fuksas, Moshe Safdie, Grimshaw Architects and RMJM.

The project has won the prestigious International Architecture Award 2016, promoted by the Chicago Athenaeum: The Museum of Architecture and Design and the European Center for Architecture, Art Design and Urban Studies.

The design concept of the tower features elements evocative of Turkish culture and is inspired by the tulip, which has been a symbol of Istanbul for many centuries and an important





cultural reference in Turkish history. The shapes of the flower were redesigned and reinterpreted through Pininfarina's identity, based on its profound knowledge in automotive design and wind tunnel modelling, as well as on the influence inherited from aerodynamic shapes used in aeronautical design. AQUAFLEX ROOF PREMIUM ready-to-use, water-based polyurethane waterproofing membrane was used for waterproofing several surfaces in the ATC tower as it was the best solution for both old and new surfaces with slopes or irregularities.

MAPECOAT I 600 W two-component transparent epoxy primer in water dispersion was used on the surfaces as an adhesion promoter and MAPEFLEX PU 40 polyurethane sealant with a low modulus of elasticity was chosen for sealing expansion and contraction joints.

KERACOLOR FF high performance, polymer-modified, water-repellent, cementitious mortar was used for grouting joints in all the ceramic tile coverings of the project. ELASTORAPID

,high-performance, two-component, highly deformable, cementitious adhesive with extended open time, was used for bonding ceramic tiles in some piers.

WATERPROOFING THE TERRACES

For waterproofing the green terraces which cover about 75,000 m² in the departures area, PURTOP 400 M two-component, solvent-free, spray applied, hybrid polyurea membrane was the selected product. It has an excellent resistance to alkalis and diluted acids and an elongation capacity higher than 400%. Besides, it can boast the certification for resistance to root penetration according to CEN/TS 14416 which was mandatory for green terrace application in this project. Before using PURTOP 400 M, PRIMER SN two-component fillerized epoxy primer was applied on the substrates.

MAPEFLOOR FINISH 55 highly flexible polyurethane finish was finally used as a protective layer for a 2000 m² area where colour protection was needed.

TECHNICAL DATA

Istanbul Airport, Istanbul, (Turkey)

Period of construction:

2016-on going, scheduled to be completed in 2028

Period of the Mapei

intervention: 2016-2018

Intervention by Mapei:

supplying products for substrate preparation, waterproofing surfaces in tanks and terraces, chemical anchoring, installing and

grouting ceramic tiles, sealing joints, coating walls

Design: Nordic Office-Grimshaw-Haptic Architecture; Pininfarina-Aecom

Client: IGA-Istanbul Great Airport

Works direction: Horizontal

Main contractor: CMLKK JV – Cengiz Mapa Limak Kolin Kalyon Joint Venture

Installation company: Umut Yalitim

Mapei distributors: Umut, Himerpa, Pelenkoğlu

Mapei coordinator: Emrah Karatas, Mapei Yapı Kimyasallar A.S (Turkey)

MAPEI PRODUCTS

Preparing substrates: Primer SN, Primer 3296

Sealing joints and anchoring:

Mapeflex PU 40, Mapefix VE SF

Installing and grouting ceramic

tiles: Elastorapid, Keracolor FF

Waterproofing substrates:

Mapelastik Foundation, Mapelastik, Mapeproof Swell, Purtop 400 M, Aquaflex Roof Premium
Coatings: Mapecoat I 24, Mapecoat DW 25, Mapecoat I 600 W
Finishing floors: Mapefloor Finish 55

For further information on products see www.mapei.com