



## Milan (Italy) LINATE AIRPORT

25 KILOMETRES OF JOINTS SEALED IN THE CONCRETE ROAD SURFACE  
IN THE PARKING AND TAXIING AREAS USED BY THE PLANES

Milan Linate Airport has been up and running again since 26<sup>th</sup> October this year after exactly three months of work. Two weeks previously, more than 150,000 spectators had watched in awe at the exciting display put on by the Freccie Tricolori airplanes at the "Milano Linate Air Show", with their acrobatics making the air-show dedicated to the world of flying and aerobatics even more special.

The Milanese airport closed on 27<sup>th</sup> July so that work could be carried out on the 2.4 km long, 60 m wide runway used for landing and take-off and on the taxiing

lanes, in compliance with current norms and standards that require maintenance work to be carried out every 15/20 years. The runway and lanes were completely resurfaced down to a depth of 60 cm and the existing concrete buffer-ends were rebuilt. This type of work, which involved using the most innovative Mapei product systems including those for sealing joints, can only be carried out in the summer because, when work is carried out on runways, the weather needs to be stable and calm and a hot climate is required to get the best results.

Work on restyling the departure gates

started at the same time, and this will continue until 2021.

In the meantime, the system that handles the passengers' luggage has been revamped by installing four new BHS (Baggage Handling System), that is, the equipment that manages the movement of baggage and prepares it before it is loaded on the planes. The new systems are of the latest generation and, apart from checking and controlling baggage much more accurately, they also increase the level of safety and reduce the time required for the baggage to be checked and sorted.



### **A GUARANTEE OF A PERFECT SEAL IN CONCRETE**

Mapei engineers were on site during both the design phase and the execution phase and were involved mainly in repairing the existing seals in the slabs of concrete in the parking areas used by the planes and in the areas where they join the new take-off and landing runways.

The first step was to thoroughly clean the old surfaces, a total length of 25,000 m, using both hand tools and grinders in order to remove the hardened, solidified bituminous mass that had lost all its elastic properties from inside the joints. The joints that still had traces of bitumen along the edges were then treated with PRIMER SN, two-component, fillerized epoxy primer and adhesion promoter.

The old joints that had clean edges with no traces of bitumen, on the other hand, were treated with PRIMER M, one-component, solvent-free primer for polyurethane sealants for compact, absorbent

surfaces.

Before applying the new sealant, to ensure the correct size and depth of the joints and prevent it sticking to the bottom of the joints, MAPEFOAM closed-cell, compressible, polyethylene foam cord was placed along the bottom of the joints.

It was only at this point that the new sealant was applied in the joints by hand and using MAPEFLEX SPP electric guns. The sealant chosen was MAPEFLEX PU50 SL fluid, polyurethane sealant which has been specifically formulated for sealing structural expansion and distribution joints in industrial concrete floors, including those subject to intense traffic such as runways and parking bays in airports.

It has a fluid consistency so that it may be applied quickly and, thanks to its quick-hardening properties (around 2 mm every 24 hours), joints may be put into service very quickly, resulting in various economic benefits.

### **INSTALLATION OF NEW CERAMIC TILES**

Reliable products of the latest generation were used to install large format ceramic tiles in the fifteen bathrooms in the departure gates area. ULTRALITE S2 adhesive was used to bond 240 x 120 cm tiles, a product that has been specifically developed to install large format tiles in complete safety. This product is highly deformable, has good trowellability and, thanks to its special formulation developed in the Mapei Research & Development laboratories, it guarantees particularly high yield and good buttering capacity, ensuring that any type or format of tile adheres perfectly.

KERAPOXY was used to grout the tile joints, a two-component, acid-resistant epoxy adhesive and grout for joints of at least 3 mm.

The recent reopening of Linate Airport doesn't mean that all the work has been completed. Some of the sites will remain open until the middle of 2021 and the



**IN THE SPOTLIGHT**  
**MAPEFLEX PU50 SL**

It is a one-component, ready-to-use, easy-to-apply polyurethane-based sealant with a low modulus of elasticity, specially formulated for sealing structural expansion and distribution joints in internal and external horizontal surfaces subject to movement of  $\pm 25\%$  of their original size.

MAPEFLEX PU50 SL is highly resistant to atmospheric agents and is also resistant to occasional chemical attack by hydrocarbon-derived products, such as benzene, kerosene and diesel fuel. It may only be used on horizontal surfaces or surfaces with a maximum slope of 2%.



presentation of a completely new airport for the city of Milan.

In the meantime Mapei experts will continue to be present on site to help in the construction of a completely revamped, welcoming and functional infrastructure – with particular attention on design and spatial harmony – which will be able to optimise the flow of passengers and offer them a complete, comfortable and ef-

fortless travel experience. Once work has been completed the New Linate airport – which by 2023 will be connected to the centre of the city via the M4 line of the Milan metro rail network – will be an airport designed to put passengers at their ease, with a new range of shops more focused on the business traveller, along with all the services you would expect in any city airport at a European level.

**ABOVE.** MAPEFLEX PU50 SL was used to seal the joints in the concrete surfaces.

**BELOW.** Ceramic tiles were installed in the bathrooms with ULTRALITE S2.



**TECHNICAL DATA**

**Milan Linate Airport,** Milan (Italy)

**Period of construction:** 1933-1937

**Original design:** Gianluigi Giordani

**Period of the intervention:** 2019

**Intervention by Mapei:** supplying products for sealing

joints and installing ceramic tiles

**Client:** S.E.A. SpA

**Design:** Nicola Montemurro

**Works directors:** Marco Andreula (sealing joints), Gabriella Tomasini (installation of ceramics)

**Contractors:** ATI imprese Vitali Spa and Artifoni SpA (sealing joints), Ar.Co Lavori Consorzio Montagna Costruzioni (installing

ceramic tiles)

**Subcontractors:** Bacchi Srl (for sealing joints), Montagna Costruzioni, Franco Tripodi (installing ceramic tiles)

**Mapei coordinators:** Fabio Guerrini, Ivan Ceriani and Andrea Serafin, Mapei SpA (Italy)

**MAPEI PRODUCTS**

Sealing joints in concrete surfaces: Primer M, Primer SN, Mapefoam, Mapeflex PU50 SL

Installing ceramic tiles:

Ultralite S2

Grouting tile joints: Kerapoxy

For further information on products visit [mapei.com](http://mapei.com)