



## Rho (Milan, Italy)

# NEW COLOURED AND INSULATED FAÇADES

THE FAÇADES OF FOUR RESIDENTIAL BUILDINGS BUILT IN THE 1970'S HAVE UNDERGONE AN EXTENSIVE REFURBISHMENT

Situated to the north-west of the metropolitan city of Milan, Rho is considered to be an area of great interest from a real-estate point of view thanks to it being the locality of an important exhibition centre.

Made up of four towers built in the 1970's, a residential complex in this area was badly in need of extensive refurbishment work on all the façades and of an upgrade of its energy performance characteristics. Mapei contributed to this intervention by supplying products for concrete repair, thermal insulation and the renovation of the façades.

### Refurbishment of the façades

External thermal insulation system. To carry out the work on the ceiling of the pilotis floor (total surface area 7,000 m<sup>2</sup>), the system recommended was MAPETHERM thermal insulation system.

The first step was to get rid of all the old render that was no longer attached firmly to the substrate using power tools and by hydro-blasting to create a substrate that was clean and strong. The render was then re-integrated with NIVOPLAN levelling mortar admixed with PLANICRETE synthetic rubber latex to improve its mechanical and adhesive characteristics.

Once the substrate had been cured, insulating panels were bonded in place with MAPETHERM AR1 GG, a highly thixotropic, cementitious mortar. An even layer of the product was applied over the entire surface of the insulating panels with a notched trowel, apart from a 2 cm area around the perimeter of the panels to prevent the adhesive seeping into the joints and creating a thermal bridge. Around 24 hours after bonding the panels in place, the surfaces were skimmed with two even layers, around 4 to 5 mm thick, of MAPETHERM AR1 LIGHT one-component, lightweight cementitious mortar.

MAPETHERM NET alkali-resistant, glass fibre mesh was placed over the first layer of mortar while it was still wet and then the second layer of mortar was applied to completely embed the mesh.

After a few days, once the mortar was completely dry, the surfaces were finished off by firstly applying QUARZOLITE BASE COAT, a coloured acrylic undercoat and adhesion promoter which evens out surfaces and fills defects. The next step was to ap-

### Problems and solutions

The aim of the refurbishment work on the complex was to partially improve the energy performance of the pilotis floor to qualify for tax incentives. Also, the paintwork and protective coating for the brickwork had to have high performances and a very long service life. The use of MAPETHERM TILE SYSTEM and QUARZOLITE PAINT ensured a perfect result.



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**ABOVE.** A view of the residential complex after completion of the works.

1. After repairing the concrete, the surfaces were painted with ELASTOCOLOR PAINT.
2. ANTIPLUVIOL W impregnator was applied to protect the brickwork.



3. The MAPETHERM external thermal insulation system was recommended for the pilotis floor.

film which is impermeable to water and aggressive agents in the atmosphere while remaining permeable to vapour and gives structures a highly attractive finish.

Protection of the brickwork. Once work had been completed, ANTIPLUVIOL W colourless, silane and siloxane-based, water-repellent impregnator in watery emulsion was applied to protect the brickwork. The first step was to clean the brickwork by hydro-blasting to remove all the dirt, dust and grease.

ANTIPLUVIOL W penetrates deep down into substrates and provides protection against the effects of driving rain. It also helps to improve the durability and resistance of the walls over the years.

ply QUARZOLITE PAINT. Made up of acrylic resin in water dispersion and super-fine quartz, this product protects surfaces from environmental aggression and forms a very attractive, even surface with a slightly rough finish.

Repairs to the reinforced concrete elements. This part of the work was carried out on the parapets of the terraces and on the beams and pillars of the buildings. The first step was to prepare the substrates of the areas to be repaired by getting rid of the portions of finish and concrete that were no longer anchored firmly to the substrate using power tools and by hydro-blasting. The reinforcing rods left exposed were carefully cleaned to get rid of any traces of rust and treated with MAPEFER 1K, a one-component cementitious mortar with anti-rust properties. The areas of concrete removed previously were

then integrated with MAPEGROUT sulphate-resistant, fibre-reinforced, shrinkage-compensated thixotropic mortar.

To integrate the areas where the render had been removed and to level off the surface of the substrate, a layer of PLANITOP FAST 330 quick-setting, fibre-reinforced cementitious mortar was applied. Then, all the surfaces of the façades were skimmed over with PLANITOP 217 water-repellent, cementitious skimming mortar, which was reinforced with MAPENET 150 mesh. Once this layer was cured, the substrate was initially treated with MALECH acrylic water-based primer, which is used to regulate the absorption of substrates and as an adhesion promoter for coats of paint to be applied later.

The concrete surfaces were then painted with ELASTOCOLOR PAINT which, once dry, forms an elastic

#### ANTIPLUVIOL W

Colourless, silane and siloxane-based water-repellent impregnator in watery emulsion.

FIND OUT MORE



#### TECHNICAL DATA

**Residential complex,** Rho (Milan, Italy)

**Period of construction:** 1970s

**Period of the intervention:** 2017-2019

**Intervention by Mapei:** supplying products for repairing concrete, thermally insulating walls,

finishing and coloring the façades and parapets

**Design:** Colombini, Studio Pemdat

**Works direction:** Studio Pemdat

**Main contractor:** Icre srl

**Mapei coordinators:** Andrea Serafin, Andrea Peli, Fabio Bergamaschi, Alessio Risso, Mapei SpA (Italy)

#### MAPEI PRODUCTS

Building and repairing concrete substrates:

Malech, Mapefer 1K, Mapegrouth Thixotropic, Nivoplan, Planicrete, Planitop 217, Planitop Fast 330

Thermal insulation:

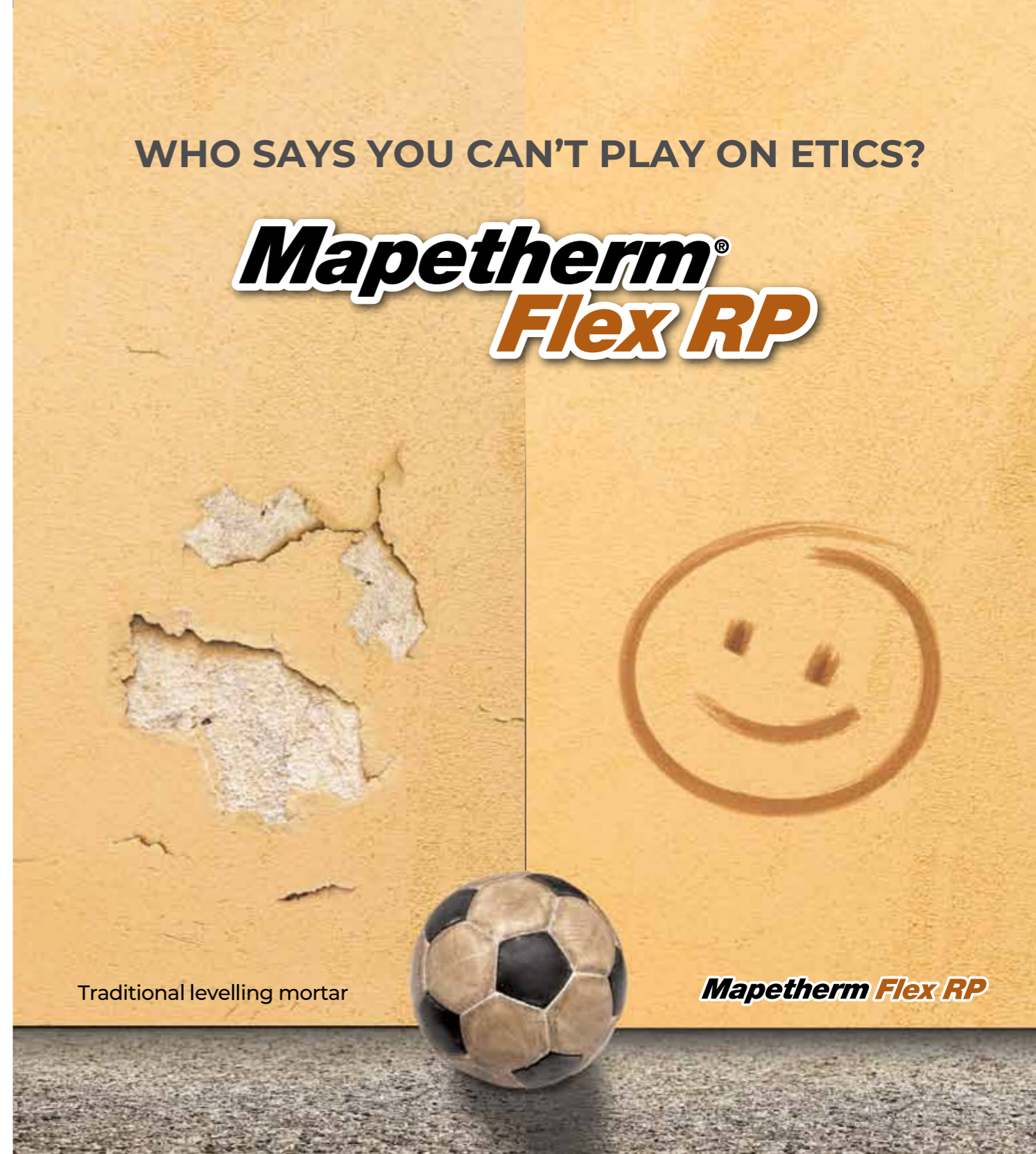
Mapenet 150, Mapetherm AR1 Light,

Mapetherm AR1 GG  
Wall coatings: Antipluvial W, Elastocolor, Quarzolute Base Coat, Quarzolute Paint

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