PALAZZO REALE

New terracotta tile and parquet floors were installed in one of the most emblematic buildings in Milan

Located in the south side of Piazza Duomo, the Palazzo Reale was the centre of Milan's political power since the late Middle Age, the seat of the Old Town Hall and the residence of Torriani, Visconti and Sforza noble families. It also hosted members of royal houses such as Maria Theresa of Austria, Napoleon and the Savoia family**.** The building was extended and transformed several times during its 9-hundred-year history, but its today's outside appearance is mostly due to Giuseppe Piermarini's architectural work at the end of the 18th century. As mentioned previously, the Palace was chosen by Mapei to welcome many guests on the night of 15th February, after the show at the Teatro alla Scala. This is not the first time Mapei has been involved with Palazzo Reale. The Company can already boast having contributed to preserving and repairing this important building's artistic and architectural heritage. Once again, art and labour are tied together inseparably.

Installation of the Highest Standard

Back in 2005 Mapei took part in the building work to adapt some of the premises on the second floor of the building to a new purpose, as various Company products were used to install a parquet floor in the rooms designed to hold a museum.

A light-weight substrate was first cast over the old steel sheeting slab. Polythene sheets, carefully overlapped and bonded with one another, were then spread over the surfaces creating a floating screed made of TOPCEM PRONTO* ready-to-use, pre-blended, normal-setting mortar incorporating an electro-welded mesh. Before laying the wooden floor, PRIMER MF* two-component epoxy primer was applied to the substrate to waterproof it.

The parquet flooring was then bonded down using light-coloured ULTRABOND P902 2K* two-component epoxy-polyurethane adhesive.

More building work was carried out between the end of 2006 and the start of 2007, divided into several different jobs. The work involved the building's various interiors and also included the installation of new wood and brick floors. Before laying new floors in the various premises, structural strengthening had to first be carried out, placing an electro-welded mesh over the old steel sheeting substrate. The concrete was made of STABILCEM* very fluid expanding cementitious binder mixed with sand.

The installation of the new wooden flooring (hard oak boards) in the other interiors, such as the conference halls


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Photos 1, 2 and 3.
The Tuscan terracotta tile floors were bonded with Keraflex Maxi .

Photos 4, 5 and 6.
The wooden floors were installed using Ultrabond P902 2K .

Photo 7.
Detail of the floors after the works were completed.

and some second-floor rooms with frescoed walls over in the west wing, was preceded by work to repair and restore the old sand and cement substrates. Tests carried out using a carbide hygrometer revealed plenty of residual damp in the screed, so PRIMER MF* two-component epoxy primer was used, because it is ideal for waterproofing and consolidating substrates. The first layer of the product was diluted with PRIMER KL* diluent for PRIMER MF*, in order to reduce its viscosity and hence its ability to penetrate into the porous screed. After preparing the substrates in this way, installation work was ready to be carried out 48 hours later. The parquet flooring was bonded using ULTRABOND P902 2K* two-component epoxy-polyurethane adhesive.
A floor made of Tuscan terracotta tiles was installed in the offices of the Fine Arts Commission on the first floor, after first carrying out strengthening work using STABILCEM*. Before carrying out this work, ULTRAPLAN MAXI* smoothing compound was first applied to level out and smooth over any unevenness in the substrate. The terracotta tiles, measuring 20x40 cm, were bonded in place using KERAFLEX MAXI* high performance deformable (class S1 according to the European standard EN 12002) cementitious adhesive with no vertical slip and extended open time. Thanks to the high thickness allowed by this product, it was possible to compensate between the difference in thickness of the various brick tiles. The joints were grouted using a mixture of lime (3.25), white cement and terracotta tile dust obtained by crushing some of the tiles into tiny fragments. This procedure made it possible to create a grout featuring the same colour as the tiles, ensuring that the final surface sported uniformity of colour.
The porcelain tiles in the bathrooms, measuring 30x30 cm, were also laid using KERAFLEX MAXI* adhesive.

***Mapei Products:** the products referred to in this article belong to the "Products for Ceramic Tiles and Stone Materials", "Products for the Installation of Resilient, Textile and Wood Floor and Wall Coverings" and "Building Speciality Line" ranges. The technical data sheets are available on the "Mapei Global Infonet" CD/DVD or at the web site: www.mapei.com.*
Mapei's adhesives and grouts conform to EN 12004 and EN 13888 standards.
***Keraflex Maxi (C2TE):** high performance, deformable, cementitious adhesive, with no vertical slip and extended open time and deformable for ceramic tiles and stone material: particularly suitable for the installation of large sized porcelain tiles and stone material (thickness of adhesive from 3 to 15 mm).*
***Mapecem:** special fast setting hydraulic binder for the preparation of fast-drying screeds (24 hours) with controlled shrinkage.*
***Primer KL:** adhesion promoter on non porous-surfaces for epoxy surfaces and diluent for Primer MF.*
***Primer MF:** solvent-free two-component epoxy primer to be used as an adhesion promoter for products of the Mapefloor range and to consolidate and waterproof cementitious substrates.*
***Stabilcem:** very fluid expanding cementitious binder for the preparation of injection slurries, mortars and concrete.*
***Topcem Pronto:** ready-to-use, pre-packed, normal-setting mortar with controlled shrinkage for fast-drying screeds (4 days).*
***Ultrabond P902 2K:** two-component epoxy-polyurethane adhesive for wooden flooring.*
***Ultraplan Maxi:** ultra-fast hardening self-levelling smoothing compound for thicknesses from 3 to 30 mm.*

TECHNICAL DATA

Palazzo Reale, Milan (Italy)
1st work stage:
Work: laying parquet floorings
Year: 2005
Customer: Milan City Council, Milan
Contractor: Cotea, Rome
Parquet Installation Company: Woodline (Concorezzo, Italy)
Mapei Distributor: Bema (Milan)
Mapei Co-ordinator: Massimiliano Nicastro
2nd work stage:
Work: structural strengthening, laying wooden and terracotta tile floorings
Years: 2006-2007
Customer: Milan City Council
Contractor: Cotea
Parquet Installation Company: Woodline
Mapei Distributor: Bema
Mapei Co-ordinators: Angelo Giangiulio, Massimiliano Nicastro, Andrea Peli