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A perfect collaboration

A new Magna Steyr plant has been completed near Graz.

There emerges in Lannach, in the Austrian region of Stiria, a new plant of the Magna Steyr Group that marks another step in the collaboration with the well-known carmaker Daimler Chrysler. This site, in which some components will be produced for the Daimler Chrysler automobiles, goes alongside numerous other production centres and centres for research and development belonging to the group and present in Austria. Here the works realized with Mapei products were performed in 2002 and concerned the substrate and floor coverings of the offices and the communal rooms. A Mapei engineer followed the progress of the works, together with the principal of the installation firm Wolfgang Wegl, with whom he elaborated a suitable intervention programme.

Photo 1. The new site of the Magna Steyr Group in Lannach.

Photo 2. Sophisticated architectural solutions for the interior.

Photo 3. Application of primer Primer G with roller.

Photo 4. Levelling of the gaps and of the deeper joints with Nivorapid FF.

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Photo 5. Application of Ultraplan levelling compound with a Putzmeister pump.

Photo 6. Smoothing of Ultraplan with a double-rubber squeegee for large surface areas.

Photo 7. Upon completion, the surface proves to be perfectly smooth.

The interventions required

The substrate of concrete slabs had – mainly in the joints – considerable gaps up to a centimetre in height, with a "corrugated iron" effect. In order to proceed to the subsequent bonding of the covering, therefore, it was necessary to level the entire surface area. Before starting the works, the installation firm performed an estimate of the residual moisture, present in the substrate, which was calculated with the gravimetric dry residue method.

Preparation of the substrate

The examination of the gaps was performed, in conformity with the Austrian regulation ÖNORM B2232, by means of graduated rod and wedge. To obtain a surface suitable for the anchoring, the entire substrate in concrete was mechanically cleaned in order to eliminate every factor capable of reducing the adhesion. Next, the residue due to the abrasive action was vacuumed up, and the substrate was then primed with PRIMER G*, diluted in water 1:2, in order to thus guarantee an excellent adhesion of the levelling compound to the substrate. The deeper joints and the uneven surfaces were levelled with NIVORAPID FF*, a fast-hardening thixotropic levelling compound. With a single coat it was thus possible to


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Photo 8. View of the flooring of the offices covered in linoleum.

eliminate even the gaps of 1 cm. In some areas, in the presence of particularly pronounced depressions, it was necessary to finish the substrate with a second coat of NIVORAPID FF*, applied on the previous coat while it was still damp. Due to the thickness of the levelling layer, a separation joint was placed in correspondence with the walls.

Application of ULTRAPLAN smoothing compound

To obtain a more rapid and functional process, ULTRAPLAN* smoothing compound was applied with the "Putzmeister SS EV TM 100" pump equipped with a pre-blender, which allowed for the attainment of an excellent result after a quick adjustment. The smoothing process was performed with a double-rubber squeegee for large surface areas, paying particular attention so that the material was applied in crossed coats. As the last intervention, the final step was to de-aerate the surfaces with a spiked roller. The result fully satisfied both the contracting firm as well as the Mapei engineer: already at first glance the substrate proved to be perfect, prepared to a fine art.

Bonding of the linoleum

The flooring was covered with 5,300 m^2 of Linoson, a linoleum of the Inku firm. In conformity with the Austrian regulation ÖNORM B 2236-1 "Bonding of floor coverings", the choice of the adhesive rests with the contractor taking into account the covering to be bonded. The rolls of linoleum and the adhesive were kept for 24 hours in the environment to be covered so that they could become acclimatized.
The adhesive AQUACOL T*, chosen for this installation, was applied with the n. 2 notched trowel, and the flooring was immediately installed on the fresh adhesive. The excellent characteristics of the product, such as the quickness of the setting and its good adhesiveness, were capable of guaranteeing a perfect installation.
To prevent the lifting of the edges, the individual rolls of linoleum were always placed leaving between them a joint as wide as a sheet of paper. About 35-45 minutes after the installation a spiked roller was passed to massage the surface and thus prevent the formation of air bubbles and craters. The sealing of the joints was performed with the appropriate cordon after 48 hours.
The advantages that Mapei was able to offer in presenting a global solution, in terms of range of products and technical solutions, in this construction site prove to be evident. Both for the contracting firm as well as for the installation firm the result obtained represented a source of excellent references: the covering proved, in fact, to be bubble-free and perfectly bonded over the entire surface area. It was not necessary, moreover, to resort to subsequent and costly finishes.
In this plant, which Mapei helped to realize thanks to its perfect collaboration with the Wegl installation firm, we hope many novelties come to light for the upcoming generations of automobiles.

**The products cited in this article belong to the "Products for the Installation of Resilient, Textile and Wood Floor and Wall Coverings" line. The relative technical data sheets are available on the "Mapei Global Infonet" CD and on the website "www.mapei.com".*

Aquacol T: *adhesive in water dispersion with very low emission of volatile organic compounds (VOC) for textile floor and wall coverings.*
Nivorapid FF: *ultra-fast drying (4-6 hours) thixotropic cementitious levelling mortar for horizontal or vertical surfaces for thicknesses from 1 to 20 mm.*
Primer G: *synthetic resin-based primer in water dispersion with very low emission of volatile organic compounds (VOC).*
Ultraplan: *ultra-fast hardening (12 hours) self-levelling smoothing compound for thicknesses from 1 to 10 mm.*

TECHNICAL DATA

Plant of the Magna Steyr Group, Lannach (Graz), Austria
Project: levelling of the substrates and installation of the floor covering in the offices
Year of project: start of works, 2001; end of works: May 2002
Customer: Magna Lieganschaftsverwaltung Gmbh (Magna Group)
Design and construction supervision: Arge Burogebaude Lannach
Project manager: Eng. Kordon
Installation firm: Wegl Wolfgang Gmbh, Graz
Material installed: 5,300 m^2 of Inku linoleum
Mapei Products: PRIMER G, NIVORAPID FF, ULTRAPLAN, AQUACOL T
Mapei Retailer: Wegl Wolfgang
Mapei coordinators: Alois Beiler, Helmut Schweda, Josef Zimmermann and Rudolf Scholz, Mapei GmbH