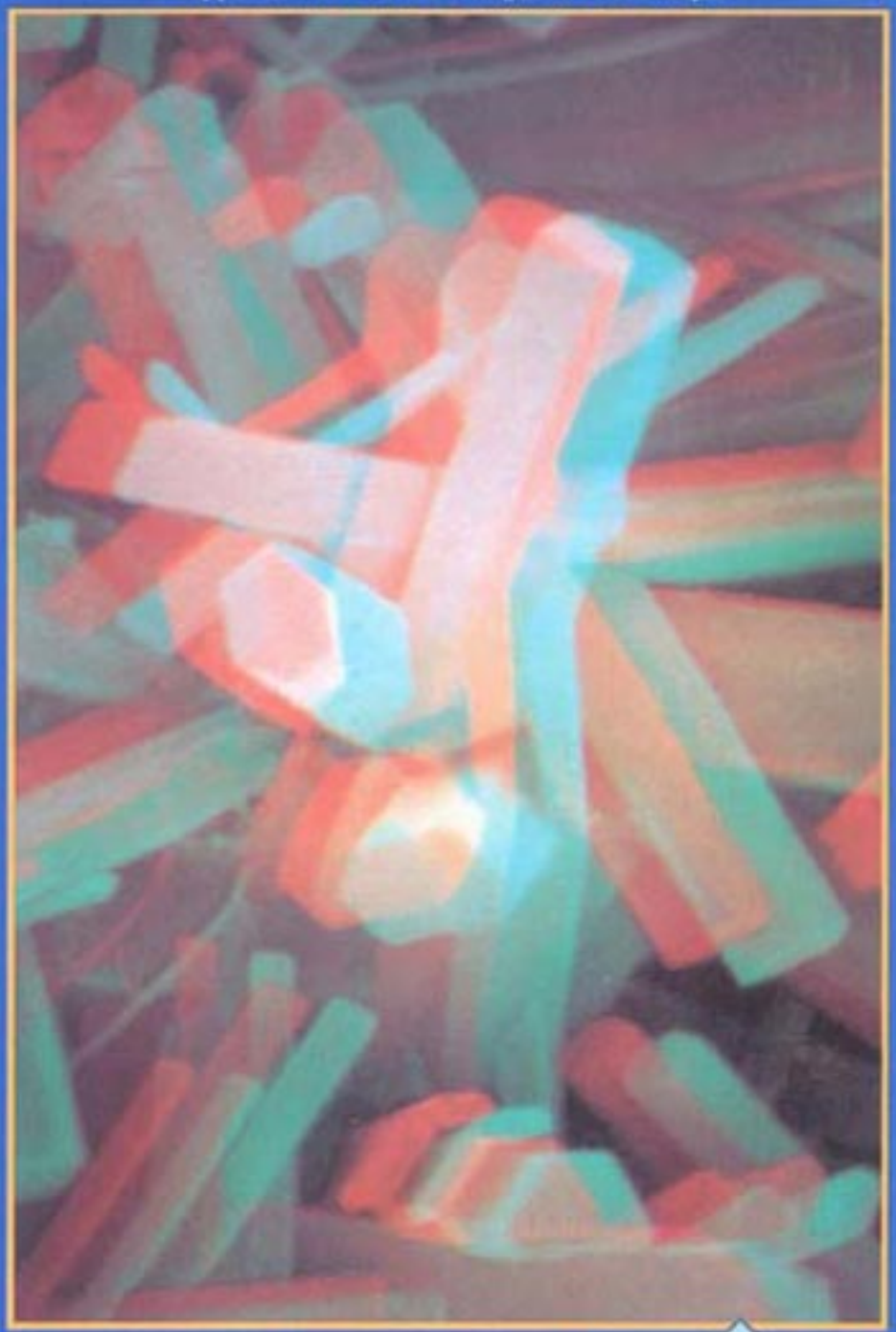
INTERNATIONAL

REALTÁ MAPEI

Supplemento al n. 21 di Realtà Mapei
Supplement to n. 21 of the magazine Realtà Mapei



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MAPEI GB

Dear Readers,
"Realtà Mapei" started being published four years ago and it has now reached its twentieth issue. It can proudly be considered as a real specialized magazine in the field of chemistry for the building industry and not just as a company's newsletter. Its bimonthly publication allows to deal with thoroughly examined, wide-ranging technical subjects, with current events like trade exhibitions and various markets, "curiosities" in the building field worldwide.

Furthermore the number of its readership increased from 5000 to 67.000 for the last issue. This is a figure that can be envied by many technical magazines in the field! Let's now consider the quality of its readers. First of all the more than 10,000 Mapei customers, who find in it information about the relationships with the products' manufacturers, in order to make their business more profitable and qualified. Let's also take into consideration the specific world of almost 25.000 technicians and installers of our products. This is such an important field because we rely on them and on their expertise for the use of our products, which are the result of a thorough laboratory research and of a long experimentation on the construction sites, but that also depends on the handcraft skill and on the specific competence of the users.

Finally let's talk about the world of the planners and designers, who are always requested to choose responsibly also the installation products in compliance with the products' specifications. Therefore they also need to have a deeper knowledge of our products, of their technical characteristics and of their performances.

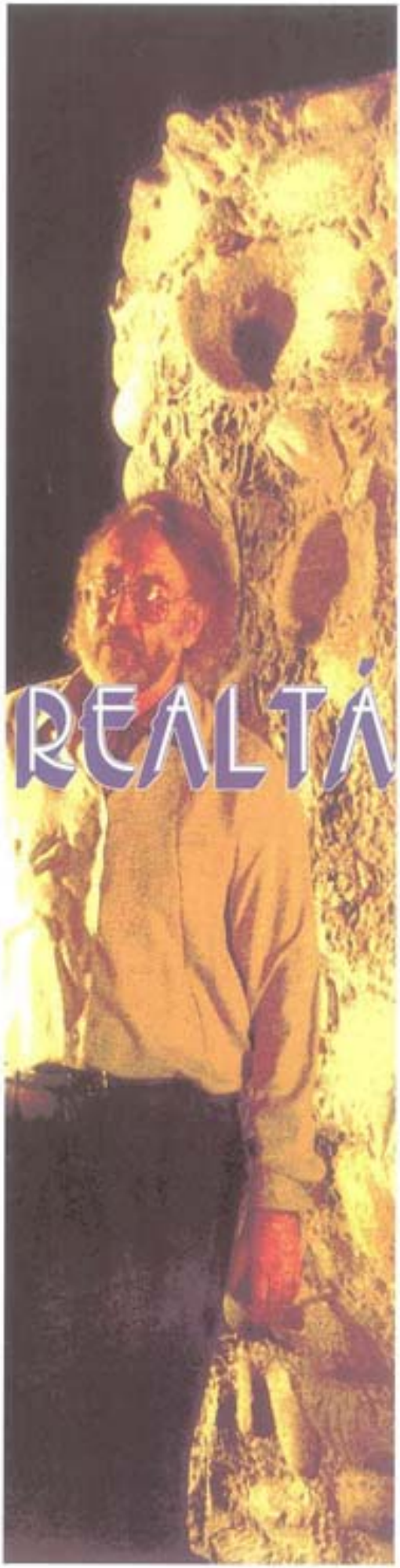
"Realtà Mapei" has become a "mature" magazine to such an extent that we have decided to fulfil the so many requests received from all over the world, either directly to our editorial office or through our subsidiaries, to publish an international version that can be better understood by a larger and larger public. At the momen, for obvious pratical reasons, three issues in English language are foreseen for 1995. Next year we would also like to introduce versions in other languages according to the market's needs.

The first issue of "Realtà Mapei International" gathers some of the articles previously dealt with in "Realtà Mapei", that therefore have already been glanced through by turning over the pages, if not exactly read by many of you. I wish to draw your attention on the opening article because, as its title says, it's "more than just a memory" and it is dedicated to Rodolfo Squinzi, who suddenly left us a little over ten years ago. He passed away soon after his return from a trip to North America, a continent that he felt to be "close" because he considered it to be the future for an expanding Italian company.

Though he was a self made man, he had international strategies that have been followed and developed during these years. "Realtà Mapei International" couldn't ignore him. I do count on your suggestions and on your contributions of ideas, information and photos, and, why not, of constructive criticism.

Enjoy your reading.

the Editor
Adriana Spazzoli



REALTÀ MAPEI

RODOLFO SQUINZI: MORE THAN JUST A MEMORY

HIS PHILOSOPHY STILL INSPIRES THE COMPANY HE FOUNDED, MAPEI

How do you commemorate a great man without risking sounding banal? It's better to let some old photographs from the family album do the talking. Taking us back in time from the date of his death, November 1, 1984, they illustrate milestones in the life of Rodolfo Squinzi, who in 1937 formed a company called "Materiali Ausiliari Per Edilizia e Industria" (Auxiliary Materials for Construction and Industry) : Mapei.
Those who knew him remember him as a captain of industry, but more importantly as a loyal and generous man much admired at home, on the job and in the sports world. He was responsible for turning a small firm specializing in the production of wall paints into the market leader for adhesives and specialty products for building.
Because of his openness and capacity for innovation, the little shack in the neighborhood on the outskirts of Milan grew to become the headquarters of a company with factories and research laboratories all over the world. There was no facet of Rodolfo Squinzi's life into which he did not pour all of his enthusiasm and affection: his work, his family and even cycling, where he was an up and coming rider.

Some important moments in the life of Rodolfo Squinzi: during his military service with the mountain artillery; in the foreground at left, sprinting in the Bernocchi Cup race; just starting out in business in 1937, and launching production at the Robbiano di Mediglia plant in 1978; finally, in Canada for the inauguration of the new Montreal plant in the summer of 1984

AT AN IMPORTANT CONFERENCE, GIORGIO SQUINZI POINTED OUT THE REASONS FOR MAPEI'S SUCCESS ABROAD: SPECIALIZING IN MATERIALS FOR CONSTRUCTION, INVESTING HEAVILY IN RESEARCH AND DEVELOPMENT, AND ACTIVELY PARTICIPATING IN THE PROCESS OF FORMULATING EUROPEAN AND INTERNATIONAL REGULATORY STANDARDS.

GOING INTERNATIONAL

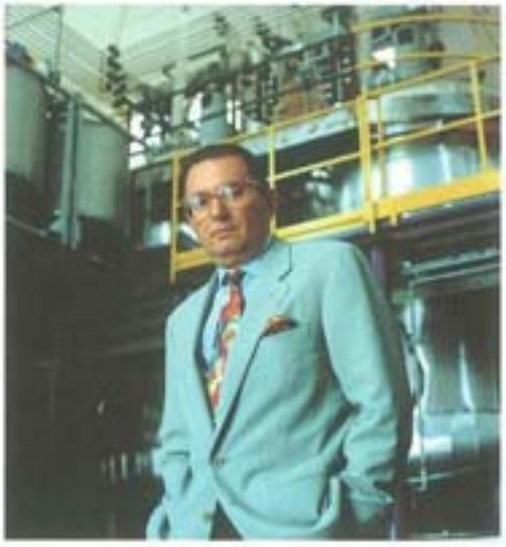
A conference entitled "The Internationalization of Italian Chemical Companies" was held by Federchimica, the Italian Chemical Manufacturers Association, at the Milan Chamber of Commerce some months ago. Those participating included Guido Venturini, General Director of Federchimica, and Vittorio Maglia, Director of the Federchimica Studies Center.
As the President of Federchimica, Benito Benedini explained, "The object of the conference was to discuss the results of studies we conducted and, more importantly, to establish guidelines for a promotion in conjunction with ICE, the Italian Trade Commission, that would increase the presence of Italian chemical companies abroad."
He underlined the importance of the export market for Italian chemical manufacturers, which reached 22,000 billion lire in 1993, or 32% of total sales (in 1990, exports represented only 25%). During the course of the conference various speakers shared some of their own experiences in manufacturing, among whom was Doctor Squinzi, who presented a report on the Mapei Group, as follows.

57 years in business

Mapei is the world leader in the production of adhesives for the installation of floor and wall coverings (ceramic, natural stone, carpet, vinyl, linoleum, parquet, etc.), but has diversified its production to include chemical products for construction (admixtures for concrete) as well as products for building restoration.
A family-owned and managed company founded in 1937, Mapei has grown to become a multi-national with 16 plants, four of which are in Italy and twelve abroad.
In 1994, through the acquisition of the vinyl-acetate resins division of Enichem Synthesis, total sales amounted to 400 billion lire, 195 billion in Italy and 205 billion abroad.

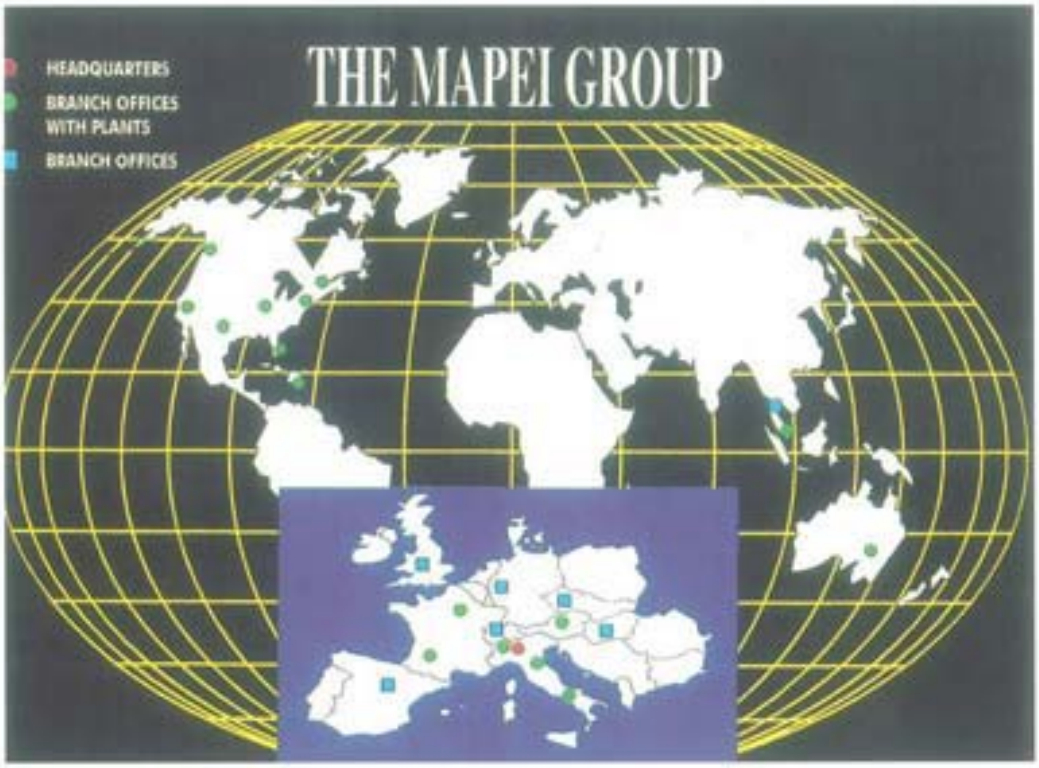
Our key principles

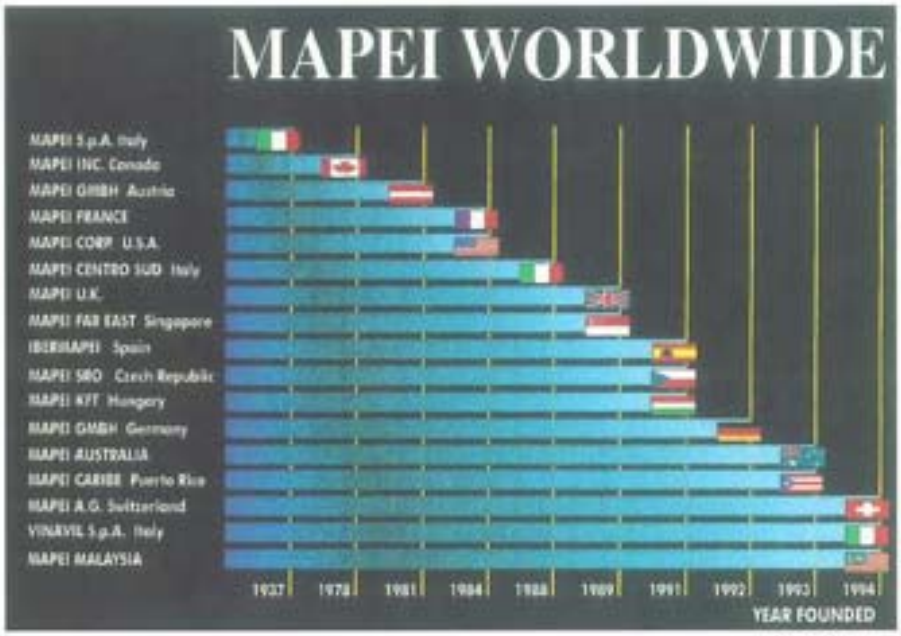
Our philosophy can be summed up in two words: "specialization and internationalization."
Specialization means we have concentrated exclusively on the construction market, initially with products for installing floor coverings. We later expanded our production to include other types of adhesives, sealants and chemical products such as special mortars, waterproofing products and admixtures for concrete.
We have our own specialized niche, which is the only way to survive in a market in which the big cement and chemical groups tend to spread out. "Internationalization" is also a necessary step in this direction, because you can only be really competitive in terms of technology and marketing through the knowledge and experience you've acquired in different markets around the world.
Another fundamental aspect is our commitment to research and development, into which we channel an amount equivalent to 5 per cent of our sales.
We have three laboratories, Milan, our main lab, Montreal, and Chicago, which work closely with the academic world and with other research centers that are involved in the most advanced scientific and technological studies.



Above, Dr. Giorgio Squinzi, Managing Director of the Mapei Group, whose presentation at the Federchimica conference is reported in the accompanying article

Mapei began exporting its production in the early 1960's to neighboring European countries, and in 1978 the Group opened the first of its branches outside Italy. Today seven of these are equipped with their own plants for now 16 plants around the world. The map at right shows Mapei Group locations throughout the world, and the chart below illustrates Mapei's continued expansion in Italy and abroad





The importance of exports

Of Mapei's sales abroad in 1994, 46 billion lire resulted from the sale of products manufactured in Italy, or 15 per cent of the group's sales, and 23 per cent from Italian production. Foreign production totaled 205 billion lire, or 51 per cent of the group's sales, that is 400 billion lire, foreign sales accounted for 63 per cent of the total volume, whereas sales within Italy amounted to 37 per cent. We began exporting in the 1960's to neighboring European countries. Our sales abroad increased steadily and exports represented an ever growing percentage of our total sales. We grew in symbiosis with the phenomenal explosion of Italian ceramic tiles on world markets, a real textbook case of two industries working together. Keep in mind that even today the average unit price for floor covering installation products is less than 500 lire per kilo. Obviously this has determined our strategy for penetrating foreign markets. It also explains why we have to reduce shipping costs to a minimum, and why we have so many plants abroad.

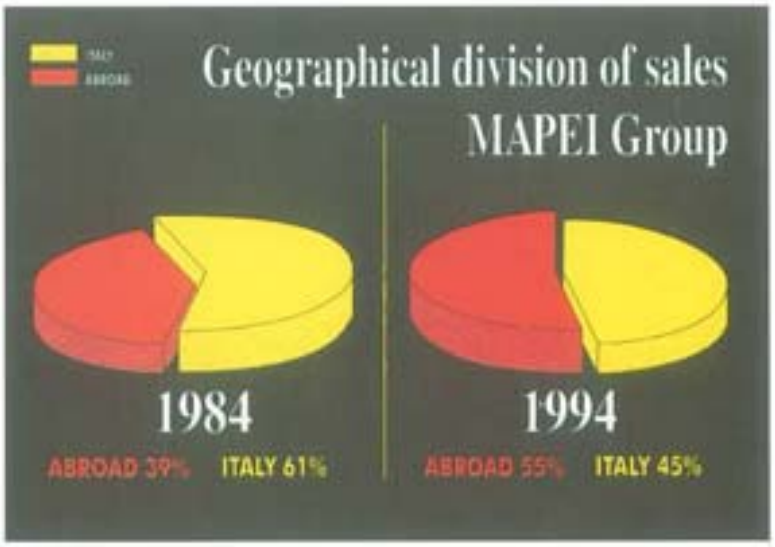
Our presence in foreign markets has developed over time, using a similar strategy for each country. In the first stage we make a market study with local agents, exporting finished products, and often subsidizing shipping costs. If the results are positive, we go to Phase Two in which we open a directly controlled branch office which seeks to capture larger market shares. Phase Three consists in opening one or two plants for the branch. Within Europe we still ship certain finished and semi-finished products from Italy, whereas we ship very few products and only key raw materials overseas. We have plants in the continental USA, Puerto Rico, Canada, Singapore, Australia, France, Spain and Austria, and branch offices in th U.K., Germany, Hungary, and the Czech Republic. We recently opened offices in Switzerland and Malaysia, and we have a network of agents and distributors in more than 80 countries.

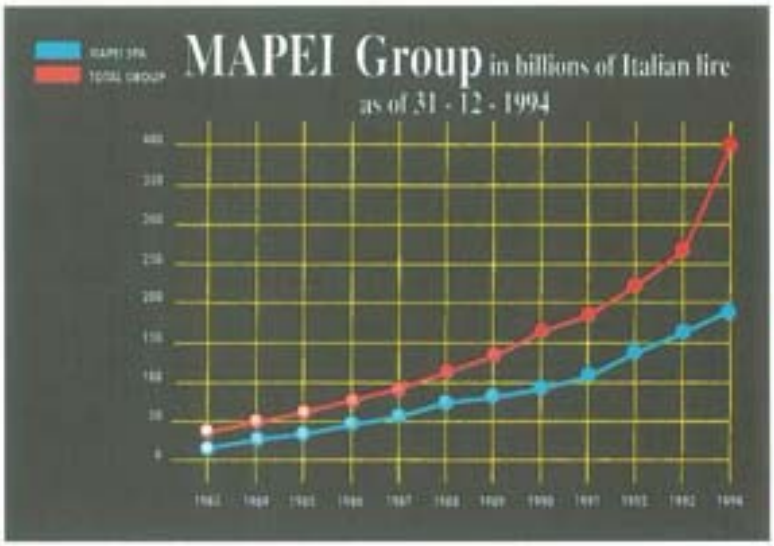
How to go international

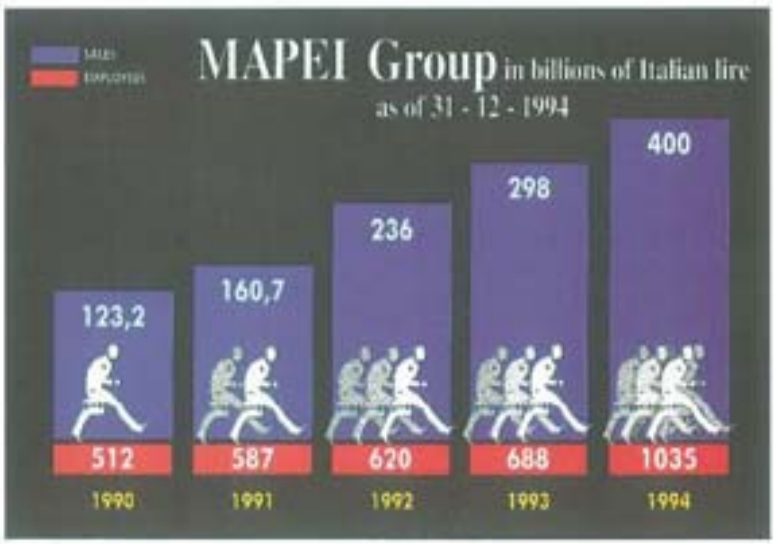
"Internationalizing" is achieved by promoting Mapei products: participating in the most important trade shows in Italy (the three SAIE shows, for example) and around the world, and often taking advantage of the encounters organized by ICE (Italian Export Trade Commission); advertising campaigns in the leading trade magazines; promoting refresher seminars for installers and designers (those organized by ICE and Assopiastrelle in North America and other countries are especially effective).
One very important factor in going international has been our participating very actively in international organizations within our industry (FEICA, Association of European Adhesives Manufacturers, ASC, Adhesive Sealant Council, etc.), and most of all by taking part in the process of formulating European and international standards.
We have Mapei people on the technical committees of ISO (International Standardization Organization), ASTM (American Standards and Texting Methods), UNI (Italian Standardization Organization), UNICHIM (Italian Organization for Standardization in the Ceramical Field) and AFNOR (French Standardization Organization), but the biggest effort, without a doubt, is our work on the European Standardization Committee (CEN), where Mapei has representatives on sixteen different working groups, and presides over two of them: one for defining terminology and testing methods for adhesives in general, and another concerned with adhesives and products for installing ceramic tiles.
These activities have given us better knowledge of various markets and made it possible for us to create a whole series of contacts that are often interesting from a commercial standpoint as well.

Below, the shift in the geographical balance of Mapei Group sales in the last 10 years confirms the effectiveness of the company's international strategy

At the bottom, the graph shows the Mapei Group's growth as a whole compared to that of Mapei S.p.A. (Italy) as a direct result of the "internationalization process"







A GRANITE-PAVED GATEWAY TO THE ROCKIES

The 50.000 square meter Denver International Airport, designed by Fentress-Bradburn and Associates, architects, is a truly spectacular architectural achievement. Above the Great Hall of the terminal a modular tensile roof structure soars forty meters high in 34 white peaks made of special translucent teflon-coated fabric. Below stretches a gleaming polished granite floor that reflects the colors of the Rocky Mountains in the distance.

"Talking" triangles

The architects and airport officials payed particular attention to the flooring, which required a material resistant to the large volume of traffic, yet one which was easy to clean. A triangle motif, whose concave and convex sides recall the curves of the roof, was chosen to draw passengers' attention and guide them gently to their destination. The points of the triangles serve to direct traffic. At the ticket counter area, for example, the triangles point inward toward the counters, whereas at the baggage claim they point outward toward the building's exterior.

A granite mosaic

The granite portion of the terminal floor was paved with five types of granite supplied by Tecnomaiera of Turin: Prairie Black from Zimbabwe, Indian Red Multicolor from India, Prairie Mountain from Texas, Sardo Beige from Sardinia, and Bianco Aurora from Spain. A total of 35,300 square meters of granite were shipped to Denver.

"The legs of each triangle," explained Francis Cox, of Marble Technics of New York, Tecnomaiera Distributor for the United States, "are 1.2 meters. Each piece is 9 mm thick." To make sure that the shades of the stone were in harmony with the Rocky Mountain context of the airport, the architects arranged a test. Before installation, the flooring was set up outside the building to check the changing effects of the light on the stone.

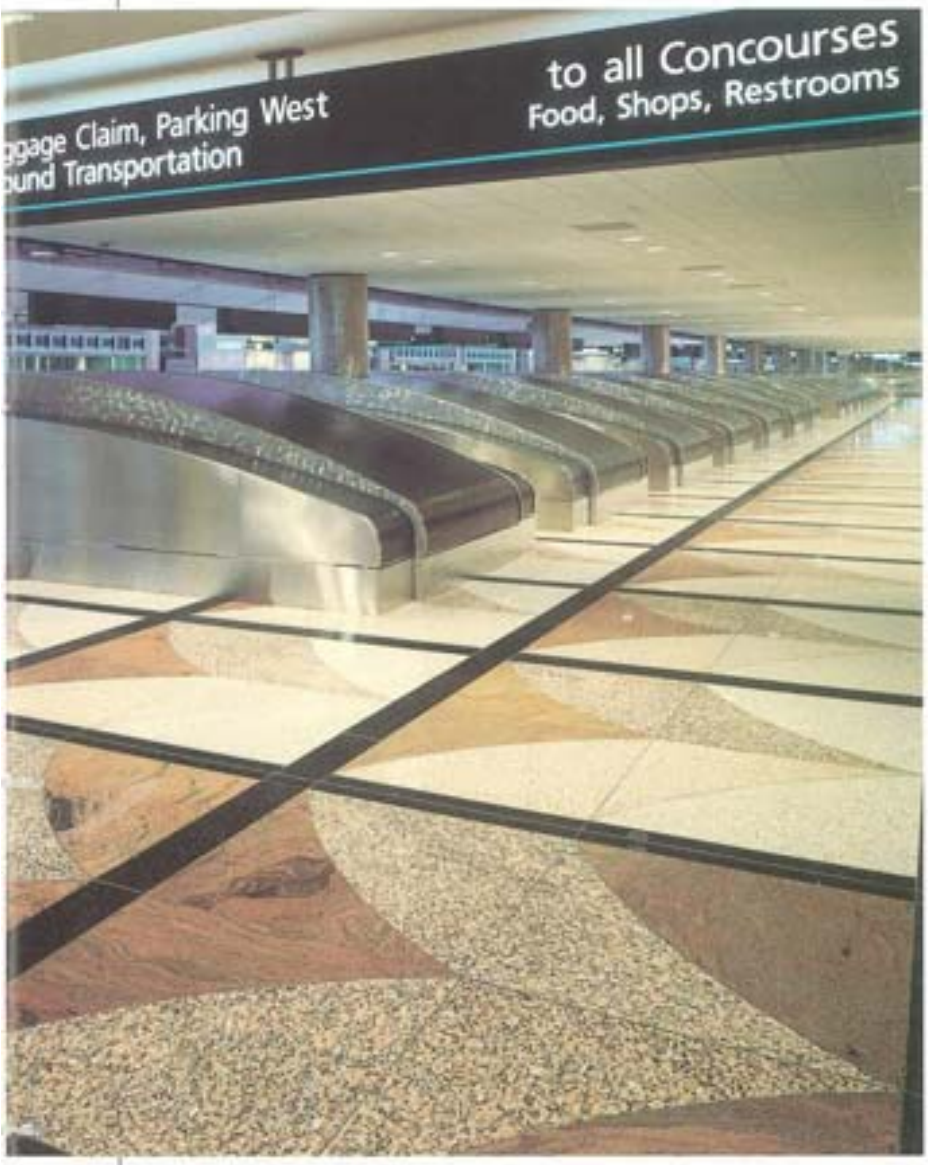
The thinner the better

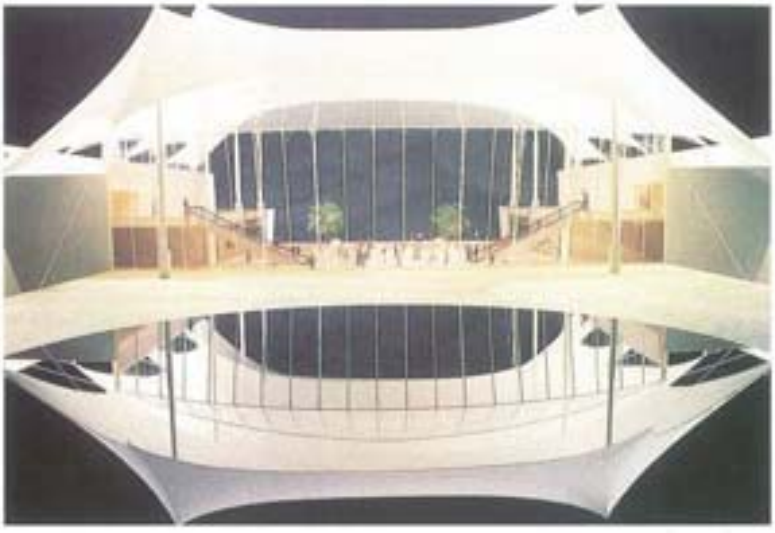
The perfect harmony between the granite and the Colorado landscape convinced both the architects and city officials of the rightness of the choice. Granite had in fact been originally chosen for the project, but terazzo was substituted in the initial planning stage because of cost considerations.
However, the thin (9mm) Tecnomaiera granite proved to be within budget after all. After being reinforced with epoxy resins to reduce porosity, the stone pieces were bonded to fibreglass netting. The reinforcement is very important, especially

In the photo above, the interior of the Great Hall with its precious marble floors installed with Mapei products. A job well (and quickly) done for a success that may be "exported" worldwide

At right, the projects striking central feature, the tensile roof structure with its 34 peaks, forty meters high. It allows light to flood in, yet functions as an insulating element for heating and cooling, and filters the noise of the aircraft outside

The technical data sheets for the products mentioned in this article are contained in Mapei binder No.1 "Setting Materials for Ceramic Tile and Natural Stone"





at the delicate tips of the triangles forming the design. Two types of Colorado marble, Gold Vein Select and Colorado Yule (fabricated by the Colorado Yule Marble Company of Glenwood Springs, Colorado) were used in the areas around the terminal's elevators, where the walls rise to a height of 12 meters on each of its four floors. The Gold Vein Select features golden spider veining, while the Colorado Yule is veined with gold and grey, reflecting the colors of the surrounding landscape."The polished granite wall panels," explained Todd Robertson of Colorado Yule, "measure 1.2 x 1.8 m x 2 cm and were fabricated by New Mexico Travertine of Belen, New Mexico. The panels were installed by All State Stone Systems of New York."

Speed and precision

Installing such an intricate design, formed of a grid of four concave and four convex triangles, required great care and precision.
The pieces were set by Heuler Tile of Wauwatosa, Wisconsin. The setting material used was MAPECEM, a special hydraulic binder for preparing fast-drying (24 hours) screeds without shrinkage. To improve resistance and bonding, Mapei's KERALASTIC (called PLANICRETE W in the USA and Canada) was used, a two-component polyurethane adhesive.

Mapecem

*Keralastic/Planicrete W**

Ultracolor

** in North America*

Left page,the purposely realized thin slabs (9 mm) required a laying system with suitable products, capable of drying up quickly and of rapidly developing a perfect adhesion

Above, a detail of the floor

"MAPECEM was chosen," explained Craig Hamilton, technical assistance director of Mapei Corp (USA) "because MAPECEM screeds set in a very short time. KERALASTIC/PLANICRETE W was used because of its compatibility with MAPECEM and because it guaranteed strong bonding to the Tecnomaiera pieces." During the installation, a quality control consultant from CT Geotek of Denver conducted several tests in various locations to check the outcome of this setting method.
Because of the Mapei Rapid Setting System, ten installers working on the job, assisted by five technicians, were able to set 370 square meters of granite a day.

The right grout for the job

Grouting the thin granite triangles with their sharp points was a challenge. Tecnomaiera's special lash clip, shaped like a boat anchor, was a great help in setting the thin stone. ULTRACOLOR grout was used because it dries rapidly, has high compressive strength and is completely free of efflorescences.

A floor well-travelled

The flooring's enormous success made everyone happy: budgetary considerations were respected because of the reduced cost of transporting the thin granite, and the project was completed quickly and safely.
The architects were also pleased to have won the international competition for the 464,500 square meter airport in Seoul, Korea. The preliminary designs call for granite floors, and all the concerns which took part in the Denver Aiport project have shown strong interest in exporting their success to the Far East.

We thank Stone World and L'Arca magazines from which this article was adapted.

TECHNICAL DATA

PROJECT: Denver International Airport, Denver, Colorado (U.S.A.)

YEAR OF CONSTRUCTION: 1993/94

DESIGNERS: Architects C. W.Fentress, J.H.Bradburn and Associates, Denver, Colorado

TILE-SETTERS: Heuler Tile of Wauwatosa, Wisconsin

FABRICATION OF GRANITE: Tecnomaiera of Turin (Italy)

MATERIALS: 35,300 square meters of granite

CONTEMPORARY ART HAS "INVADED" THE NEW TOULOUSE METRO. THE FIFTEEN STATIONS OF "LINE A" WERE TILED WITH ENAMELLED VITREOUS TILE IN VARIOUS ARTISTS' INTERPRETATIONS, INSTALLED WITH MAPEI PRODUCTS.

THE TOULOUSE METRO

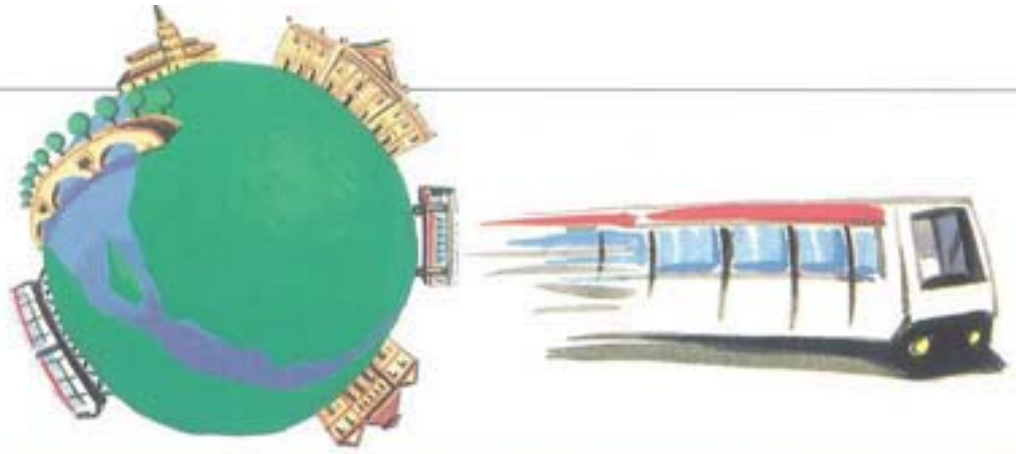
by Francesco Stronati and Gilles Bollé-Reddat

Urban development, often chaotic from the end of the war to the present day, gave rise to the need for rapid and efficient urban transport. This last has given underground rail systems a significant boost in the last few years.
Although underground, these systems have points of access above ground that can become important meeting places. So they must be functional and at the same time fit into their urban and civic context.
The new Toulouse Metro is a good example: its first line was inaugurated June 26, 1993, and the second is to be completed before the year 2000.
One thousand people have been permanently mobilized at the various job-sites to complete the project, which involves 200 companies and a total investment of 3.3 billion French francs.

15 stations in 5 years

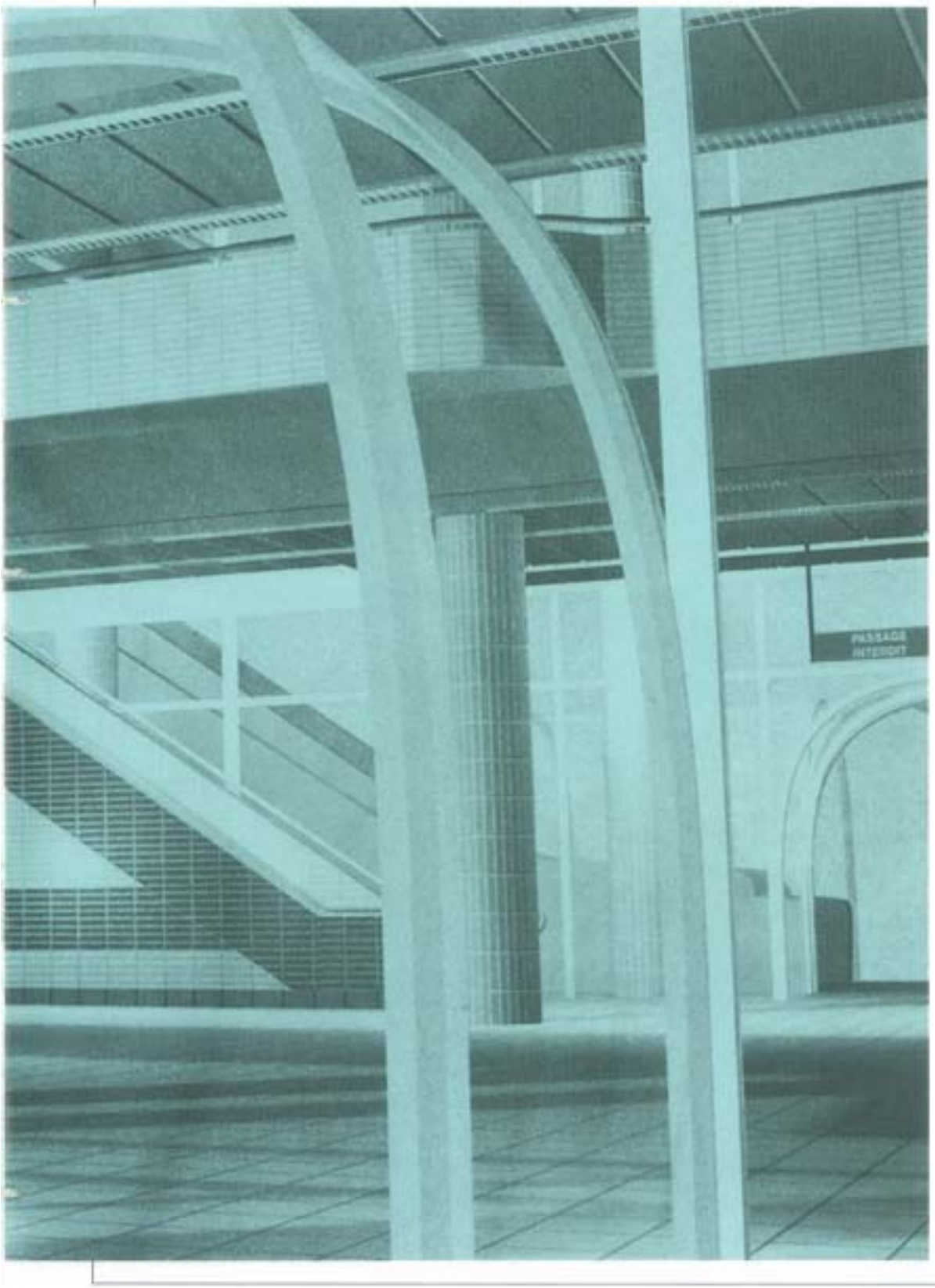
The first line of the Metro, completed in just 5 years, is 10 kilometers long, consisting of: 1 km over viaduct, 3 km

Technical data sheets for the products mentioned in this article are contained in Mapei binder No. 1 "Setting Materials for Ceramic Tile and Natural Stone" and No. 3 "Building Specialty Line"



On the previous page, a work-in-progress photo taken during the installation of the ceramic tiles, for which the following products were used:

* *in North America*



Mapegrout Thixotropic

*Nivorapid/Planipatch**

Granirapid

*Kerabond + Isolastic/Keralastic**

Keracolor Large Grain

Mapesil AC

open cut, and 6 km tunnel, dotted with 15 street-level stations designed and built with incredible care. In each of these the architect's work is combined with that of the artist. In the Saint Cyprien station, for example, François Morellet created a minimalist monument to "Toulouse Brick"; in the Place du Capitole, the main station near City Hall, the Italian painter Giulio Paolini erected nine granite columns; in the Bellefontaine station, Guy-Rachel Grataloup created a fountain of two truncated pyramids; and in the Mermoz station, Jean-Paul Chambas painted a series of images representing "a wild craving for fresh air".
In all fifteen stations thousands of square meters of enamelled vitreous tiles were installed that are beautiful, easy to clean, and resistant to wear.
Tile was used on all interior station surfaces, and at Bellefontaine on the exterior as well.

Problem platforms

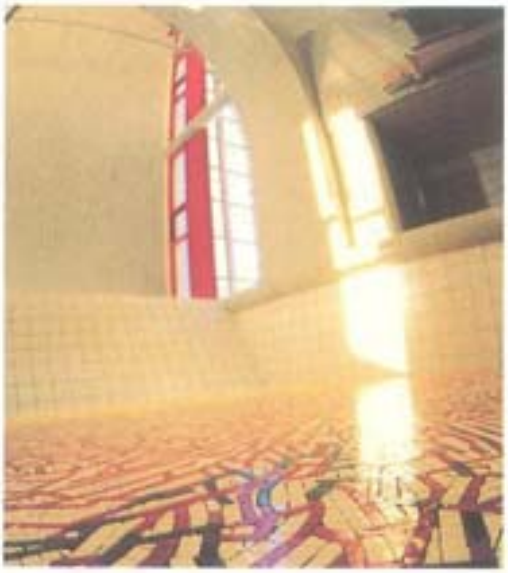
The station platforms were one of the most problematic aspects of the project from a

On the opposite page, a detail of the Bellefontaine station (Y. Faup and F. Zirk, architects), and the turnstiles of the Joliment station

On the right, detail of ceramic mosaic of the Bellefontaine station

Below, sculpture by Daniel Coulet in the Mirail Université station

technical standpoint. They had been previously overlaid with a bituminous membrane completely unsuitable for receiving any type of floor covering. The following solution was adopted to solve this problem within a relatively short time:
- complete removal of the existing bituminous membrane;
- levelling of the substrate with NIVORAPID/PLANIPATCH*, a thixotropic cementitious finishing compound with



ultra-fast hardening;
- 6 hours after the application of the NIVORAPID/PLANIPATCH*, installation of the ceramic tiles with GRANIRAPID adhesive, the two-component fast-setting and drying adhesive system. With GRANIRAPID, the platforms were ready for foot traffic 24 hours after setting the tiles.

Ceramic murals

Before installing the ceramic wall tiles, a 5 cm thick spray application of plaster was required. MAPEGROUT THIXOTROPIC, a pre-blended shrinkage-compensated cement mortar, was used.
The tiles were installed with KERABOND, a cementitious powder adhesive admixed with ISOLASTIC/KERALASTIC* an elasticizing latex for cementitious adhesives.
Using ISOLASTIC/KERALASTIC* made the adhesive flexible enough to absorb possible differential deformations between the cement plaster and the ceramic tiles.
Joints were grouted with KERACOLOR Large Grain, special cementitous grout for joints 4 to 15 mm thick. MAPESIL AC single component silicone sealant was used to seal the flexible joints, after a previous application of PRIMER FD.

* *in North America*

TECHNICAL DATA

PROJECT: 15 stations of Line A of the Toulouse Metro (France)

YEAR OF CONSTRUCTION: 1993

TRANSPORT MANAGEMENT: MT Développement, Toulouse

TILE INSTALLERS: Mosaïlux de Toulouse, Vincent Catala, Mgr.

GENERAL CONTRACTOR: Bisseuil, Groupe Bouygues

INTERIOR INSTALLATION: 1400 sq. m. VB Granifloor 30x30, 20,000 sq. m. Buchtal in various formats, 1,500 sq. m. granite

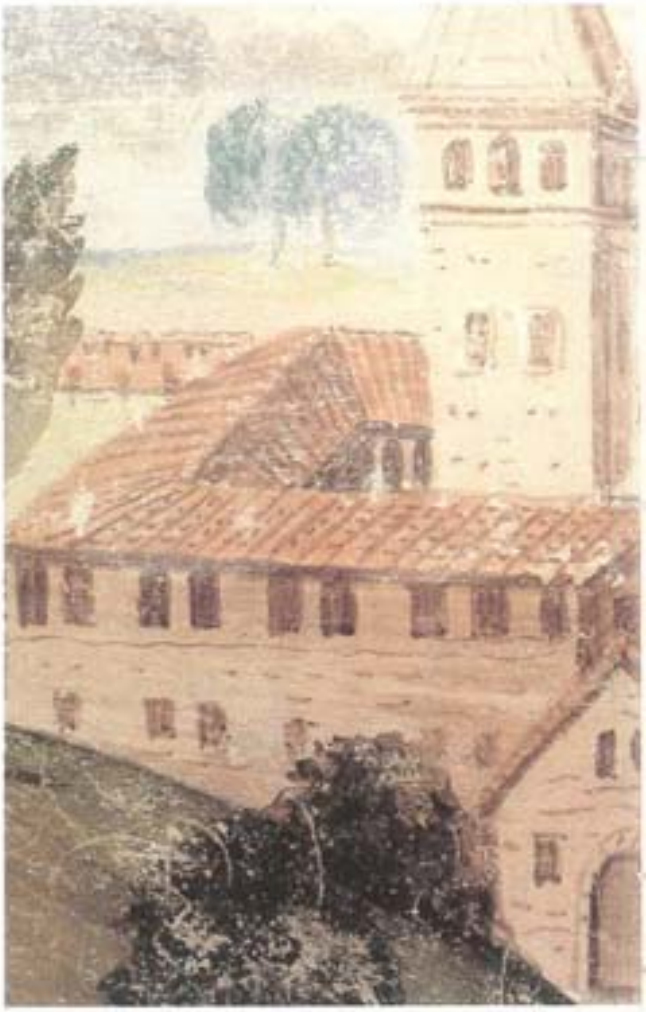
EXTERIOR INSTALLATION: 1,200 sq. m. enamelled vitreous tile

RESTORATIONS

RESTORATION OF THE CHURCH OF SAN GIOVANNI IN FERRARA BROUGHT TO LIGHT A PAINTING FROM THE 16TH CENTURY. A NEW BINDER COMPATIBLE WITH THE OLD BROUGHT THE BAPTISM OF CHRIST BACK TO ITS ORIGINAL SPLENDOR. A PAMPHLET ILLUSTRATING THE RESTORATION WORK IN DETAIL IS AVAILABLE ON REQUEST FROM LONGO PUBLISHING OF RAVENNA.

by Franca Donati, Roberto Mambelli and Paolo Racagni

THE REDISCOVERED FRESCO



Above, the exterior of the church of San Giovanni in via Montebello, Ferrara, at the turn of the century. In the large photo and at right, two details of the Baptism of Christ fresco which was recently restored. The drawing shows the location of the fresco at the far end of the apse

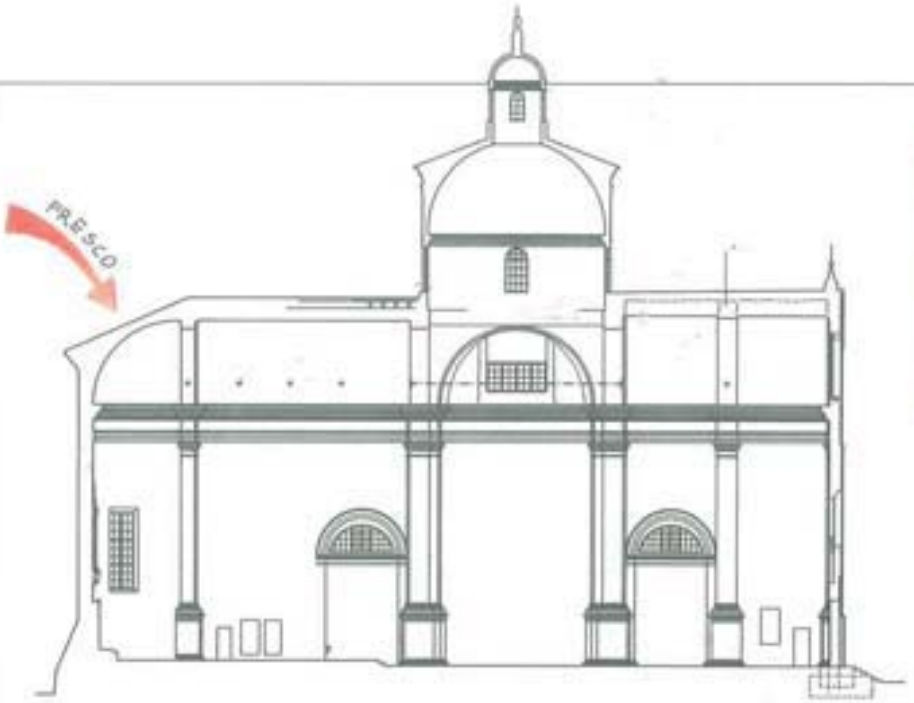
Among the many works of 16th century religious architecture in Ferrara, San Giovanni stands out for the originality of its plan in the form of a domed Greek cross. Sebastiano Serlio in Book V of his treatise wrote that "this square temple shaped like a cross" was inspired by the style of Bramante.

During restoration work on the church financed by the Architectural Commission of the Provinces of Ravenna, Ferrara and Forlì, an incredible discovery was made: underneath tempera paint that had been applied in the apse of the church in the18th century lay a beautiful 16th century fresco depicting the Baptism of Christ.

Careful removal of the layer of tempera enabled a large part of the older work to be recovered. Although tests on the fresco determined that the paint was in an excellent state of preservation, the same could not be said of the underlying support which was severely deteriorated.

Acoustic sounding determined that in large sections of the work there was also extensive separation of the paint from the plaster beneath.

Special tests conducted in the Mapei research laboratory, i.e. mineral analysis in the infra-red spectrophotometer and the X-ray diffractometer, as well as EDAX chemical analysis, showed that the composition of the original binder was a



mixture of gypsum and lime, and that the pigments were mostly based on iron oxides.

The stages of the restoration

The first operation consisted in re-bonding the plaster to the wall with a binder that had to have the following characteristics:
- physical-mechanical properties similar to the original binder;
- good adhesion and cohesion;
- resistance to chemical-physical attack;
- low specific gravity, since the operation was being carried out in the vault of the apse.

Given the importance of the work, several comparison tests on various injectable mortars were conducted with the collaboration of the Mapei research laboratories, and, based on the results, MAPE-ANTIQUE I binder (photo at right) was chosen for injecting into the masonry. It was applied using the following procedures:
In the areas that presented obvious separation of the plaster from the wall (photo 1) holes were drilled with a very fine drill-bit (photo 2). An injector cleaning squirt was used to remove dust from the interspace which would otherwise have significantly reduced bonding of the binder to the two surfaces (photo 3). The surfaces

RESTORATIONS

PHOTO 1
Detail of the just restored Baptist of Christ fresco

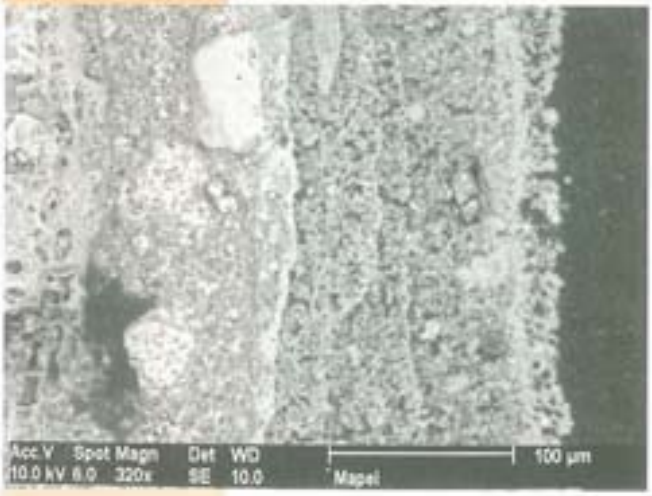
PHOTO 2
Drilling carried,out with a very fine drill-bit

PHOTO 3
Removing dust with an injector cleaning squirt

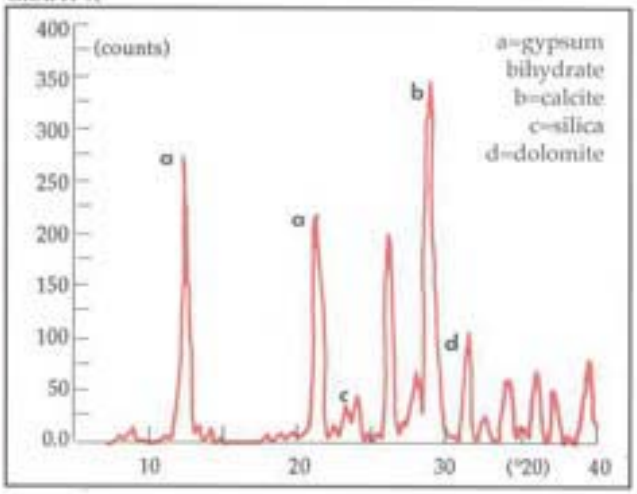
PHOTO 1

PHOTO 2

Below, an electron microscope enlargement in the Mapei laboratory. From right, 18th century paint, gypsum plaster, limewash, plaster, 16th century paint, limewash, plaster. The graphs illustrate the chemical and mineralogical aspects of the limewash: A) diffractometric analysis determines the crystal compounds contained in the sample. B) EDAX microanalysis of a Scanner Electron Microscope image permits chemical analysis of a pre-determined area of the sample. C) infrared spectrum analysis identifies the materials contained in the sample.



GRAPH A



were then cleaned with an injection of a mixture of water and ethyl alcohol. Mortar was then prepared with MAPE-ANTIQUE I binder (photo 4) which was injected into the holes (photo 5).
Lastly, simple acoustic sounding confirmed that the binder had penetrated completely and was homogenous in all areas which had previously contained cavities and separation, thus restoring the integrity of the original work.

PHOTO 3

PHOTO 4
Preparation of mortar with MAPE-ANTIQUE I

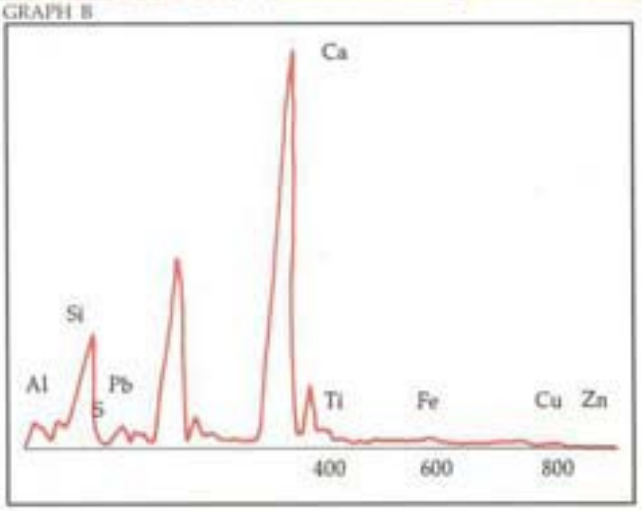
PHOTO 5
Injection of mortar to bond plaster to wall

RESTORATIONS

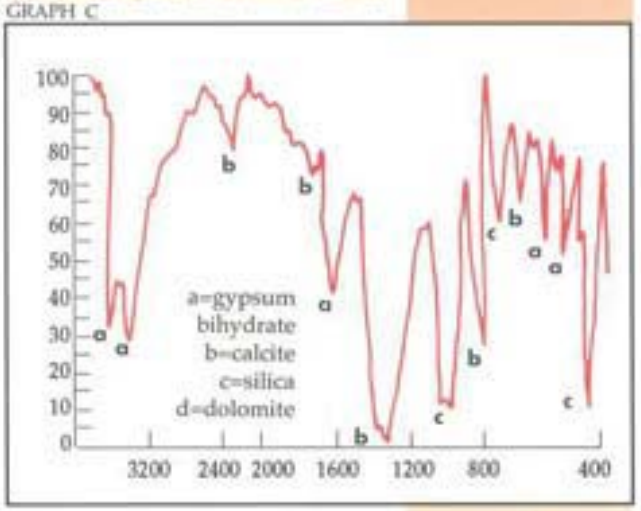
PHOTO 4

PHOTO 5

GRAPH B



GRAPH C



PAOLO RACAGNI

Dr. Racagni has worked at the Signorini Studio and the Mosaic Cooperative of Ravenna, has taught at various prestigious institutes, and was Director of the Ravenna Academy of Fine Arts. He is currently teaching a course in mosaic restoration at the School of Restoration of the Ravenna Office of Fine Arts. Since 1990 he has been the Director of the Restoration Faculty of the Spilimbergo School of Mosaic Restoration.

ROBERTO MAMBELLI

Since receiving his degree in pure chemistry, Dr. Mambelli has taught courses in the chemistry of mosaic restoration at the Ravenna State Institute of Mosaic Art and at the Spilimbergo School of Mosaic Restoration. He has also worked for the CNR R & D National Center studying techniques and materials for restoration and since 1992 has collaborated with Mapei for the study and application of special materials for restoration.

FRANCA DONATI

Dr. Donati has worked for the CNR R & D National Center where she was head of the Chemical Laboratory of the Institute for Ceramic Research Technology of Faenza. Currently she is taking part in a group that does consulting and planning for preservation and restoration that is part of the Spilimbergo School of Mosaic Restoration. Since 1992 she has collaborated with Mapei for the study and application of materials for restoration.

ADMIXTURES FOR CONCRETE

The preparation of high-strength quality concrete that is watertight and durable in aggressive environments is now mandatory according to European standards (ENV 206).
The Mapei line of admixtures fulfills requirements for quality concrete and helps you get the job done better, because it makes placing concrete faster and easier.

PLASTICISERS

MAPEPLAST N 10
MAPEPLAST N 30

ENHANCED SUPERPLASTICISERS

MAPEFLUID M 308
MAPEFLUID M 318
MAPEFLUID IF 328
MAPEFLUID X 404
MAPEFLUID PZ 500

VERSATILE PLASTICISERS

MAPEMIX N 60
MAPEMIX R 64

MISCELLANEOUS PRODUCTS

ADMIXTURE AR
MAPETARD
MAPEPLAST PT1
ANTIFREEZE
ANTIFREEZE S

SUPERPLASTICISERS

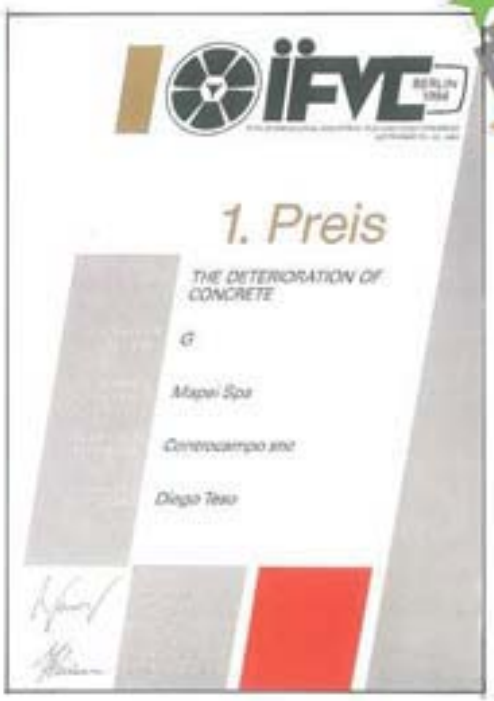
MAPEFLUID N 100
MAPEFLUID R 104
MAPEFLUID N 200

COMPLEMENTARY PRODUCTS

MAPECURE E
DMA 1000 FORM RELEASE AGENT
DMA 2000 FORM RELEASE AGENT

THE "DETERIORATION OF CONCRETE" VIDEO PRODUCED BY MAPEI WINS THE FILMSELEZIONE CONTEST AND GOES ON TO TAKE FIRST PRIZE AT THE INTERNATIONAL FESTIVAL IN BERLIN

WE GOT THE OSCAR!



The jury of Filmselezione, the annual Industrial Film and Video Festival, held its awards ceremony 1994 June at Villa Erba in Cernobbio on Lake Como.
The festival is part of "Business Communications Week", and the awards were presented by Luigi Abete, president of Confindustria. Filmselezione awards-winners represented Italy at the 35th International Industrial Film and Video Festival in Berlin from September 19th to 22nd, where the film was awarded first prize in the "Technology and Research" category.

Video-philosophies galore

The jury, headed by Umberto Collesei, Marketing Professor at the Università Ca' Foscari in Venice, was made up of: Gabriele di Matteo, journalist, Giorgio Fossati, communications consultant, Andrea Kerbaker, from the Pirelli public relations department, and Massimiliano Tremiterra, of the public relations department of the National Institute for Foreign Trade.
There were many entries: from productions aimed at promoting corporate image, to behind-the-scenes filming of commercials; from the humanitarian, social and environmental aspects of industry, to television programming with informational and economic content.

The voice of business

At the center of the speeches and debate which enlivened the awards ceremony was the new identity of both internal and external corporate communications.
Among other things, it was underlined that communications must be considered on an equal footing with the other traditional corporate departments (marketing, human resources, accounting), and that it promotes and achieves existing corporate goals and helps formulate new ones.
Another key-concept: advertising is less and less misleading and superficial, and more and more aimed at product quality and reliability.

School for concrete

The "Deterioration of Concrete", a scientific and educational film produced for Mapei by Controcampo of Venice - Italy (directed by Diego Teso, with photography by Massimo Monico).
Starring in the film was Mario Collepardi, professor of concrete technology at the University of Ancona, Italy, in the role of the scientist that he is in real life, one of the world's leading experts in the field, who moves amidst gigantic fragments of concrete in a setting that is perfectly...Jurassic.
During the fifteen minute video the causes of decay in concrete structures are discussed and various possible repair solutions are shown using Mapei products.

THE MAKING OF THE CONCRETE VIDEO

"LIGHTS!" "CAMERA!" "CONCRETE!"

Diego Teso of Controcampo, the industrial film video company with offices at Chirignago, near Venice (Italy), is the author, along with Enrico Soci, of the film entitled "The Deterioration of Concrete", which won awards at Filmselezione and at the International Industrial Film and Video Festival held in Berlin. This is by no means a first work for director Diego Teso, who has already produced educational films in the past for Mapei. The 43 year old Teso, who abandoned the theatre to make industrial videos, talks about his experiences and the research which led him over the years to go deeper and deeper into the seemingly inert material of chemical products for construction.

What is this technical film about, exactly?

This film is part of an ambitious promotional project designed with Mapei's Doctor Giorgio Squinzi. They are three episodes which take on the subject of chemical products for building in a new way. We are fortunate to be able to rely upon such an exceptional consultant as Professor Mario Collepardi, one of the greatest experts in this area. In this first film we start with the causes of deterioration in concrete from a scientific and technical standpoint, before proceeding to explain the action of admixtures for concrete: what they are and what they do. Then we are get into the subject, literally.

How did you manage to make an inert and unattractive material like decayed concrete interesting?

We used four techniques.The first consisted in presenting an academic seminar to a group of concrete specialists, who are the audience the film is aimed at. The second takes advantage of the enormous possibilities expressed by computer graphics which enable one to enter into the subject. The third is a special effect: we enlarged a concrete sample to gigantic proportions. Lastly, we filmed a lot on a dolly which gives the film a sense of movement and reduces the number of still images.

How did Prof. Mario Collepardi react to the giant mock-up?

Imagine having to use a prop the size of a truck. When he saw "the behemoth", he was flabbergasted. On the other hand, it was the only way we could get an effect that was really spectacular.

Did you film outdoors as well?

Yes, we filmed some viaducts so we could get "hands-on" experience with real concrete decay. When you drive over them in the car, they all seem more or less sound, and instead...

How long did it take to make this 15-minute film?

Six months: first the script was checked, rechecked and changed several times (the eight-page text was cut to four pages). We filmed the seminar sequence in the Mapei laboratory in Milan, then we built the big prop in the studio. Post-production, editing and music took 20 days.

What is the difference between this film (which will be followed by the film on admixtures and products for restoration) and the other films you shot for Mapei?

It's definitely a quantum leap in communications. In the other films we're presenting technical information on how to use various products to installers and contracting firms. These are very didactic films used by the technical assistance department during training seminars all over Italy. They are shown at the end of practical demonstrations as a review, or are even distributed as part of the seminar material at the end of the course. This film is something else entirely. It is meant for designers, engineers and public officials. The topic is not a small construction job but projects of significant dimensions. It's meant to be shown at design conferences and very specialized meetings.

How did you find Prof. Collepardi in this unusual acting role?

His performance and the confidence that comes from knowing his subject amazed me. He was always calm and collected despite the long pauses that are inevitable in film-making. The filming was done in very few takes compared to filming with professional actors, who need a lot more!

IN THE MAPEI RESEARCH LABORATORIES, TIZIANO CERULLI AND DAVIDE SALVIONI EXPLAIN THE IMPORTANCE OF THE PHILIPS SEM XL20 SCANNING ELECTRON MICROSCOPE.

THE LARGER-THAN-LIFE SEM

PHOTO 1

PHOTO 2

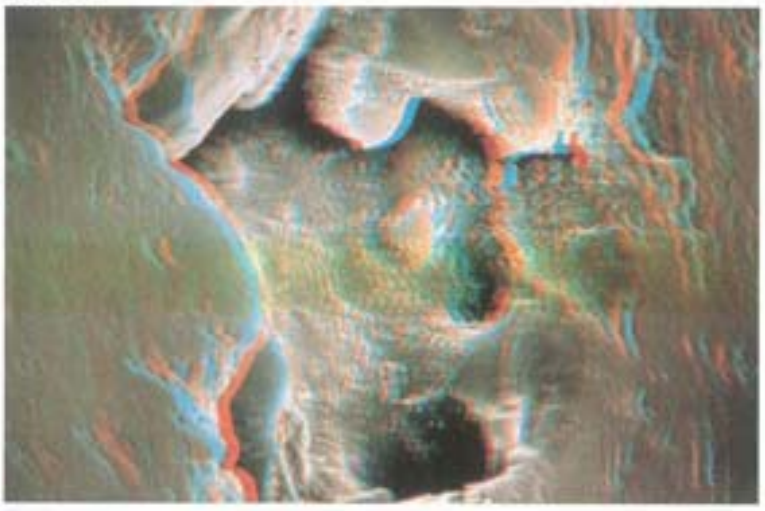


PHOTO 1
Analysis with the SEM is a group effort to exchange opinions

PHOTO 2
A view of the surface of a polished porcelain tile which appears smooth to the naked eye! (magnified 1000 times)

PHOTO 3
Samples must be placed with care in the SEM to prevent contamination which would distort data

Recent technological developments have opened up vast horizons for scientific research. With the invention of the scanning electron microscope (SEM), exceptional results have been achieved in biomedicine and the natural sciences.
Able to magnify details over 100,000 times, this instrument has proved ideal for studying extremely minute structures such as DNA, viruses, and defects in materials.
The extraordinary innovation of the SEM consists in using electrons instead of light, and magnetic in place of glass lenses.
The SEM employs principles of applied physics and the most advanced technology. Fifty years passed between the first prototype and the latest model, which is controlled by the simple computer "mouse".
A SEM is very different from an optical microscope. Not only is it constructed differently, but samples are analyzed in a vacuum chamber, and in certain cases require preparation before being examined (see photo 3). The images obtained can

PHOTO 3

supply morphological data by magnifying surfaces, and chemical data from the atomic number of the elements enlarged.
With its sophisticated software for reconstructing images, the SEM can analyze three-dimensional samples, showing their shapes better so they can be more easily studied. Two-toned 3D glasses are indispensible for this kind of observation.
A few months after its official presentation at the Scientific Equipment Exhibition in Seattle, Washington, in August 1990, a SEM XL20, the lastest generation of scanning electron microscopes, was installed in our laboratories.
The SEM is operated by Tiziano Cerulli, head of the Analysis Laboratory, Davide Salvioni, a microscope technician with wide experience on the SEM, and Maria Rosa Gulfo, who has years of analytical experience (photos 1 and 4).
The extremely sophisticated electronic system which controls all operations through a personal computer represents the ultimate in this series of instruments.

PHOTO 4

The SEM XL20 allows the technician to concentrate better on the material being examined because it is considerably simpler to operate than earlier models. The SEM is used in many areas, such as research and development of new products, control of raw materials, and technical assistance.
Here are some examples:
- Because of its above mentioned ability to examine minute structures, it was possible to identify the hydration structure of hydraulic binders, particularly ettringite (which causes the separation of cement compounds from gypsum).

PHOTO 5

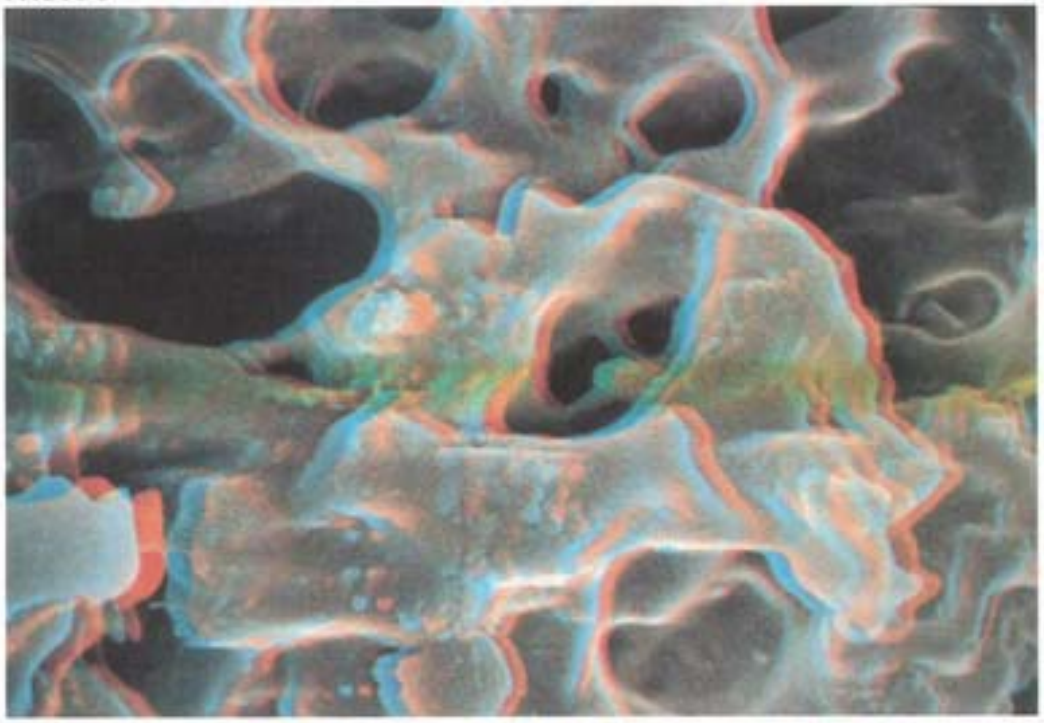


PHOTO 6

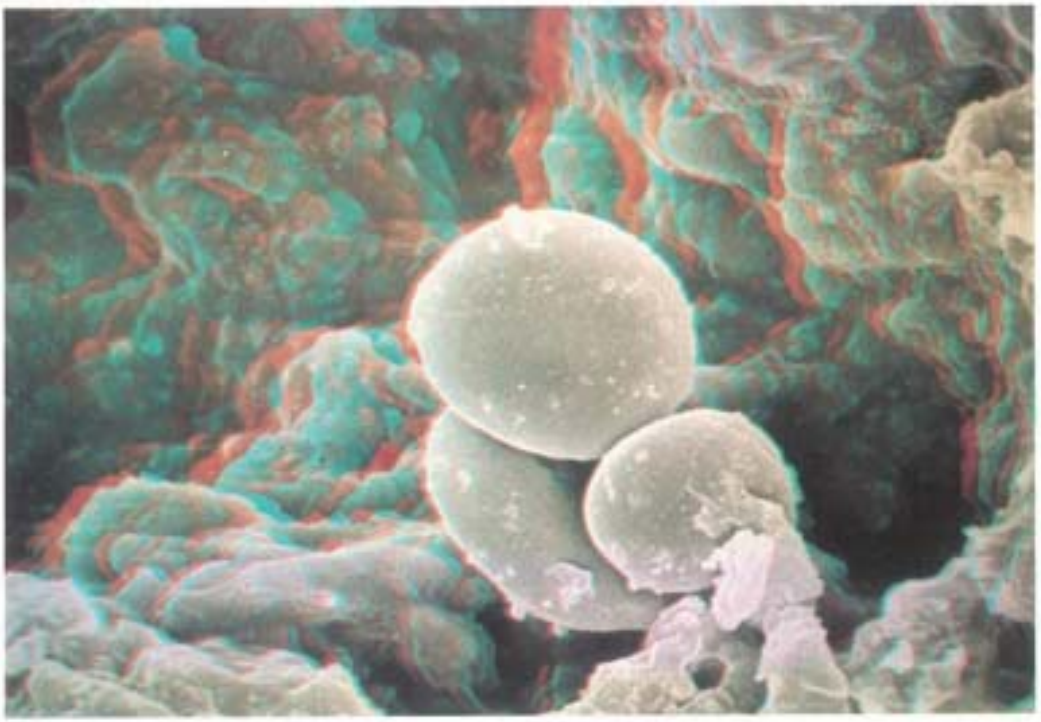


PHOTO 4
Tiziano Cerulli and Davide Salvioni analyzing the enlargement of a sample

PHOTO 5
Polymer aggregates in KERABOND + ISOLASTIC/ KERALASTIC (magnified 20,000 times) which give the material elasticity*

PHOTO 6
Microsilica particles in MAPEGROUT HI-FLOW (magnified 10,000 times)

* *KERALASTIC in North America*

- The SEM's enormous magnifying power has facilitated the study of ceramic tile surfaces, revealing the miniscule surface holes which can make some types difficult to clean, particularly when cleaning tiles after jointing with colored grout.
- SEM proved valuable in identifying antique binders for plasters and paints, providing useful information in choosing materials for use in restoration.
- An important role played by the SEM is checking certain raw materials (microsilica, for example), for which it provides information regarding size and shape impossible to obtain otherwise.

These are a few of the prime applications of the SEM developed in the Mapei laboratories.
Further applications of great interest have already been discovered, with more to come in the future.

PHOTO 7

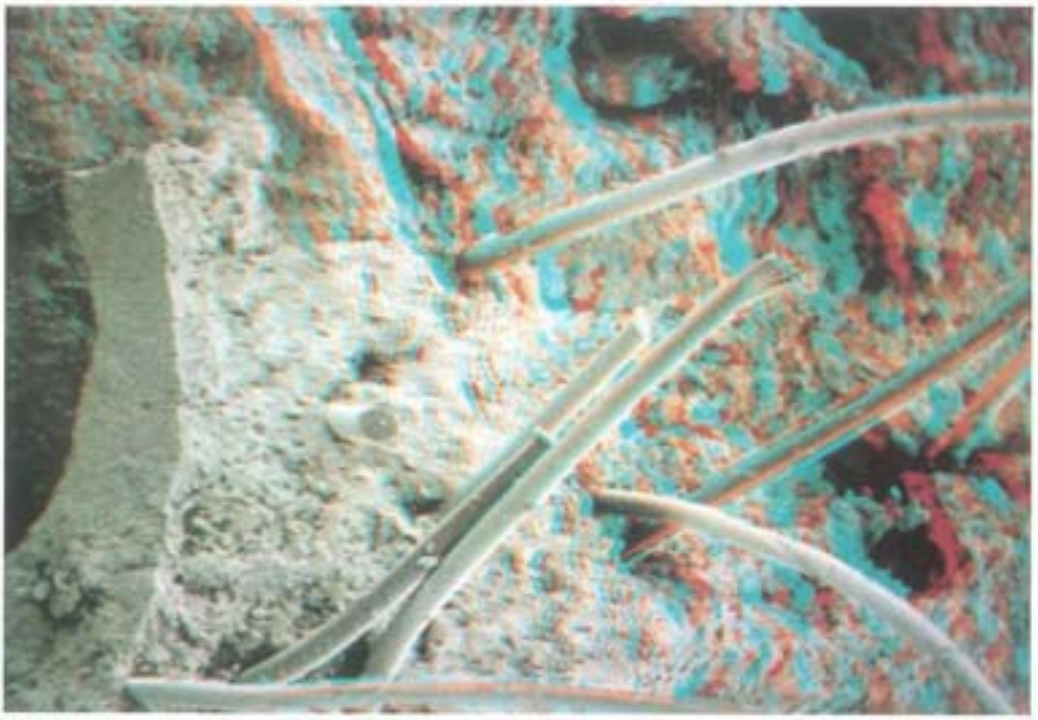


PHOTO 8

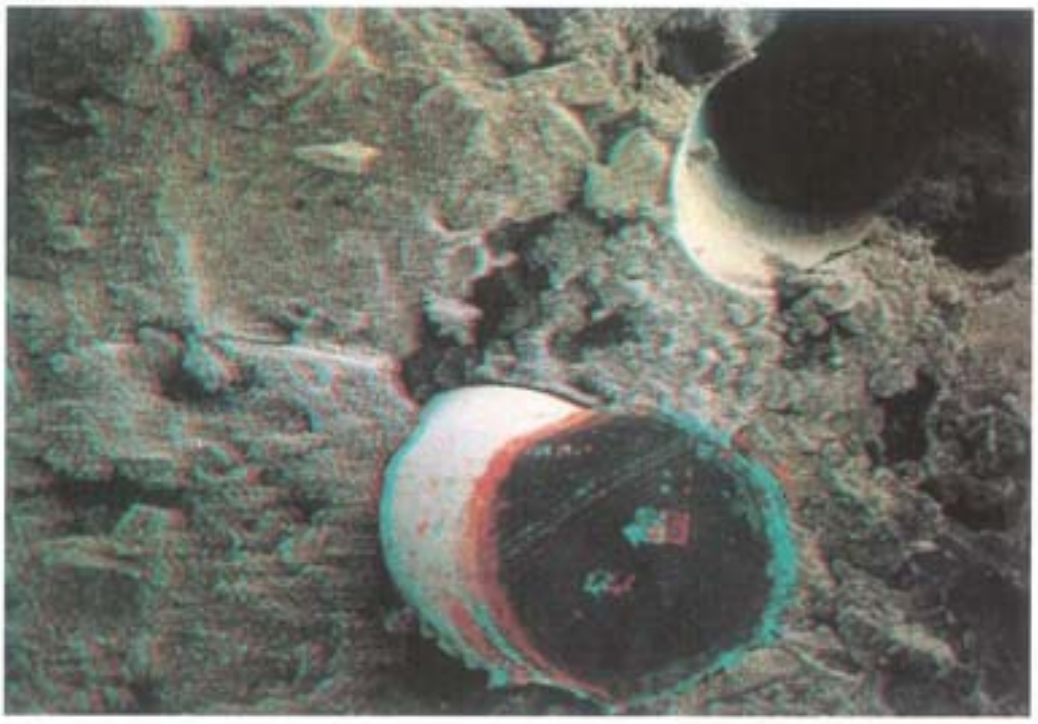


PHOTO 7-8
Non-toxic synthetic fibres in MAPEGROUT THIXOTROPIC (magnified 50 and 500 times)

MAPECEM: THE FAST-CURING HYDRAULIC BINDER

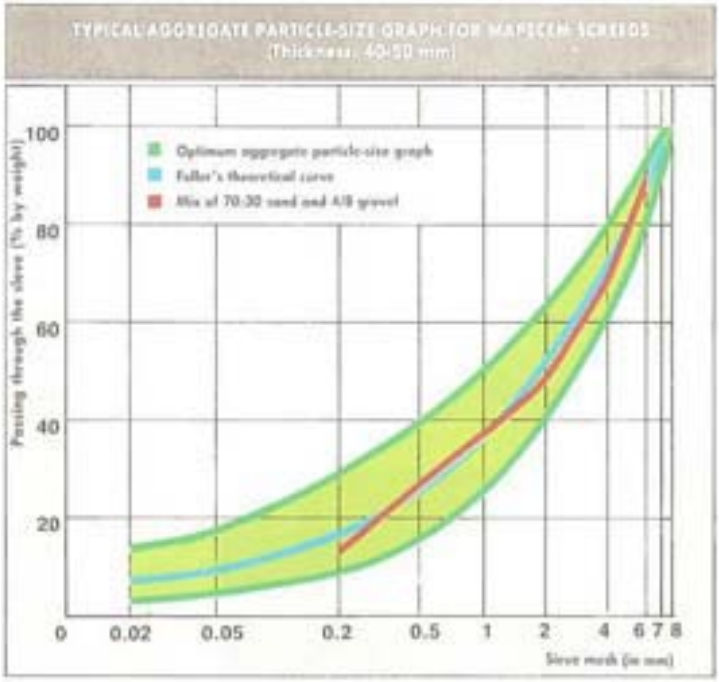
by Vittorio Riunno

PART 1°

PHOTO 1
Screeding with MAPECEM

Building has been revolutionized in recent years, essentially due to shorter construction time through better organization at the job-site and development of innovative technologies that have made new materials available, and thus greatly improved construction methods. For example, the time required to complete a multi-family dwelling has been reduced to approximately 6 months, a reduction of 24 months within a few decades. The chemical industry in particular has devoted much effort to developing new products.

Tab. 1



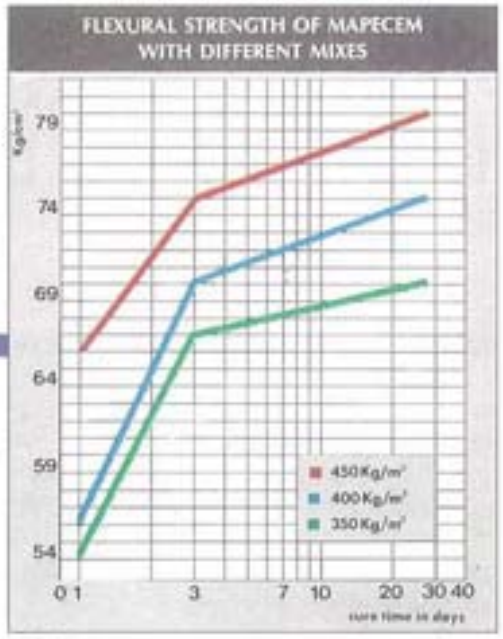
Tab. 2

COMPARISON OF PLASTIC MORTAR MADE WITH:	325 CEMENT	MAPECEM
Optimal mixing water	40%	40%
Free moisture after 24 hours	8-9%	2%
Shrinkage after 28 days	0,15%	0,015%

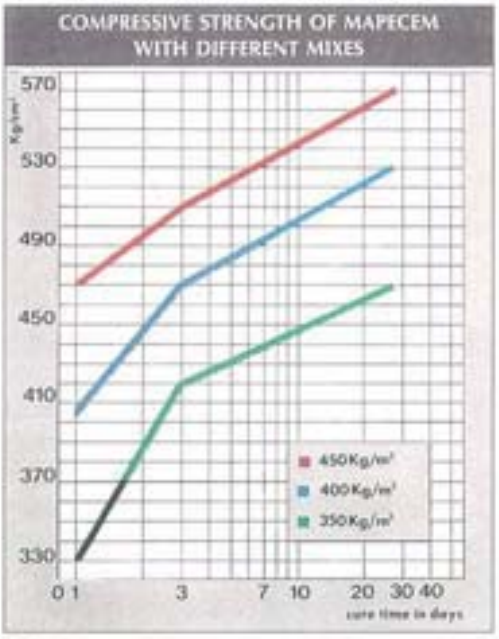
New idraulic binder

In March of 1988, after years of extensive research, a new special hydraulic binder named MAPECEM was introduced on the market. When mixed in the correct proportions with properly graded aggregates and water (see Table 1), it has the extraordinary ability to harden practically shrinkage-free in a few hours, and dries completely within 24 hours regardless of screed thickness, with a residual moisture content less than 2% by weight. Because of these properties and its extremely high mechanical strength, MAPECEM is an ideal binder for constructing floating concrete slabs or bonded screeds from 30 to 80 mm thick, ready to receive any type of floor covering material (ceramic tile, stone, wood, resilient flooring and carpet). In addition to these applications, MAPECEM is also the binder used as a base for innovative setting products for tile and natural stone, leveling compounds and grouts.
Let's compare some characteristics of ordinary Portland cement with MAPECEM: using a plastic mortar prepared in compliance with Italian standards (see Table 2), MAPECEM is already dry after 24 hours, and shrinkage after 28 days is approximately one-tenth that of Portland 325 cement. Development of flexural strength (Table 3) and compressive strength (Table 4) is so rapid that after 24 hours it surpasses even the strictest standards for cement screeds (such as the German DIN 4109). In Table 5 we can see that the shrinkage in a Mapecem screed is really minimal compared to that of a conventional Portland cement screed. Residual humidity is so low (less than 2% by weight) after 24 hours (see Table 6) that the Mapecem screed is ready to receive any type of further treatment.
Now let's look at the ways we can take advantage of the special characteristics of this cementitious binder when used for installing ceramic tiles and natural stone.

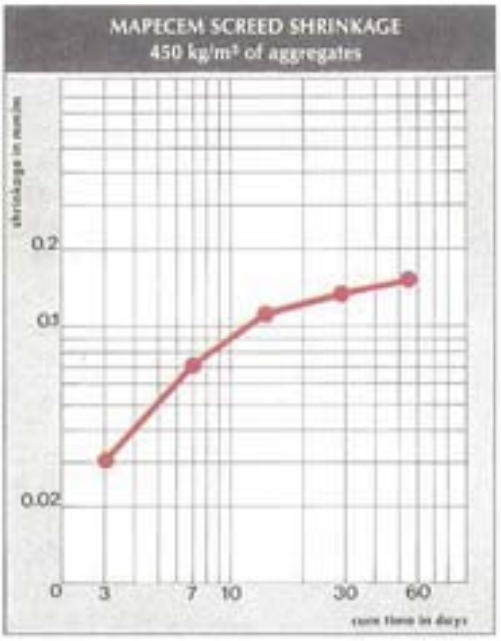
Tab. 3



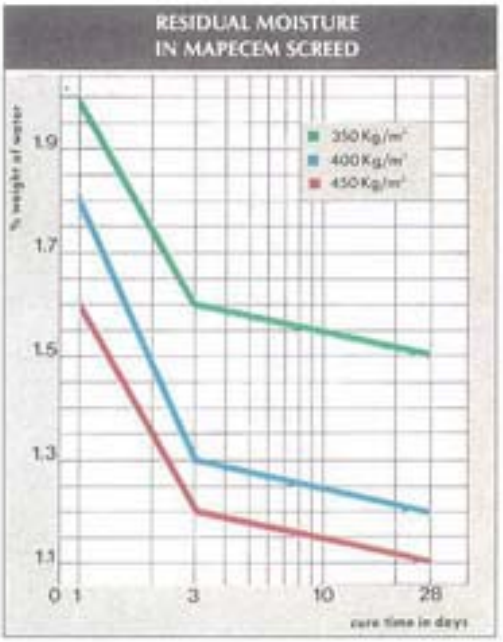
Tab. 4



Tab. 5



Tab. 6



Setting terra cotta

Technically speaking, terra cotta is a flooring material of medium porosity that can be with a ribbed back and limited dimensional accuracy as a result of the techniques used to manufacture it. With these characteristics, the setting method most often used is a conventional thick-bed mortar from 3 cm to 7 cm thick. This mortar, whose composition varies from case to case, is composed of aggregates and binders such as Portland cement, hydraulic lime, and hydrated lime, all substances that liberate calcium hydroxide in the presence of moisture, such as that contained in the bed-mortar. The calcium hydroxide tends to migrate to the surface, either through the porous structure of the terra cotta or through the cementitious mortar used in grouting joints.
When it reaches the surface the calcium hydroxide quickly reacts with the carbon dioxide in the atmosphere as described in the following formula:

$$Ca(OH)_2 + CO_2 \blacktriangleright CaCO_3 + H_2O$$

This shows up as unsightly whitish efflorescence of calcium carbonate on the surface. This reaction continues as long as there is moisture in the bed-mortar, sometimes up to two or three months.

PHOTO 2

PHOTO 2
Carbide hygrometer for an absolute measurement of humidity, and below the MAPEI electronic hygrometer

PHOTO 3

PHOTO 3
Setting terra cotta tiles

Such efflorescences are even more unattractive when one of the ever more popular colored grouts is used. A fact well known to tile-setters is that it sometimes takes two to three months before terra cotta can receive its final treatment. Using MAPECEM binder, a new system has been developed which makes a terra cotta floor ready for final treatment in only 72 hours. Let's look at this operation in detail:
a) Preparing a screed of the thickness usually required (4 cm to 8 cm in most cases), using 350 kg to 400 kg of binder per cubic meter of aggregates, graded from 0 to 8 mm, on a dry substrate insulated from possible rising damp with a vapour barrier.
Terra cotta can be set 4 to 6 hours after placing the screed. After 24 hours the screed's residual humidity is less than 2% by weight.
b) Setting the terra cotta with GRANIRAPID, a two-part adhesive mortar (average thickness: 3 mm to 15 mm) which consists of a synthetic rubber latex and a powder composed of MAPECEM and accurately graded sand. This adhesive mortar is ready for traffic and grouting joints after 4 to 6 hours.
c) Grouting with ULTRACOLOR, a MAPECEM binder-based grout, available in many bright colours and without efflorescences which can be cleaned with acid after 12 hours.
The terra cotta can be treated when all the moisture from the acid treatment has evaporated (approx. 24 hours) and there is no danger of efflorescence.
A perfect result in a maximum of only three days, compared to the conventional system which requires at least 4 weeks, and at times as much as 2 to 3 months.

Setting natural stone

MAPECEM's ability to dry completely within a few hours can be used to great advantage when setting natural stone, especially marble. These materials have two kinds of problems that are both related to the prolonged presence of moisture in the mortar:
1) Calcareous stone such as white marble (Carrara marble, or Greek crystalline marble), and marbles such as German Jura, etc. often contain soluble impurities, which are dissolved by the alkaline water of the mortar and conveyed to the surface, causing stains that are sometimes widespread.
2) New technology has made it possible to cut square, polished tiles of natural stone in thicknesses of 8 mm to 10 mm. Such thin materials and agglomerates are by no means stable. They are in fact often subject to considerable expansion and warping due solely to their being installed on a thin layer of mortar. Because of MAPECEM binder's fast drying characteristics and its low alkalinity compared to conventional cementitious binders, these problems are completely eliminated. Using GRANIRAPID (which has a base of Mapecem binder) for setting natural or agglomerated stone also prevents migration and warping flooring can be polished only 24 hours after installling, an enormous advantage over traditional methods which normally require from 3 to 4 weeks.

Installing ceramic tiles with minimum downtime

Going back to the subject of ceramic tiles, there are obviously many possible

PHOTO 4

PHOTO 5

PHOTO 4
Finishing terra cotta in only 72 hours after the start of installation

PHOTO 5
Finishing screed with trowel

PHOTO 6
Typical stains on white Carrara marble caused by migration of impurities

PHOTO 7
Computerized equipment for checking deformations in natural stone

PHOTO 6

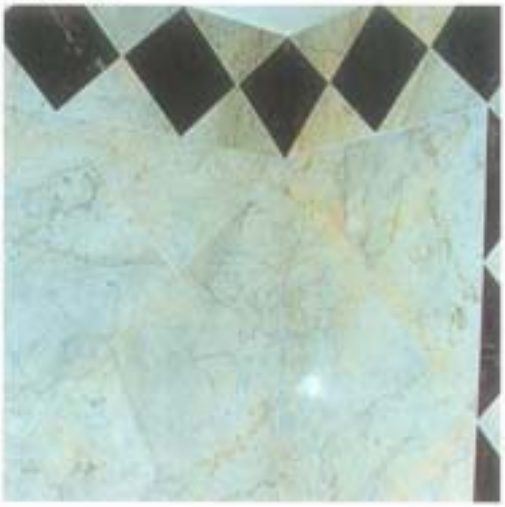


PHOTO 7

PHOTO 8

PHOTO 9

PHOTO 10

PHOTO 11

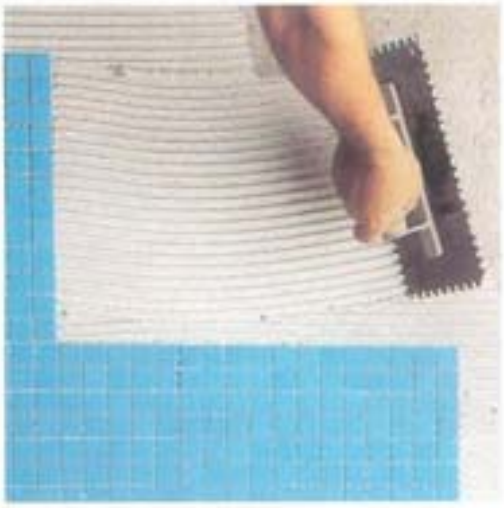


PHOTO 12

PHOTO 13

applications for these fast-setting systems which make exceptional results possible in an extremely short time. Here are some examples:

1) Installing impervious porcelain tiles for industrial or commercial applications such as supermarkets, airports, train stations, which cannot shut down.

2) Installing tiles in cold storage rooms. Refrigeration can be turned back on a few hours after setting clinker.

3) Installing tiles in swimming pools that can be ready to use in 2 to 3 days.

4) Installing large size or high lugged and heavy ribbed back impervious porcelain tiles in locations subject to heavy traffic. Floors can be ready for heavy traffic in 24 hours and the mechanical strength of the system is high enough to respond to the strictest norms and standards, such as French standards, and American ASTM C-627 standards for the Robinson floor tester.

5) Installing any type of materials on non-absorbent supports, such as existing flooring, etc., in renovation or repair work. Mapecem has made tile-setting easier and faster, with better results for more beautiful floors. In our next issue, part two of this article will show how to use MAPECEM for installing resilient flooring and parquet.

Our thanks to Tile Italia Magazine, from which this article was adapted.

VITTORIO RIUNNO

Vittorio Riunno has worked since 1973 in Research and Development for the Mapei group, where he heads the cementitious setting materials division for ceramic tiles. With his experience and in-depth knowledge, he can identify the source of a problem brought to him by customers or other researchers, come up with a technical solution and formulate the product designed especially for that purpose.

PHOTO 8
Setting Jura marble

PHOTO 9
Setting white Carrara marble

PHOTO 10
Setting impervious porcelain tile in a factory

PHOTO 11
Setting glass mosaic in a swimming pool

PHOTO 12
Setting marble agglomerate on existing flooring

PHOTO 13
Setting heavy-ribbed impervious porcelain tiles

WE'RE NUMBER ONE!

Last year's balance sheet for the Mapei-Clas cycling team was very satisfying: a clean sweep at the international professional level: 56 wins for our athletes and their coaches, Valdemaro Bartolozzi, Fabrizio Fabbri, Juan Fernandez and Jesus Suarez Cueva. As can well be imagined, the satisfaction was great all round. Toni Rominger, Number One in the worldwide classification, won 22 races, including the Vuelta de Espana (Tour of Spain) stage race for the third consecutive year. The Spaniard Abraham Olano won the Spanish national road championships, assuring himself a bright future with 7 wins. A memorable season with six victories each for Gianluca Bortolami, first in the World Cup, and Stefano Della Santa, who proved himself a most able climber with his successes in Spain: the Ruta del Sol, the Semana Catalana and the Gp Bicicleta Vasca races. Andrea Chiurato (second place in the world championship time trials in Sicily) and Federico Colonna took respectively three and four wins, with Andrea Tafi winning two.

Above, Gianluca Bortolami at the finish line of the Giro di Lombardia (Tour of Lombardy) which put him into first place in the 1994 World Cup

At left, the champion between Ernesto Colnago and Giorgio Squinzi

CUMULATIVE UCI CLASSIFICATION AS OF 31 OCT. 1994 (New system)

ROMINGER, MAN OF THE YEAR
•individual classification
1 Rominger (Switzerland) 1669 points; 2. Berzin (Russia) 1429; 3. Indurain (Spain) 1171; 4. Chiappucci (Italy) 1151; **5. Bortolami (Italy) 841**; 6.Furlan (Italy) 821; 7. Richard (Switzerland) 814; **8. Museeuw (Belgium) 807**; 9. Casagrande (Italy) 779; 10. De Las Cuevas (France) 762; 11. Tchmil (Russia) 760; 12. Ekimov (Russia) 744; 13. Abdoujaparov (Uzbekistan) 734; 14. Virenque (France) 643; **15. Della Santa (Italy) 635**; 16. Jalabert (France) 626; 17. Pantani (Italy) 602; 18. Leblanc (France) 598; 19. Ludwig (Germany) 536.50; **20. Olano (Spain) 534**.

MAPEI CLAS: TEAM OF THE YEAR
•team classification
1. Mapei-Clas 4948; 2. Gewiss-Ballan 4420; 3. GB-MG 4394; 4. Carrera 2759; 5. Banesto 2703; 6. Lampre 2631; 7. Mercatone Uno 2418; 8. Polti 2347; 9. Castorama 2276; 10. Once 2226.

55.291

A RECORD-BREAKING RECORD

THE GREAT ROMINGER PACKS MORE INTO AN HOUR THAN ANYBODY ELSE. TONI BEAT INDURAIN'S RECORD BY 2 KM, AND COPPI'S BY 10 KM!

As fast as the wind: that's 33 year old Swiss rider Toni Rominger, who November 5th, wearing the Mapei-Clas jersey, demolished his own record of the previous October 22nd. This incredible new exploit took place on the indoor track in Bordeaux, France, where in one hour he pedaled 55.297 km, beating his own record of 53.832 km. His previous attempt, which should be considered just a trial-run behind closed doors (the only ones admitted were those connected with the event and a few reporters invited by the sponsors) took place in an unusually silent atmosphere: the only sound to be heard was the whirring of the bicycle wheels (with a 59x14 gear ratio) and the encouraging shouts of Coach Juan Fernandez and trainer Dr. Michele Ferrari. In the second, amazing attempt on November 5th, it all went according to plan: Rominger broke the 55 km. barrier in the presence of an enthusiastic public. The champion started out strong, and lap after lap increased his advantage, covering the first 20 km in 21min. 42.851sec. and the first 40 km in 43 min. 26.867sec. The Mapei-Clas rider's performance left experts and observers literally astounded: the new record looks hard to beat, at least at sea level.

An unusual aspect of Rominger's performance was his steel Colnago bike weighing 6.5 kg. with lenticular carbon wheels and a 60x14 gear ratio that can reach 9.2 metres per stroke.
This was very different from the super-aerodynamic and imaginative models developed for athletes who had previously attempted the record like Obree, Boardman and Indurain. Many reporters wrote that it was a victory, finally, for a "real" rider and true cycling at its best.

THE HOUR RECORD

51.151 Km	Moser	23/1/84	Mexico City
51.596 Km	Obree	17/7/93	Hamar
52.270 Km	Boardman	23/7/93	Bordeaux
52.713 Km	Obree	27/4/94	Bordeaux
53.040 Km	Indurain	2/ 9/94	Bordeaux
53.832 Km	Rominger	22/10/94	Bordeaux
55.291 Km	**Rominger**	**5/11/94**	**Bordeaux**

MAPEI GB

THE NEW 1995 CYCLING TEAM HAS BEEN PRESENTED.

The new 1995 Mapei-GB Professional Cycling Team can be rightly called a multi-national in the composition of its riders and sponsors. It's a big team of 52 members, 27 riders supported by a staff of 25. They hail from four different countries, Italy, Belgium, Spain, and Switzerland, and yet have a common goal: adding that extra luster to their sponsors' image, promoting their products with a winning edge.
350 guests were on hand for the presentation of the new team, which took place January 26 at the prestigious Società del Giardino (the Garden Club) in the Palazzo Spinola, a Milan landmark built in the 16th century. Prior to the presentation of the professional team, Mapei Chairman Dr. Giorgio Squinzi emphasized the importance of other forms of cycling: the many junior and amateur teams, from whose ranks rise the potential champions of the future. He reminded the audience, too, of all the people who ride, but don't necessarily race, bikes, that form the base of the cycling pyramid and are the professionals' devoted supporters. This year the Mapei logo once again graces the jerseys of several amateur formations, such as the "Grassi-Mapefluid" team, "Micco-

On the occasion of the team's presentation, G.Squinzi wanted to stress the concept of multinational in sport: "A big team that goes beyond the border of our country to even better express an international philosophy. Such team must however keep the characteristics of a familiar environment. "Winning together" is a slogan that can only suit a group of big champions, who are such also in life; real men who fight for sport"

At the speakers' table from right to left: L.Maes (Latexco), N.Demeulenaere (ASS), R.Vercruysse (GB), G.Squinzi (Mapei), E.Colnago (Colnago), T.Ikenaga (Shimano), G.Cremonese (Sportful)

Ultraplan" (formerly Bottegone), "Brunero-Mapecem", "Pagnoncelli-Granirapid", and the "Yeti-Lampocem" teams. Young champion Dario Cioni inaugurated the Yeti team's mountain bike and cross-country season with his victory on Mount Narance in Spain.
All the members of the Mapei-GB staff are former riders. Marco Giovannetti, who retired from cycling in October after riding with the Mapei-Clas team last year, is press liason, along with former Belgian champion Claudy Criquielion; Valdemaro Bartolozzi, who has coached great champions, is team manager, along with Alvaro Crespi, former president of the Riders Association. The Directeurs Sportifs are Fabrizio Fabbri from Italy, Patrick Lefevere from Belgium, Jesús Suarez Cueva and Juan Martin Fernandez from Spain, who coordinate the team's athletic activities.
The public at the Società del Giardino warmly applauded world record-holder Toni Rominger: the 34 year old Swiss rider took the hour record to 55.291 km at Bordeaux in November on a customized Colnago bike. Italian (from Milan) rider Gianluca Bortolami won six races in 1994 and took first place in the World Cup. Among those who are back with the team again this year are: 30 year old Franco Ballerini who distinguished himself in the Paris to Brussels and the Gran Prix of the Americas; Andrea Chiurato, who won second place in the World Championship time trials; Federico Colonna, a sprinter who made his professional debut last year and won several races; Stefano Della Santa, a good climber with six wins in '94; Daniele Nardello, who had a winning first year as a pro; hard-working Andrea Noè and Dario Nicoletti are back, too, along with Andrea Tafi who was successful twice in '94. Other Italian riders will be helping Mapei-GB win, like sprinter Adriano Baffi, and new pros Marco Bellini and Alessandro Calzolari.
Waving the Belgian flag are five new arrivals, Carlo Bomans, Bart Leysen, Wilfried Peeters, Ludwig Willems and Johan Museeuw. Peters won the Gand to Wevelgem, and Museeuw was victorious in nine races last year, going neck to neck right to finish with Bortolami for the World Cup. Leysen had one win in '94, and Willems four. Willems, Peeters, Bowmans and Museew raced last year for the GB-MG team.
Abraham Olano Spain won five victories last season, including the Spanish national road championships and time trials. Fernando Escartin shows world-class promise; Federico Escartin always leaves his mark in the tough races; Jon Unzaga, Francisco Mauleon, and Miguel Angel Peña round out the Spanish contingent, along with Manuel Beltran in his first year as a pro. Mapei-GB riders will take part in all World Cup races, the big stage races, and various others in France, Germany, Switzerland, Australia, the United States, and even China. Along with Dr. Giorgio Squinzi, the team's other sponsors were present: Rudy Vercruysse, President of the GB chain of superstores in Belgium, Luc Maes for Latexco, the Belgian latex foam manufacturer, Ernesto Colnago of Colnago Bicycles, Ted Ikenaga of Shimano shoes and equipment, and Giordano Cremonese

Above, G.Bortolami's entry into the hall, welcomed by Laura Freddi and Miriana Trevisan of the TV show "Striscia la Notizia"

Below, T.Rominger's bycicle of the hour record, proudly presented by E.Colnago, in the picture with G.Saronni, A.Spazzoli and P.Colnago

of Sportful clothing.
Their trademarks that appeared on last year's Mapei-Clas Team jerseys are featured again this year on Mapei-GB jerseys, joined by Brico glasses and helmets, and Also Enervit energy supplements.
The presentation was hosted by Davide Dezan, with a very exciting video compiled from clips from his popular weekly television program "Ciclissimo", showing dramatic moments of the team's 1994 season. The new Mapei-GB jersey was presented to the public in a stirring choreographed entrance by Miriana Trevisan and Laura Freddi, familiar to Italian television viewers of "Striscia la Notizia", who lent a bit showbiz pzzazz to the occasion. After Mr. Dezan introduced the team members to an enthusiastic public, sponsors, Directeurs Sportifs and team members fielded questions from some of the many journalists in the audience. A hearty closing round of applause drew the proceedings to a close, and the company adjourned to an appetizing buffet. The team then left for a training "retreat" in Tuscany in preparation for what promises to be a winning season for Mapei-GB, their sponsors, customers, and fans: MAPEI-GB, WINNING TOGETHER.

Left, the multinational trio composed by Gianluca Bortolami, Toni Rominger and Johan Museeuw

Left below, the captain Juan Fernandez is in charge of the technical leadership of a long flagship. Also the Spanish Suarez Cueva, the Tuscan Fabrizio Fabbri (who will be the leader of the tour) and the Belgian Patrick Lefevere are fully entitled to be part of this flagship

Below, a pleasant moment of the show with F.Ballerini and J.Museeuw

We wish to thank the magazine "Tuttociclismo", from which we took some parts of the article "Mapei-GB Champions' team all united to win" by Luciana Rota, published on the issue of February 2nd, 1995

IS THE TITLE OF THE ARTISTS' PANEL COVERING AN EXTERIOR WALL OF THE NEW CIVIC HOSPITAL IN IMOLA, ITALY. THE FLORAL-MOTIF AND VITREOUS CERAMIC TILE DESIGN FROM THE COOPERATIVA CERAMICA D'IMOLA WAS INSTALLED USING MAPEI PRODUCTS.

Say it with flowers

by Carlo Rossi

An intriguing floral panel was unveiled in grand style last May in the presence of Imola city officials. The blank wall at the rear of the chapel of Imola's New Civic Hospital had for some time been in need of a facelift.
The Cooperativa Ceramica d'Imola gave it just that as part of its celebration of 120 years in business, inviting designers Giampaolo Bertozzi and Stefano Dal Monte Casoni (Tel. 39-542-640136) to express themselves in ceramic tile.
They created a "blue meadow" measuring 8 meters high by 11 meters wide, blooming with three-dimensional daisies in vitreous tile and crystallized enamel. Mapei was called upon for the installation. First the concrete panel was cleaned with high pressure water jets to remove traces of form release agents. The tiles, which have ribbed backs up to 2 cm thick, were back-buttered and bonded with KERAFLOOR + ISOLASTIC/KERALASTIC*.

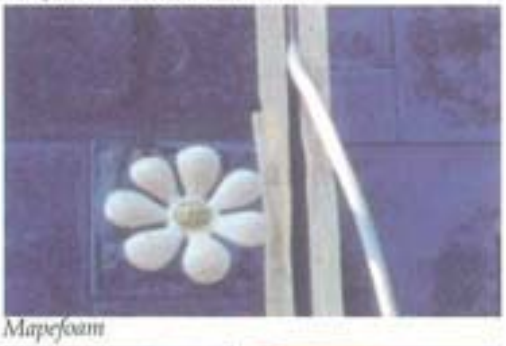
* *in North America*

Relief embossed decorated tiles and others with flowers and pistils on aluminium stems have been applied onto the panel, bonded with ADESILEX PG1

The installation was carried out with KERAFLOOR + ISOLASTIC/ KERALASTIC with double back-buttering (left), the grouts were filled with midnight blue ULTRACOLOR; the expansion joints were first formed with MAPEFOAM and then sealed with MAPESIL AC*

*Keraflоor + Isolastic/Keralastic**

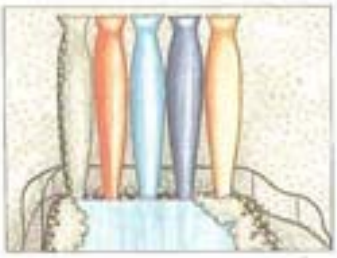
Adesilex PG1

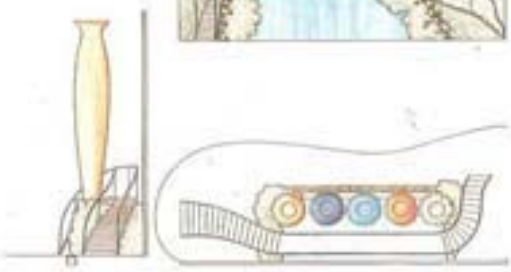


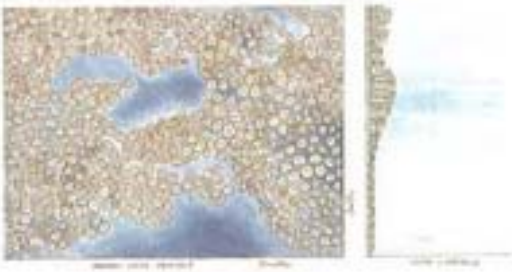
Mapefoam

Mapesil AC

Ultracolor







The combination of these two products offset the thickess of the ribbing which would have been impossible with a conventional adhesive. Moreover, it conferred such elasticity that it guaranteed absorption of movement between the reinforced concrete structure and the ceramic tile facade. After an application of PRIMER FD, vertical expansion joints were filled with MAPEFOAM non-reticulated closed-cell polyethylene foam tubing, then sealed with MAPESIL AC, a flexible sealant which absorbs the expansion of the wall covering. The joints were grouted with midnight blue ULTRACOLOR fast-setting cement grout, which is efflorescence-free and color-fast over time.
The aluminum stems of the daisies were bonded with ADESILEX PG1, a two-part epoxy adhesive which provides perfect structural bonding. The wall tiles (the original design called for a "fountain façade" as can be seen in the design above) were installed by the Cooperativa l'Appenino of Piancaldoli, Florence (Italy).

The technical data sheets for the products mentioned in this article are contained in Mapei binder No. 1 "Setting Materials for Ceramic Tile and Natural Stone"

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EDITOR/DIRETTORE RESPONSABILE — Adriana Spazzoli
ENGLISH EDITING AND TRANSLATION/TRADUZIONE — Michael Kelly
EDITORIAL STAFF/REDAZIONE — Rosanna Brambilla
EDITORIAL ASSISTANTS/SEGRETERIA DI REDAZIONE — Anna Calcaterra, Carla Fini

GRAPHIC DESIGN AND ART DIRECTION/PROGETTO GRAFICO - IMPAGINAZIONE — Magazine - Milano (Italy)
COLOUR SEPARATIONS AND LAYOUTS/FOTOLITO — Overscan - Milano (Italy)
PRINTING/STAMPA — Arti Grafiche Beta - Milano(Italy)

Published and edited by/Direzione e redazione — MAPEI
Via Cafiero, 22 - 20158 Milano (Italy)
tel. 2/376731 - fax 2/37673214

PUBLISHER/EDITORE — MAPEI S.p.A.

RIVISTA BIMESTRALE - Registrazione del Tribunale di Milano n. 363/20.5.1991
BIMONTHLY MAGAZINE - Registered by the Tribunal of Milan n. 363/20.5.1991

Cover main photo: Cubic crystals of calcium aluminate contained in the rapid set binders (magnified 12,000 times). The image was directly obtained by using the Philips SEM XL20 scanning electron microscope in the analytical research laboratories of Mapei in Milan (see article on page 22).

Foto grande di copertina: Cristalli cubici di alluminati di calcio contenuti nei leganti a presa rapida (12.000 ingrandimenti). L'immagine è stata realizzata direttamente dal microscopio elettronico SEM XL20 Philips nel laboratorio di analisi Mapei di Milano (vedi articolo a pag. 22).

55.291 km / 34.357 miles Tony ROMINGER sets the new world 1 hour cycling record

RECORD SETTING PEOPLE AND PRODUCTS

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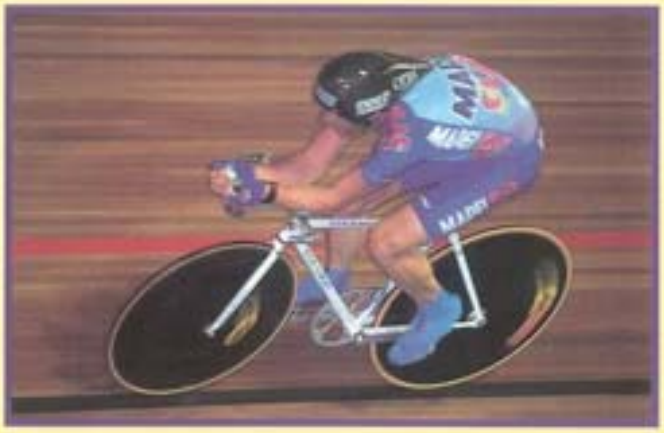

GETTING STARTED

PREPARING THE SUBSTRATE
SCREEDING
MAPECEM

PREPARING THE SUBSTRATE
LEVELING
ULTRAPLAN

PREPARING THE SUBSTRATE
SMOOTHING
NIVORAPID
(PLANI/PATCH)
North America

AFTER 4 HOURS

INSTALLING CERAMIC TILES
GRANIRAPID

AFTER 8 HOURS

GROUTING CERAMIC TILES
ULTRACOLOR

AFTER 12 HOURS

READY FOR TRAFFIC

AFTER 48 HOURS

READY FOR HEAVY TRAFFIC