



WALL COATINGS THERMAL INSULATION





THE MAPEI COLOUR SYSTEM.
UNIQUE TECHNOLOGIES FOR CUTTING-EDGE
PERFORMANCES.

TABLE OF CONTENTS



WALL COATINGS THERMAL INSULATION



Mapei and wall coatings:
a long history of research2



What is a **painting product**? 4



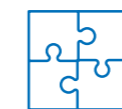
Colour according to Mapei6



Research & Development 8



Analysis and diagnostics.....10



Mapei systems.....14



Mapei technologies and colour16



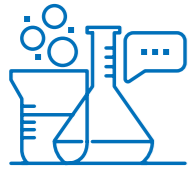
Products: **certifications** and **technologies**.....18



Consultancy and **technical assistance**
applied to colour.....20



Reference projects.....21



Mapei and wall coatings: a long history of research

The story of Mapei starts precisely with colour: in **1937 Rodolfo Squinzi** founded **M.A.P.E.I.**, marking the start of the production of **Silexcolor** silicate-based paint and the first brick of what would become an impressive structure. And since then, there has been a non-stop string of successful products based on research into **solutions to real problems**.

And what makes **Mapei** so unique is the compatibility between building products and coloured coatings, the basis for **fully integrated renovation systems**. Synergic interactions with the ability to overcome whatever problem you encounter on site and to always offer specific solutions.

Technologically advanced and the result of intense laboratory testing, **Mapei** primers, paints and coating products provide protection against the rigours of normal use and aggressive atmospheric agents and have the ability to **overcome every type of problem related to facades and interior surfaces**. A complete range of coatings and colours with **certified performance properties**, perfect for rehabilitating historic buildings or enhancing contemporary architecture.



The Mapei colour facility

In **Mapei's** main production plant, located in Mediglia, the section dedicated to wall coatings occupies an area of 2,000 square metres, with a production capacity in terms of paints and coatings of more than 30,000 tonnes per year.





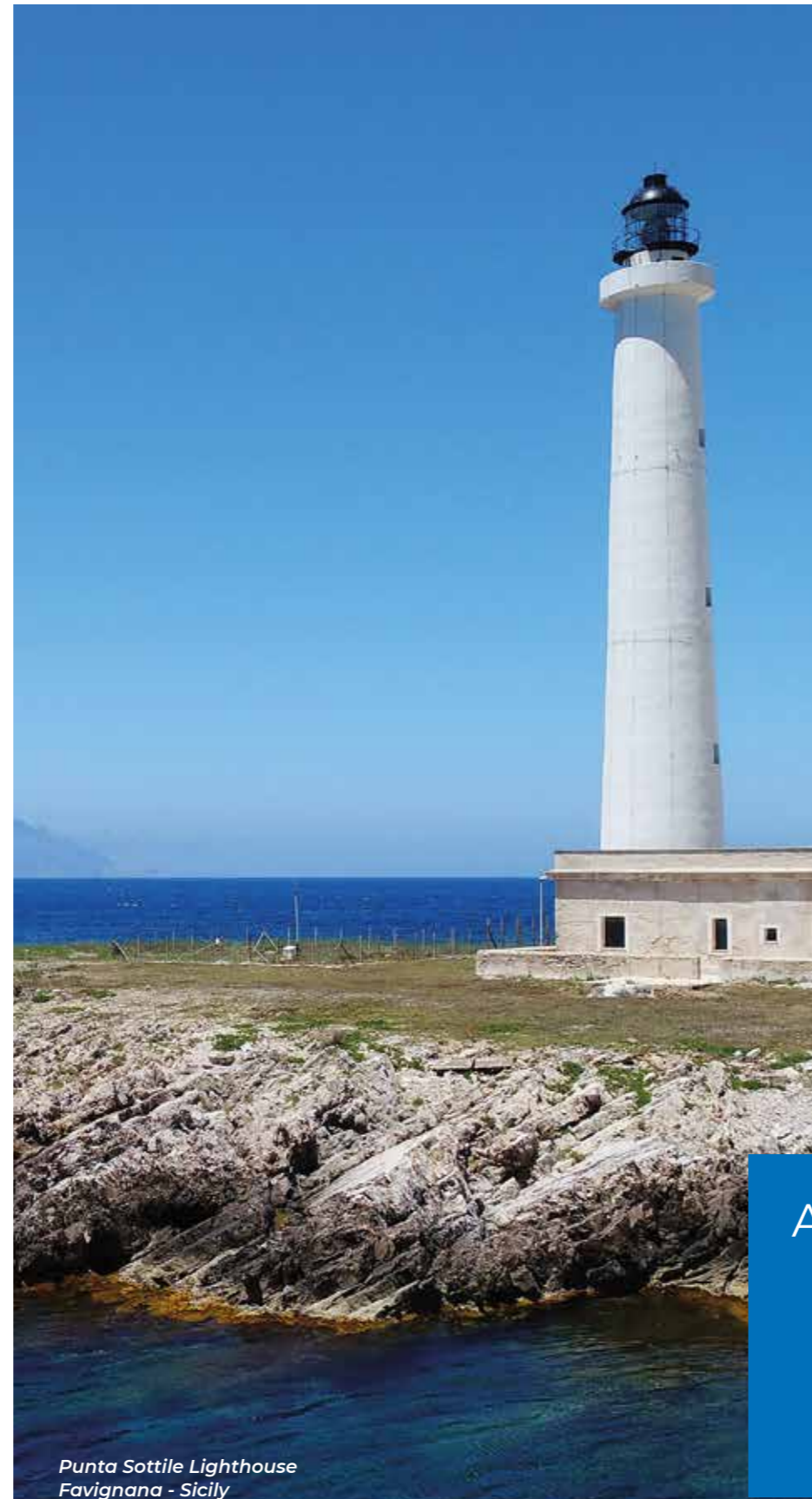
What is a painting product?

Paint is a mainly liquid substance which, once applied on a surface, forms a **continuous, solid film** with **decorative and protective properties**.

Types and classifications

There are thousands of types of painting products available on the market and they are classified according to numerous parameters based on the components they contain, the type of technology adopted and area of application.

There are also many different areas of use: certain paint products are specific for **industrial use** while others are for **use in the construction sector**. And it is for the construction sector that Mapei products are mainly targeted: not only for building new **commercial and residential structures**, but increasingly for **protective coatings on infrastructures** such as bridges, dams and viaducts. Structures that require products with specific functions as well as colour.

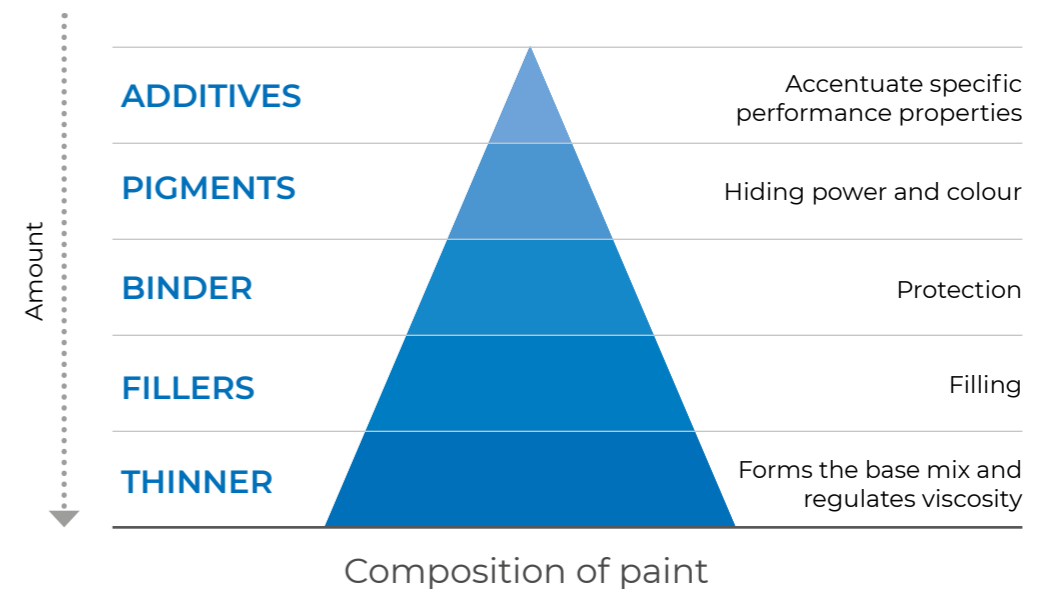


Punta Sottile Lighthouse
Favignana - Sicily

Components

The components used to formulate paints for the construction sector may be divided into **5 large families**.

- **Additives:** usually added in small quantities, they are very important because they provide particular **performance properties to the final product**.
- **Pigments:** these are what give paint its **actual true colour** and determine its level of hiding power.
- **Binder:** consisting mainly of **resins in dispersion**. Ensures a good bond with the substrate and adequate durability over the years.
- **Fillers:** determine the physical and mechanical properties, thickness and surface finish of the paint.
- **Thinner:** gives paint its viscosity and forms the mix base: can be either **water-based** or **solvent-based**.



Advantages of a quality product



GREATER DURABILITY



EVEN FINAL FINISH



LOW DIRT PICK-UP



QUICK APPLICATION THANKS TO HIGH COVERING CAPACITY



Colour according to Mapei

Colour is much more than just a decorative feature and becomes an active part of an integrated application system: **Mapei coatings** interact with the substrate and help improve its durability and resistance. Beauty remains, nonetheless, a mainstay and **Mapei's** approach to colour is like a science. All finishing products are **available in a wide range of shades** thanks to the **ColorMap® tinting system**. Several colour collections are proposed to meet furnishing and design trends. In addition to shades designed for outdoor use and different urban needs, there is also a palette designed for indoor use.



MASTER collection

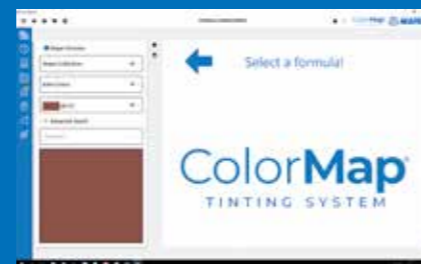
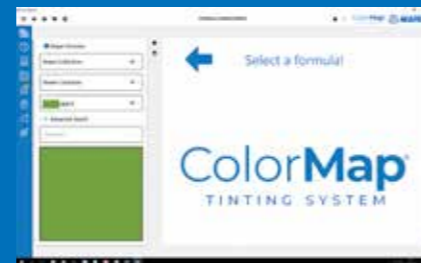
The **Master Collection** is an exclusive range of **1,002 Original Mapei colours** that can be produced with precision and reliability using the **ColorMap®** tinting system. They are all exterior colours with high colour stability, with a choice of shades for both silicate and silicone based systems and a reflectance index suitable for **Mapetherm** systems.



EXtra colour

Mapei's outdoor collection of **315 colours**, divided into **45 colour groups**, each with **7 shades**, from the softest to the most intense. It guarantees a chromatic progression with complete coverage of all the colour areas of the façades.

Advantages of ColorMap®



- Error-free **formulation** of any colour subject to urban planning constraints.
- Precise **reproducibility** of any shade; even takes into account colour variations due to ageing.
- Infinite choice of **shades**, no chromatic limitations.
- **Immediate availability** of product samples in any colour.
- **Quick** order fulfilment without having to stock large product inventories.



INspire selection

A chart of 96 trendy colours for decorating interiors with colour. Contemporary shades selected from **Mapei's** main colour collections to create exclusive chromatic projects.

ColorMap®

Tinting system

Getting the colour you want, in real time is easy with **ColorMap®**, the exclusive **tinting system by Mapei** that makes our colour service complete, efficient, accurate and fast. The range of shades available is practically infinite because, in addition to the shades preset in the system, it is also possible to **read any colour sample** with a special **spectrophotometer** and translate it into one of **Mapei's** finishing products. With **Mapei**, colour knows no limits.





Research and development

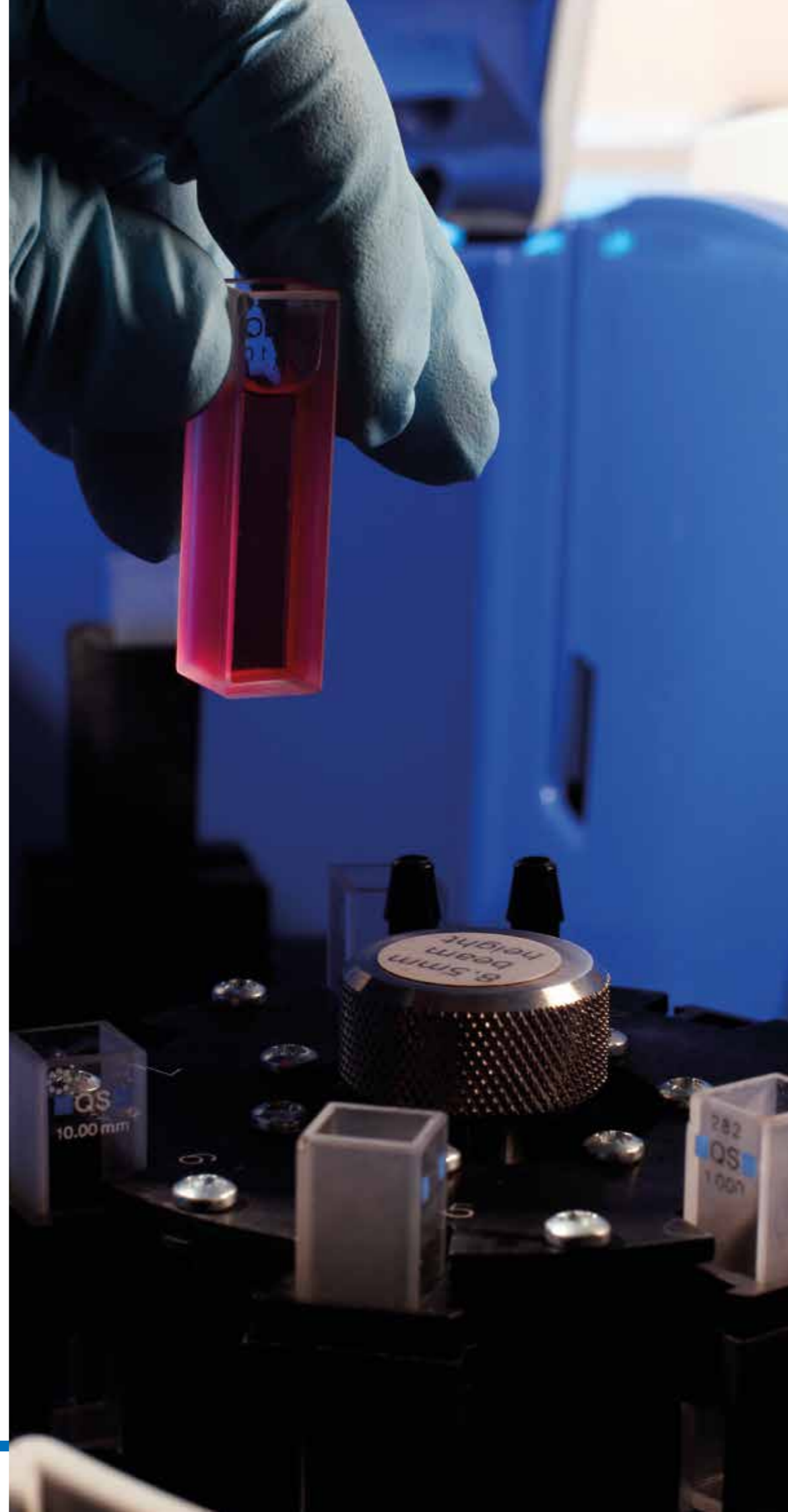
Our laboratories

Mapei has always invested heavily into Research and Development. The Mapei laboratories are the heart of the company and carry out **the development and formulation of definitive products and materials** for the client. They are equipped with the latest, cutting-edge diagnostics instruments and have the support of the **Central Analysis Laboratory** to analyse construction deficiencies, identify the cause of deterioration and verify the effectiveness of suggested solutions.



Standards compliancy

All our repairing and finishing systems come with complete, exhaustive and precise documentation regarding their performance properties, thanks to the use of sophisticated evaluation equipment and an extensive range of testing and measuring instruments. In this way, they comply with the requirements of standards currently applied in any country.



36 research centres in 21 countries

The primary objective of Mapei's commitment to research is to supply users with innovative, safe solutions to improve all aspects of site work, including the most complex, difficult ones. Mapei's research scientists work as part of a global network of **36 R&D Centres**, including our main Corporate Research Centre in Milan, which coordinates the activities of the other 35 laboratories around the world. Equipped with cutting-edge equipment and instruments, the various Centres operate in close synergy and also **collaborate constantly with universities and scientific and industrial research institutes**. The R&D laboratories also provide support to the Technical Services Department to help identify solutions to all the problems and the most complex requirements of our clients, and are flanked by the quality control laboratories of all the Group's **93 production facilities**.

Mapei R&D centres around the world

- | | | |
|-------------|------------------|---------------|
| 8 Italy | 1 China | 1 Mexico |
| 1 Canada | 1 South Korea | 1 Norway |
| 5 USA | 1 UAE | 1 Poland |
| 2 Austria | 3 France | 1 Singapore |
| 2 Germany | 1 United Kingdom | 1 Switzerland |
| 1 Argentina | 1 India | 1 Spain |
| 1 Australia | 1 Malaysia | 1 Colombia |





Analysis and diagnostics

Site and laboratory testing for certain results

Mapei works alongside its clients to help them identify the most appropriate restoration system. In-depth laboratory analysis is backed up by direct site experience. When carrying out diagnostic work, the starting point is samples taken from the site which then undergo rigorous analysis using an **environmental scanning electronic microscope (ESEM)**, **thermogravimetric analysis**, **differential scanning calorimetry** and **infrared spectroscopy** to obtain a certain diagnosis of the structure.

A **complete report on its condition and the cause of the problem** is issued, which is followed up with a **Mapei solution** to cure the problem and maintain the results. And it is these **site tests** that have allowed us to catalogue the solutions which, over the years, have given the most reliable results. A double assessment, in the lab and from a practical application, which enables us to guarantee **stable and durable restoration work over the years**.



Knowing the substrate

Mapei has always taken a particular interest in substrates and analysed the problems they suffer from. Which is why they are always able to offer the most suitable finishing cycle for any situation.



DIAGNOSTICS

Understanding and analysing a substrate enables to identify the cause of deterioration

SAMPLING



Core sampling



Sample

ANALYSIS LABORATORY



X-RAY DIFFRACTION

Mineralogical composition



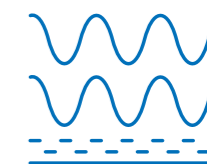
OPTICAL AND ELECTRON MICROSCOPE

Petrographic and colour analysis



THERMOGRAVIMETRIC ANALYSIS AND DIFFERENTIAL SCANNING CALORIMETRY

Carbonate, gypsum, free lime, sulphate and moisture content analysis



INFRARED SPECTROSCOPY

Analysis of organic components



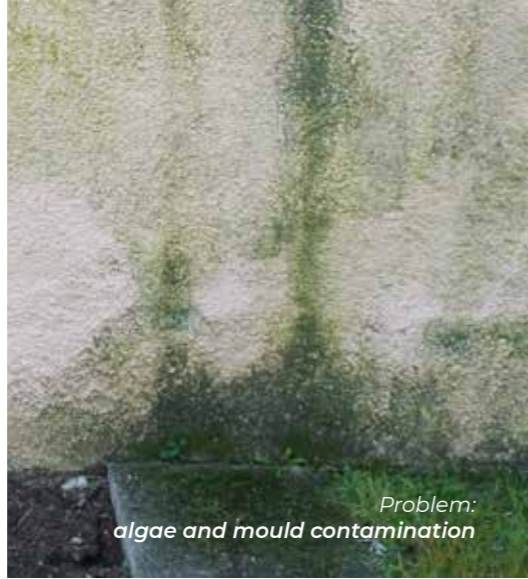
Qualified technical team available to analyse samples and provide assistance and support.



FINAL TECHNICAL REPORT



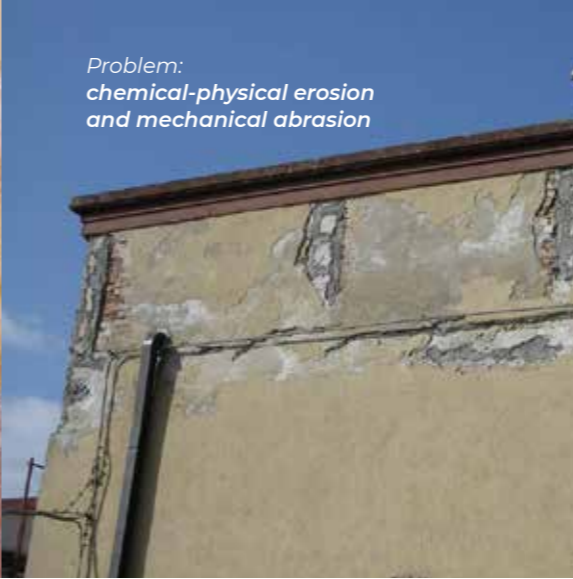
Problem:
concrete deterioration



Problem:
algae and mould contamination



Problem:
rising damp



Problem:
chemical-physical erosion
and mechanical abrasion

Fábrica das Palavras (municipal library)
Vila Franca de Xira - Portugal



Analysis and diagnostics

The concept of “system”

Mapei knows its substrates really well. Thanks to their extensive experience and range of high performance products from the Building Products Line, they are in a position to propose **finishing products as an integral part of a system** in which the various layer products work together in perfect synergy, layer after layer.

RESTORATION MORTARS
AND RENDERS

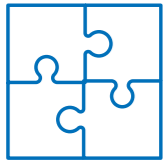
 INTEGRATED
SYSTEM

FINISHING
CYCLE

 PROTECTION

 DURABILITY

 AESTHETICS



Mapei systems

ACRYLIC

Multi-purpose acrylic coatings with high adhesion and filling properties for painting the surface of all types of masonry.



ELASTOMERIC

Permanently elastic coatings for any surface. Provide protection against cracking and carbonation.



SILICONE-BASED

Silicone-based coatings that combine high water-repellence with high breathability.



ACRYL-SILICONE BASED

Highly versatile, water-repellent and breathable hybrid finish.



SILICATE-BASED

Mineral finish for maximum water vapour permeability.

ANTICARBONATION

Anti-carbonation coatings with high colour durability for protecting and decorating the surface of masonry and concrete.



HYDROPHOBIC IMPREGNATORS

Silane-siloxane, hydrophobic finish with high water repellence for colourless protection on exposed coatings.

MULTI-PURPOSE ENAMEL

Water-based enamels for interior and exterior surfaces, specific for protecting and decorating wood, metal and rigid PVC.



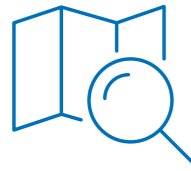
WATER-BASED AND ENAMEL WALL PAINT

High-performance coatings for interior use, quick and simple application.

MAPETHERM

External thermal insulation systems.



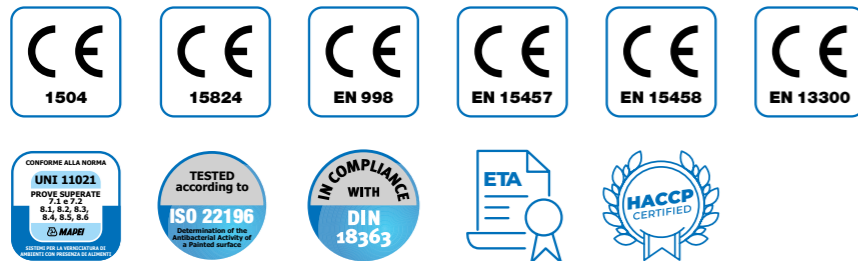


Mapei technologies and colour

In order to be competitive on the global market, **Mapei products** comply with the most severe international standards. Thanks to continuous improvement in terms of performance and formulation, **all the various lines comply with every standard**. Mapei adopts **certified management systems for all quality, environmental and health and safety aspects** which comply with international standards ISO 9001, ISO 14001 and OHSAS 18001. What is more, it **promotes sustainability issues** by subscribing to international programmes and organisations and developing products and solutions that help safeguard the environment and our health.





Certification and CE marking

All masonry coatings are covered by harmonised technical specifications compliant with **European Construction Products Regulation (CPR 305/2011/EU)** and have **CE marking on their packaging and technical support documentation**. Special logos also indicate the reference Euronorm covering the testing and classification of each particular product.




Mapei technology

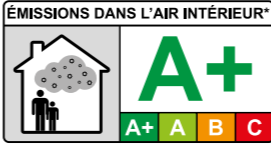
Thanks to their continuous research and development work, **Mapei** has developed products that improve the level of comfort in the environments where they are applied and help safeguard the health of those who use them.

 <p>BIOBLOCK® TECHNOLOGY Innovative technology that prevents the formation of mould.</p>	 <p>DROP EFFECT® TECHNOLOGY Exclusive Mapei technology that reduces absorption of surface water.</p>
 <p>ULTRALITE TECHNOLOGY Makes adhesives lighter: higher yield, less effort and lower impact on the environment from transportation.</p>	 <p>FAST TRACK TECHNOLOGY Fast-setting performing products.</p>


Environmental product certification



GEV
Primers with **EMICODE ECI** and **EMICODE ECI PLUS** certification, for “**products with very low emission of volatile organic compounds**” issued by GEV (a German association that controls emission levels from construction materials), are a guarantee of environmental wellbeing and excellent indoor air quality in our homes.




LOGO SANITAIRE - ÉMISSIONS DANS L'AIR INTÉRIEUR
This is a mandatory label in France on **construction products for internal use**. Similarly to energy rating labels on electrical appliances, this system **certifies the class of a product** (A+ is the best, C the worst) according to its emission of volatile organic compounds (VOC) to help safeguard indoor air quality and, as a result, the health and wellbeing of end users.




EPD
An **Environmental Product Declaration** is a type III declaration according to ISO 14025 which describes the **impact a product has on the environment throughout its lifecycle** and is measured using LCA (Life Cycle Assessment) methodology.

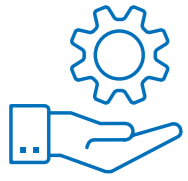
Compliance with environmental building protocols



LEED
LEED v4 **Leadership in Environmental and Energy Design** is an American protocol issued by GBC US which is adopted to certify the sustainability of a building. **Mapei** products play a part in obtaining important credits thanks to their EPDs and products with very low emission levels of VOC.



MEC
MEC (Minimum Environmental Criteria) have been mandatory for all public sector projects since 2017: **Mapei** products comply with the requirements of this protocol.

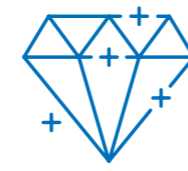


Consultancy and technical assistance applied to colour

Mapei has a continuous and **highly qualified Technical Services Department** available for all their clients, from the initial design phase up to the final execution phase, to ensure the end results always meet expectations.

There is also a team of **Line Specialists** that work alongside clients and construction companies during every phase of a project, from the initial study phase and drafting of technical specifications and detailed technical reports, right up to application on site.

With their support it is always easy to identify the **optimum solution** to obtain the best results.



Reference projects



EVERYTHING'S OK,
WITH MAPEI



HEAD OFFICE
MAPEI SpA
Via Cafiero, 22
20158 Milan
Tel. +39-02-37673.1
mapei.com
mapei@mapei.it