Problem

When carrying out repair work, it is becoming more and more common to use products which have been specially developed to solve specific problems on site. MAPEI's objective is to single out each single problem, carry out a thorough, in-depth analysis to understand their origin and to then supply tools capable of solving them. In the case of repair work, there are numerous critical situations which occur on site. For example, application methods, working times and the cost and quality of labour, which are sometimes difficult to address.

1 Differential absorption (before painting)

2 Differential absorption (after painting)

3 Static micro-cracking

4 Peeling

The most common problems encountered on site are related to:

- ## Micro-cracks
  Static micro-fractures which are sometimes similar to a spider's web, due to the render drying off too quickly or an inadequate cementitious smoothing and levelling layer (see photo 3).
- ## Peeling and "flaking"
  A loss in bond strength and resistance to abrasion typical with old paint (see photo 4).
- ## Differential absorption
  Partial repair work on facades using materials which are chemically different to the original materials, causing colour variations after application (see photos 1 and 2).
- ## Irregular surfaces
  Repairs carried out on different areas of a façade using different cementitious products with different grain sizes which leave an irregular surface finish.
- ## Limited covering of the substrate
  Brightly-coloured paint which sometimes has poor covering capacity and does not completely hide the substrate.
- ## Poor adhesion of the finishing coat
  Excessive compacting of the substrate makes it difficult to apply the finishing layers.
- ## Impossible to use silicate-based finishing products
  Silicate-based products normally need to be applied on substrates which have never been painted in order to form a good bond.

Solution

Base Coat System

Because of the series of problems illustrated above, it is important that systems which integrate perfectly with a wide range of substrates and solve all those problems which arise on facades are available.
And this is the aim of MAPEI's systems for preparing and colouring facades with 3 new multi-purpose base coat products:

Quarzolite Base Coat

Coloured, hard-wearing acrylic resin base paint in water dispersion.

Silexcolor Base Coat

Coloured, modified potassium silicate base paint in water dispersion with high permeability to vapour, according to DIN 18363 Standards.

Silancolor Base Coat

Coloured, high water-repellence silicon resin base paint in water dispersion.

Apart from the special properties obtained from the binder used to produce these products, they also:

- Fill static micro-cracking and micro-fractures
- Even out substrates with different surface finishes
- Allow silicate-based finishing products to adhere well on old paintwork

An example of **Quarzolite Base Coat** applied on a substrate with micro-cracking

- Even out the absorption of surfaces with different chemical and physical properties
- Even out the colour of substrates before applying finishing coats with poor covering properties
- Increase cohesion of old, flaky paintwork (if still well bonded)
- Make it easier to apply even layers of thick-layered finishing products by roughening the surface
- Reproduce a vast range of colours through the ColorMap® automatic colouring system

How to use

Quarzolite Base Coat	Silancolor Base Coat	Silexcolor Base Coat	
Application	various types of substrates: concrete, cementitious and painted	old and new painted render, de-humidifying render, various types of substrates: concrete, cementitious and painted	old and new painted render, de-humidifying render and partially-painted substrates
Application method	by brush, roller or spray		
Dilution rate	5-10% with water		
Consumption	0.4 ÷ 0.5 kg/m^2 per coat		
Waiting time for painting over	12-24 hours		
Packaging	20 kg		

Characteristics

Quarzolite Base Coat	Silancolor Base Coat	Silexcolor Base Coat	
Composition	acrylic resin base in water dispersion	silicon resin base in water dispersion	potassium silicate base in water dispersion
Grain size (mm)	0.3	0.3	0.3
Viscosity (mPa s)	17,000	17,000	18,500
Density g/cm^3	1.680	1.680	1.610
Dry solids content (%)	65	65	65
Vapour diffusion resistance coefficient (μ)	428	300	149
Resistance to the passage of vapour of a 0.15 mm thick dry layer Sd (m):	0.06	0.04	0.02
Capillary action water absorption coefficient W24 [kg/(m^{2}h$^{0.5}$)]	0.53	0.24	0.80

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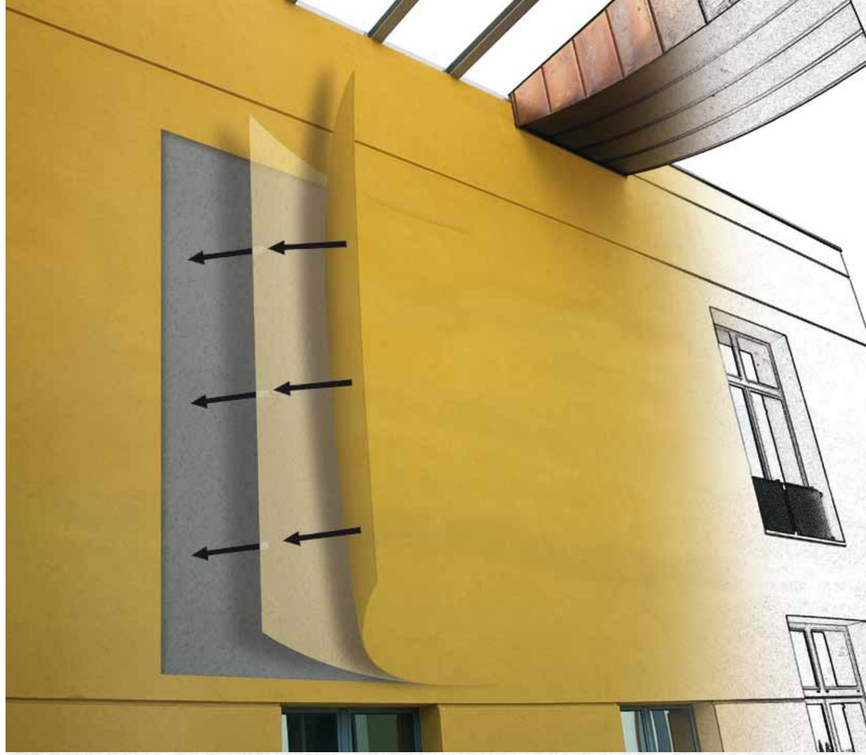
Repair work on the façade of the Petruzzelli Theatre (Bari, Italy) using:
Silexcolor Base Coat and **Silexcolor Paint**

C.P. MK 726030 (GB) (03/11



Base Coat

Coloured base paint in
water dispersion with good filling properties