7624 CCM® ACTIVATED* STONE PROTECTION

*Anti-Mould Coating (SiO_2+TiO_2), suitable for stones and porous painted surfaces.

OUR TARGET: MINERAL OPEN-PORE, SURFACES

CCM® facade protection is a ready-to-use solution for the impregnation of all kind of mineral facades & terraces in outdoor areas.

Especially ideal are open pore and absorbent surfaces, which absorb the coating by their capillary forces and thus lead to an optimal effect.

The application is carried out by means of spraying.

1 litre is enough for 30 – 40 sqm façade!

Specifically, the application is for:

- all facades with mineral paint or plaster.
- and wall & terraces made of brick, concrete, limestone, clinker, granite, marble, quartzite, sandstone, travertine

WHY IS FACADE PROTECTION NECESSARY?

All mineral building materials are conquered by nature over time.
Algae, lichens and moss grow the surfaces and make them look dirty, and can also destroy the asset without taking action:


concrete


natural stone


rough plaster


sandstone


bricks / roof tiles

Consequences:

- Color changes and attack on the surface structure lead to a decrease in the value of the building object.
- Cleaning requires the use of environmentally harmful chemicals and is associated with high costs!

=> Preventive surface protection is necessary!

BEADING EFFECT

Observation:
- On untreated surfaces moisture and dirt penetrate the material.
- This can be seen in the colour intensifying effect of the wet surfaces.

Approach:
- Different materials are sprayed with CCM® 7624 Stone Coating and allowed to dry for 24 hours.
- Then they are moistened with water with the help of a pump spray.

roof tile

treated untreated

limestone

treated untreated

granite

treated untreated

quartzite

treated untreated

⇒ The capillary-narrowing effect prevents moisture from penetrating the material.

⇒ Due to the hydrophobation of the surface, the water pearls off the surface.

⇒ The original colour is preserved and protected once treated!

PROTECTION AGAINST POLLUTION

untreated

CCM® 7624 Stone Coating

Competitive product (market leader)

- The open pore stone absorbs the moisture with the dye.

CCM® 7624 Stone Coating

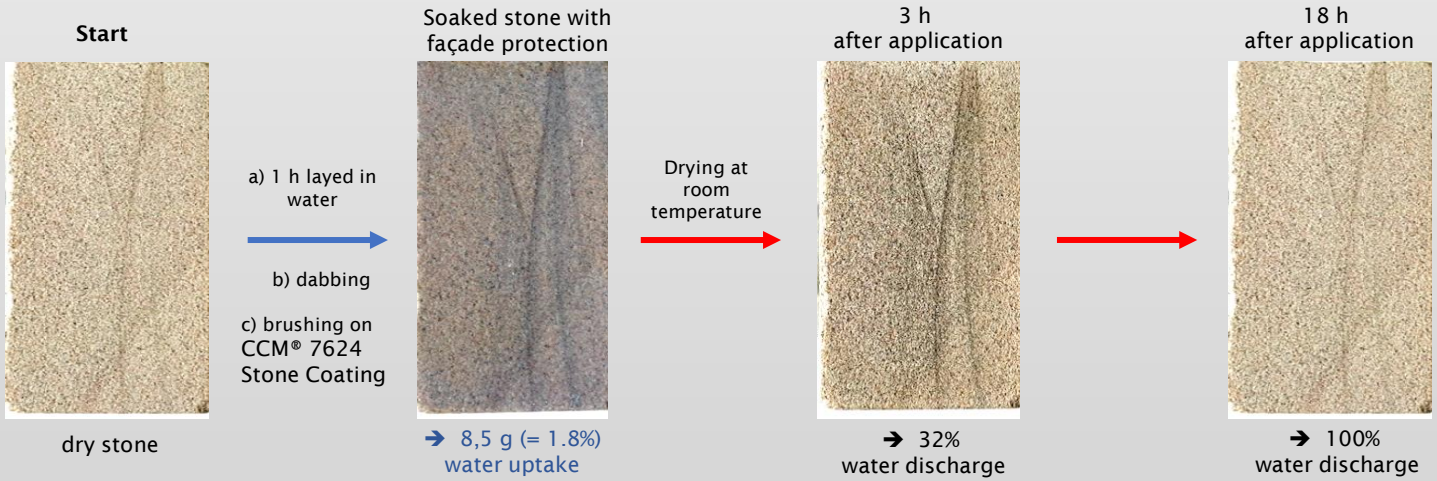
- The capillary tightening effect prevents moisture from penetrating the stone.

⇒ **Surfaces are protected from penetration of dirt!**
⇒ **Surface dirt can finally be removed by cleaning or rainwater.**

DIFFUSION BEHAVIOUR OF THE COATED FAÇADE

Question: What happens if there is increased moisture in the sandstone / façade after water damage and CCM® 7624 Stone Coating is subsequently applied?

Approach: Sandstone is soaked in water for 1 hour, then dabbed with a cloth and finally brushed with CCM® 7624 Stone Coating.



Proof of the hydrophobic functionality of the dried sandstone :

CCM® 7624 Stone Coating

⇒ **The treated surfaces are open to diffusion and allow natural moisture exchange!**

LONG-TERM ANTI-FOULING EFFECT

Test with open-pore limestone in pond water (3 months study in 100% room humidity):

Zone with permanent water contact

On untreated surfaces, moisture & organic particles provide an ideal breeding ground for the growth of algae (green shavings).

Treated surfaces remain clean due to the interplay of capillary uptake retain & beading effect.
⇒No breeding ground for algae!
⇒The limestone looks like new and fresh!

⇒ Treated natural stones are effectively protected against fouling processes!

CONSOLIDATION OF SAND

loose sand solidifies in 6 – 12 hours

hydrophobia + rough surface structure
=> „Lotus effect“

fossils can be conserved

⇒ **Treated surfaces are solidified while retaining the material colour!**
⇒ **Due to the diffusion permeability, it is possible to use it in cellar vaults.**

STABILITY AGAINST ACIDS AND BASES

Tests with limestone:

untreated

CCM® 7624
Stone Coating

+25% HCl
(pH 1)

-> penetration into the stone,
& spontaneous CO_2
formation

+25% HCl
(pH 1)

-> beading effect,
no CO_2 formation!

untreated

CCM® 7624
Stone Coating

+1 n NaOH
(pH 14)

-> penetration into the stone

+1 n NaOH
(pH 14)

-> beading effect!

⇒ **The treated surfaces are protected against corrosive liquids such as acids (acidic rain!) & bases!**

PROTECTION AGAINST SALTWATER

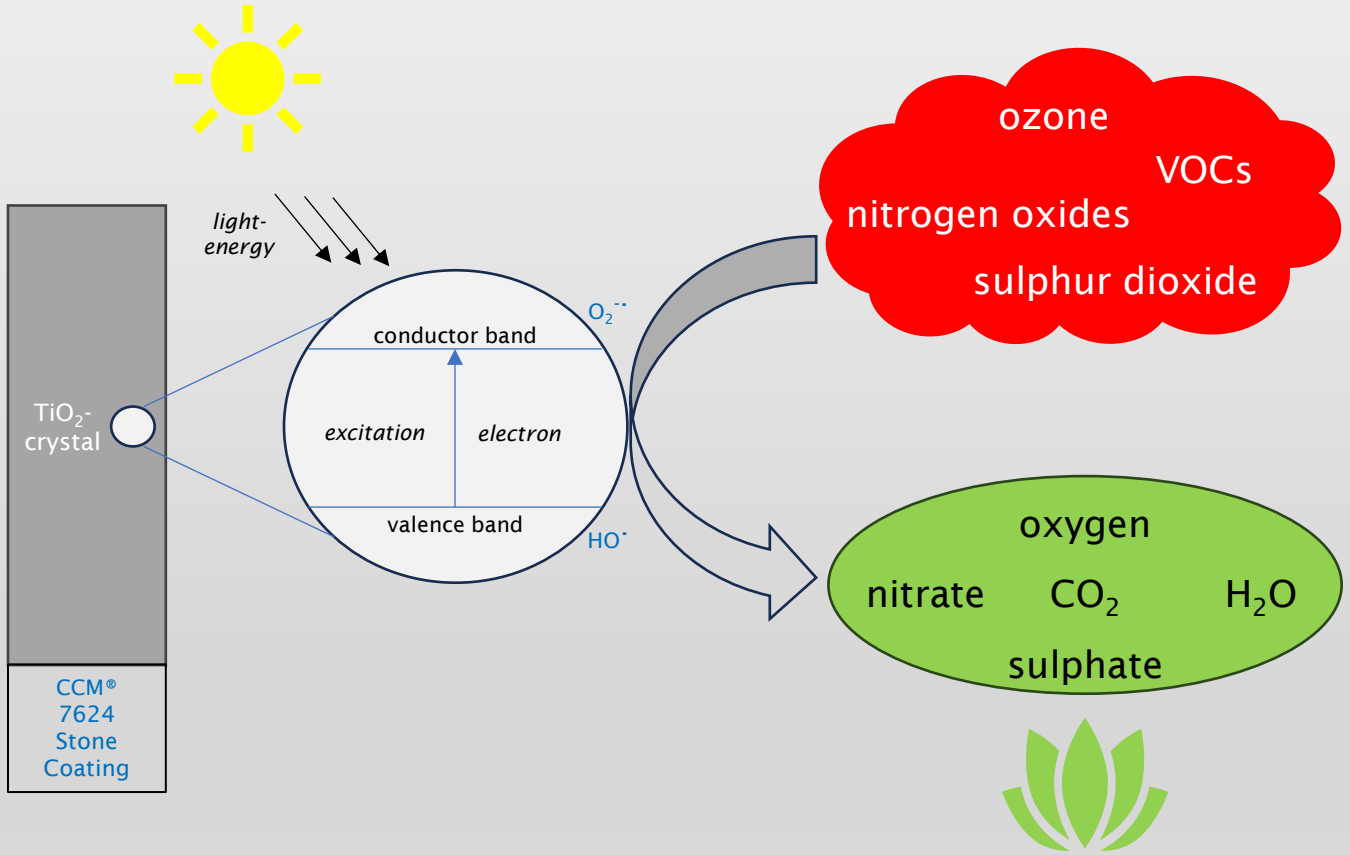
Tests with:

	+5% salt water	**untreated**	+5% salt water	CCM® 7624 Stone Coating
concrete:				
paint facade:				
	➔Salt water penetrates In the stone / paint.	➔The salt crystallizes in the stone / under the paint and damages the facade!	➔beading effect ➔no penetration!	➔Formation of salt crystals on the surface, which can be easily removed.

⇒ **The treated surfaces are protected against salt-water damage!**

PHOTOCATALYSIS (I)

Reduction of air pollutants (acc. manufacturer according to ISO 22197-1, ISO 17168-4, prEN 16980-1, DIN 19279):

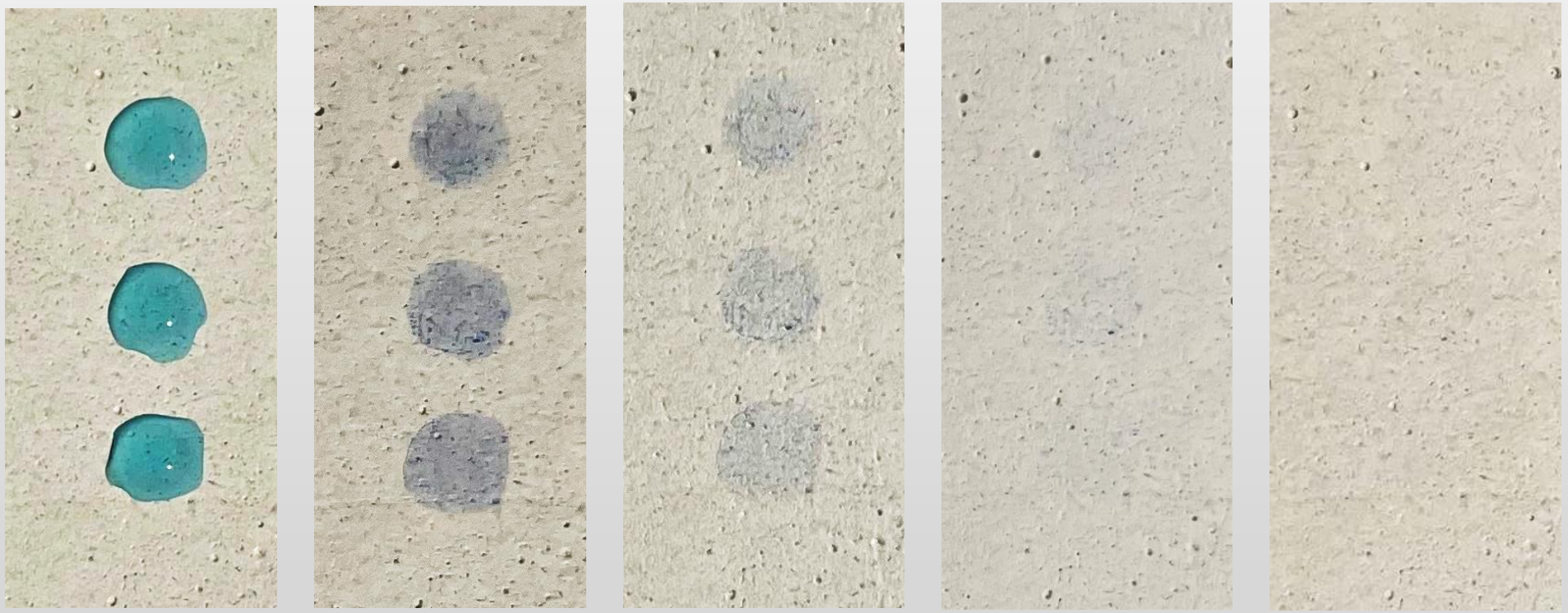


- The photocatalyst titanium dioxide (TiO_2) integrated in the coating is energized under the influence of daylight.
- This produces short-lived oxygen radicals that break down air pollutants such as ozone (O_3), nitrogen oxides (NO_x), sulphur dioxide (SO_2) and volatile organic compounds (VOCs) into environmentally friendly substances.

=> Photocatalysis improves the air quality!

PHOTOCATALYSIS (II)

Methylene blue colouring of an open-porous limestone slab in accordance with DIN 52980:



Start | 1h | 2h | 12h | 24h

=> With the help of photocatalysis dyes are bleached on the surface!

PROTECTION AGAINST NATURAL POLLUTION

Wet leaves fall on an open-pored limestone slab (1).
Appearance after 2 days of rain and wind (2), and finally after returning sunshine on day03 (3).

competitor product | CCM® 7624 Stone Coating

competitor product | CCM® 7624 Stone Coating

competitor product | CCM® 7624 Stone Coating

⇒ **Highly sensitive stones are protected against natural pollution from the environment.**

⇒ **This is ensured by the combination of rain / mild cleaning and photocatalysis.**

PROTECTION AGAINST FOOD COLOURS

- An open pore limestone slab is soiled with ash, coffee, ketchup & mustard (1).
- After drying for 18 hours, the plate is first cleaned with water and a hand brush (2), and then left in the sunlight for 3 hours (3), and 24 hours (4).

Soiling

after brushing

after 3 h in the sun

after 24 h in the sun

⇒ **Sensitive stones are protected very efficiently against the ingress of food dyes.**

⇒ **Soiling can be removed with mild & environmentally friendly cleaners.**

⇒ **Remaining paint residues are resolved with the power of photocatalysis.**

COFFEE-TEST

⇒ **Even open-porous materials are protected against discoloration with organic dyes!**

APPLICATION: URINARY PROBLEMS („WILD URINATION“)

CCM® 7624 Stone Coating:

⇒ Urine peels off and is prevented from entering the stone.

⇒ The development of the typical “urinary odour” is thus prevented.

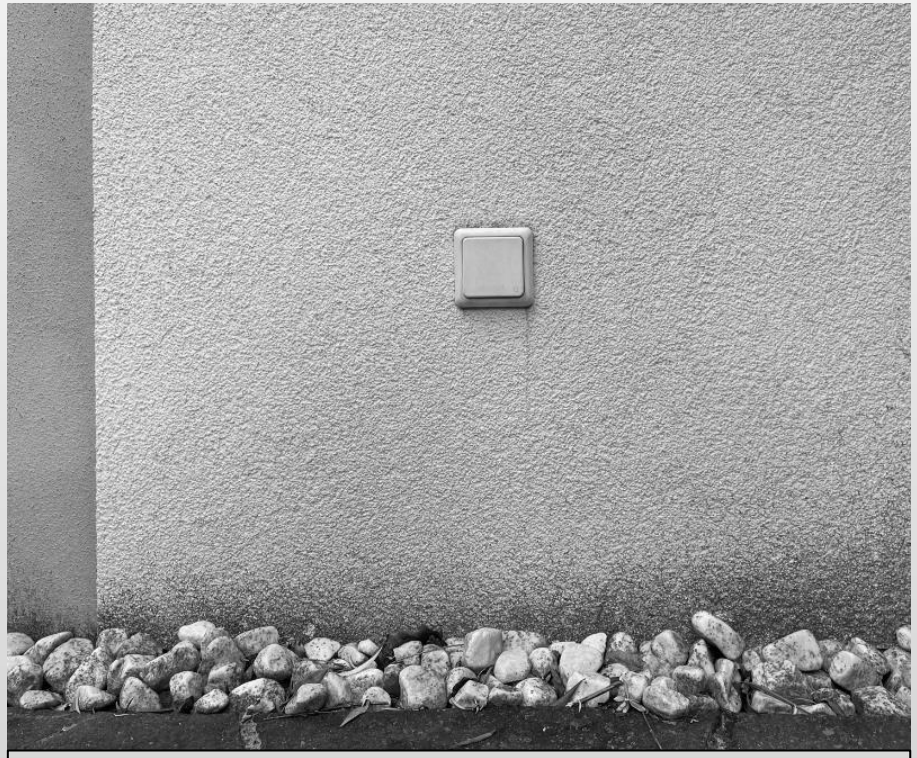
Untreated:

⇒ Urine moisturizes the stone and penetrates deep into it.

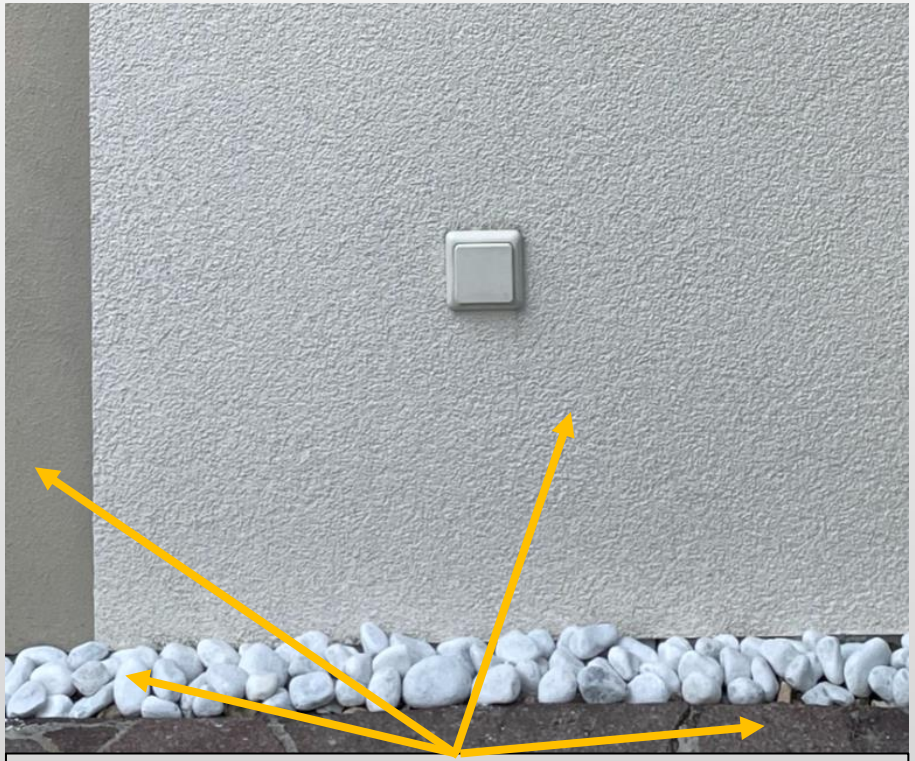
⇒ As a result, an unpleasant “urinary odor” develops.

=> The treated surfaces are permanently protected against urine!

LONG-TERM FACADE PROTECTION



On untreated facades, moisture, mineral dust and organic particles provide an ideal breeding ground for the growth of algae (green shavings), moss and lichens.



Treated surfaces remain clean due to the interplay of beading effect & photocatalysis.
⇒No breeding ground for algae, moss and lichens!
⇒The object looks like new and freshly painted!

=> Treated surfaces are protected from fouling!

CCM®

7624 Activated Stone Coating

Properties:

- 30 – 40 sqm / L spray application
- very fast drying and entry of the protective function
- capillary tightening effect & hydrophobation
- strong beading effect
- solidifies sandy surfaces
- water vapor permeable
- guaranteed color fastness
- protects against acids & bases (pH 1 – 14)
- resists acidic rain and salt water
- anti-odour (*e.g.* urine)
- **photocatalytic active**
  - bleaches organic stains
  - helps to reduce air pollutants (e.g. H_2S, NO_x, Ozon & VOCs)
- prevents the growth of algae, moss & lichen
- allows cleaning with mild cleaners
- higher proportion of active ingredients compared to the competition

ARCHITECTURE

Dives in Misericordia, Rom

Landscaping

Cellar vault restoration

Monument protection