

Rurecoat 1

Resin based anti carbonation corrosion protector

Product description

RURECOAT 1 is a single component paint in aqueous dispersion based on high reticulation resin, used for the superficial impregnation of concrete.

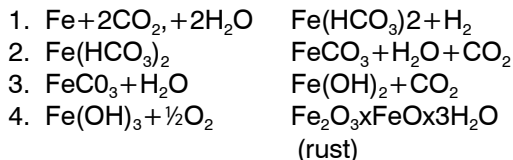
Its special formula based on an acrylic resin protects concrete from carbonation by preventing the penetration of CO₂ and other aggressive gases through the porous surface and concrete micro-cracks.

What is carbonation?

The most common cause for the corrosion of concrete reinforcement is the reduction of alkalinity by the carbon dioxide contained in the atmosphere (CO₂).

The hydrated Portland cement mix consists of 20% hydrated lime Ca(OH)₂, which constitutes an alkalinity reserve for the protection of the bars. Carbon dioxide penetrates into concrete and reacts with the hydrated lime transforming it into calcium carbonate. In this way, the pH drastically changes from 13 to 10. Under these conditions the reinforcement bars lose the protective layer of iron oxide.

The chemical reactions are as follows:



The initial acid ferrous carbonate Fe(HCO₃)₂ converts into neutral carbonate FeCO₃, then, because the water content, the latter transforms into ferrous hydroxide and carbon dioxide, which returns in cycle to attack the iron. When there is an excess of oxygen Fe(OH)₂ it transforms into Fe₂O₃ · xFeO · 3H₂O.

The volume of the rust thus formed exceeds that of the initial products.

The increasing stress of the cement mix exceeds the tensile strength of concrete provoking the crumbling of the concrete layer; this is how concrete starts deteriorating.

Typical applications

RURECOAT 1 is a highly reliable and easy to use product. It is an optimum surface anti-carbonation treatment for:

- civil works: concrete pre-cast structures, exterior concrete masonry or cement based plaster;
- road works: bridges, viaducts, tunnels;
- different types of works too much exposed to the aggregation of gas.

Storage, dosage, yield

- RURECOAT 1 is supplied in 15kg buckets;
- store the product in closed containers between +5°C and +30°C;
- dosage may vary from 0.2 to 0.5 kg/m², depending on the absorption capacity of the support.

Use recommendations

a) Surface preparation

Any surface to which RURECOAT 1 is to be applied must be carefully cleaned with a wire brush, sand-blasting or pressure water jets until thoroughly clean and firm. If necessary, use a suitable cement mortar (EXOCEM series) to improve the surface.

b) Laying

Once the surface is perfectly firm and dry apply a first coat of RURECOAT 1 diluted with 10-20% of water (e.g. 1 kg of RURECOAT 1 + 100-200 g of water).

After 24 hours apply a second coat of RURECOAT 1. Under favourable atmospheric conditions the time period between the first and second coat may be less than 24 hours.

c) Application method

RURECOAT 1 may be applied by-brush, spray or roller, though it is advisable to apply the first coat by brush or roller.



Rurecoat 1

Resin based anti carbonation corrosion protector

d) Tools cleaning

All mixing and application tools should be cleaned immediately after use with water. If the product were dry use a nitro based thinner.

e) Handling

Being a water based product, RURECOAT 1 does not need special storage and handling precautions.

f) Influence of the temperature

Never apply the product when the temperature goes below +5°C.

Do not use for

- a) When further paint treatments should be applied;
- b) on tramplng areas such as pavements.

Surface quality and finish

RURECOAT 1 forms a film of grey cement colour which does not alter the natural aspect of concrete.

Properties

The application of RURECOAT 1 on concrete has the following advantages:

- complete and long-lasting protection of concrete;
- high impermeability to carbon dioxide;
- easy to use and optimum workability;
- high permeability which allows the passage of water vapour.

Technical data

Aspect:	Grey cement colour paint
Binder:	Acrylic resin
Viscosity:	10.000 cps \pm 10%
Dilution solvent:	water
Drying time (at + 20°C):	6 hours

Revision 01/2009. The present edition cancels and replaces all the previous ones. The information contained in the present technical data sheet is based on our knowledge and experience and should therefore not be taken as our guarantee. Neither shall we be responsible for the utilisation of the product since the conditions under which it is used are beyond our control

Ruredil S.p.A.

Headquarters and plant: Via B. Buozzi, 1 ; I-20097 San Donato Milanese – Milan (ITALY)

Phone: +39.02.5276041 Export dept.: ext. 1255 – Fax: +39.02.5272185 e-mail: info@rurcem.it website: www.ruredil.it

Abroad: Algeria, Austria, Canada, Central, South America and the Caribbean, Cyprus, France, Greece, Iran, Morocco, Poland, Portugal, Romania, Russia, Spain, Switzerland, Tunisia, Turkey, Ukraine, U.S.A.

