

CRAKGON® paint reinforcing tissue

CRAKGON is a reinforcement for interior and exterior paint films and other coating compounds. It prevents the reappearance of fine plaster cracks, consolidates friable plaster surfaces, and was specifically designed and developed to permanently repair and prevent humidity related problems.

CRAKGON reinforced surfaces outlast non-reinforced surfaces by many years, according to independent tests conducted by the National Building Research Institute of the Council for Scientific and Industrial Research (Pretoria, South Africa) and by the Quality Control Labs at Lacose Sotinco / CIN (Porto, Portugal).

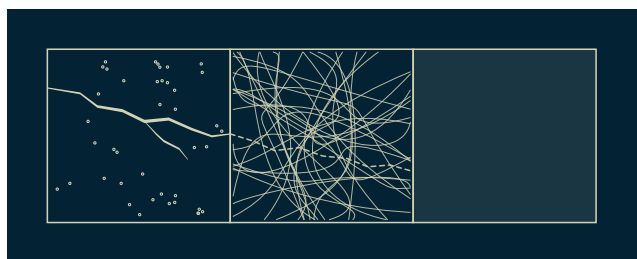
KEY ADVANTAGES

- ✓ Resistance to cracking
- ✓ Resistance to moisture
- ✓ Flexibility
- ✓ Durability
- ✓ Resistance to UV
- ✓ Weathering barrier
- ✓ Enhanced adhesion

What it is

CRAKGON is an ultra-light, non-woven tissue of randomly dispersed, continuous, chemical resistant C-glass fibres. The fibres are bonded to one another by a binder that is fully compatible with emulsion and solvent-based coating systems, including acrylic water-based and oil-based paints. Its low binder content gives it the flexibility to follow corners, joints and complex shapes, on vertical and horizontal surfaces.

The C-glass resists acids, alkalis, hydrolysis and abrasion. The fibres are chemically inert and fireproof, do not rot or lose strength, and do not allow microorganisms to grow. The binder is stable, permanently flexible and non-yellowing under extended UV exposure.



The wall

Cracked, and prepared.

CRAKGON

Painted through, in the first coat.

Final coat

It can be another paint or colour.

A cracked wall from the front, built up from left to right. Not to scale.

Technical data

Specification	DIY: PR10, PR	Pro: C50N, C50W, C100	Test method
Mass	22 g/m ²	25 g/m ²	DIN 29073-1
Fibre diameter	10 µm	13 µm	N/A
Glass type	C chemical resistant glass	ECR chemical resistant glass	DIN 1259, EN 13496
Binder compatibility	Emulsion and solvent-based coating systems		N/A
Binder content (loss on ignition)	12.5%	7%	DIN EN 13820
Thickness	0.23 mm	0.23 mm	N/A
Tensile strength, machine direction	700 N/50 mm	over 900 N/50 mm	EN 13496
Tensile strength, cross direction	500 N/50 mm	over 900 N/50 mm	EN 13496
Moisture content, maximum	0.2%		DIN EN 12127

Nominal values, from the manufacturer's 2024 catalogue. These products are articles under Regulation (EC) No 1907/2006 (REACH), are not classified as dangerous, and need no labelling under the CLP Regulation (EC) No 1272/2008.

CRAKGON solves humidity and damp problems other solutions can't

Humidity is behind most of the problems found on walls today: cracking, efflorescence, mould and mildew, and the gradual breakdown of the wall itself. This part covers what causes it, why the common solutions fail, and how CRAKGON works against it.

Understanding humidity and its causes

How water gets into a wall

Rain and snow, building materials that hold a high level of moisture, and condensation from the air all bring water to a wall. It gets in through cracks, delaminations, the fine gaps between bricks and mortar joints, and faulty joints. Two forces push or draw it through: capillary absorption, in porous and permeable materials, and osmosis, where water with a low salt concentration moves towards water with a higher one.

Cracks speed this up greatly. As water runs down through them, it absorbs the less stable salts and corrosive elements in the sand, cement and bricks. At the base of the wall it is concentrated in salts and acids, and the salts surface as efflorescence. Rain and moisture on the outside of the wall are then drawn in by osmosis, towards those pockets of concentrated water.

Water and humidity in a wall also bring mould, which poses serious health concerns, and deterioration of the wall itself, to the point of rupture and collapse.

Weather and the paint film

Water penetration, temperature swings and the restricted, often opposing movements of the different parts of a wall cause most of the problems found on walls today. A wall saturated with water cracks far more readily under thermal movement, and weakens progressively. Water causes dimensional instability, which can lead to the corrosion of steel reinforcement in concrete walls and the breakdown of waterproofing systems, and it brings efflorescence and poor indoor air quality from mould and mildew.

Walls of today

Contemporary walls average only 75 to 90 mm thick, and extended roofs that protect the walls below are less used, especially on high-rise buildings. Larger surfaces are exposed, and more water runs down them. Rooftops, terraces, balconies and expansion joints that are not properly waterproofed are also weak points.

Good drainage and limiting a wall's exposure to water are part of the solution. Most important is to stop the water that reaches the wall from getting in. CRAKGON does this by permanently covering wall cracks.

Adapted from material hosted by A. Sebastian Engineering and Investigation Services, part of its masonry resources and bibliography.

Common solutions, and why they fail

Solution	What happens	CRAKGON
Paint alone	The most popular solution, and a quick one: most symptoms are masked for a small outlay. The problem returns as the paint film loses its flexibility and cracks, faster on exterior walls in UV light, and the film can no longer follow the wall's thermal movement.	Extends the life of the paint film and prevents surface cracking.
Ceramic, marble and granite veneers	They avoid frequent repainting, at a far larger outlay. The materials are porous and permeable: they absorb water and become highly thermally conductive.	Provides a waterproof seal.
Waterproofing membranes	Bituminous membranes seal whole walls against water, and the wall can no longer breathe and release the moisture from condensation, rain and drainage. The wall and the membrane both decay. Some rubberised paints do the same.	Allows the wall to breathe.

How a paint film fails, and what CRAKGON changes

	Without reinforcement	With CRAKGON
Chalking	UV rays decompose the paint film.	Chalking is limited to where it reaches the CRAKGON membrane.
Erosion	Wind, rain and dust erode the paint film over time.	Each fibre is encapsulated in paint, and erosion is limited to the outer layers. Once a fibre is exposed, it still reflects the colour.
Ageing	Small cracks develop across the surface of the paint film.	Avoided by the resin-rich reinforcement fibres.
Peeling	The paint film loses its elasticity and peels off as it breaks away from the substrate.	The fibres reinforce the paint film as steel rods reinforce concrete, and it keeps its plasticity.

How CRAKGON works

Sand, or silica, makes up two thirds of a cement or plaster render, and two thirds of glass. The binder in CRAKGON is fully compatible with the resins in paint. CRAKGON adheres to both the wall and the paint film, and the three form a composite.

The wall and the paint expand and contract at different rates. In the composite those movements are equalised: CRAKGON moves with the wall and gives the paint film dimensional stability. In the manufacturer's laboratory results, CRAKGON reinforced paint film has ten times the tensile strength of unreinforced paint film, and three times that of the CRAKGON tissue itself.

The glass fibres work as the steel-rod grid works in concrete, adding durability and preventing the reinforced paint system from cracking. A single layer of CRAKGON and paint gives an impermeable, highly abrasion resistant, hygienic and long lasting protective barrier which, most importantly, allows the wall to breathe.

The industry recommends a dry paint film of about 300 µm. Three coats of unreinforced paint, at about 60 µm each, give about 180 µm. A CRAKGON reinforced system reaches 300 µm in three coats, or two with a textured paint.

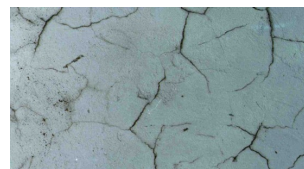
Lab tested to last

A decade-long field test by the National Building Research Institute of the CSIR, Pretoria, South Africa, exposed paint systems with and without CRAKGON on a plastered wall displaying severe shrinkage cracking. Its conclusions, from the CSIR's Division of Building Technology:

1. In all the systems used, the finishes that incorporated CRAKGON proved superior to those that did not.
2. While the incorporation of CRAKGON in a coating system results in more paint being required, the effect is that the system remains satisfactory for a longer period.

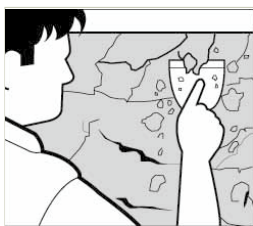


Plaster exposed for 10 years with a CRAKGON reinforced paint system.

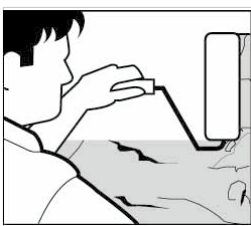


Plaster exposed for 10 years without a reinforced paint system.

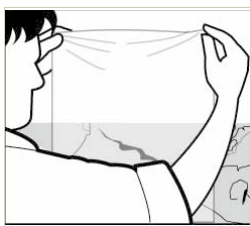
Method of application



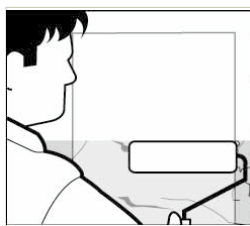
1 Prepare the surface: fill major cracks, remove loose or flaking paint, and smooth down.



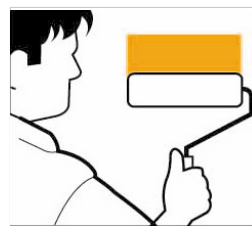
2 The surface must be clean, dry and free of dust. Apply a horizontal strip of paint at the top of the surface, from which to hang CRAKGON.



3 Stick CRAKGON to the wet, painted strip. Make sure the drop is vertical and even. Smooth CRAKGON against the dry surface.



4 Apply a generous coat of paint through CRAKGON. This sticks CRAKGON to the wall. Repeat steps 2 to 4. For best results, do not overlap succeeding drops.



5 Once the first coat has dried, the fibre pattern of CRAKGON is visible. Apply a final coat of paint, which may be of a different quality or another colour.

Health and safety

CRAKGON is not hazardous to health. It is made from continuous monofilament glass fibres more than 6 micrometres in diameter, which are classified as non-respirable. No protective clothing is necessary when handling it. People with very sensitive skin may feel a slight, temporary irritation, which washing with soap and cold water relieves.

Storage and use

Store in cool, dry conditions. The customer is responsible for the suitability of the product for its particular end use. Specifications are subject to change.

Rolls supplied by Hume Internationale

Hume product	Manufacturer's code	Width	Length	
CRAKGON PR2	PR	500 mm	20 m	DIY
CRAKGON PR3	C50N	500 mm	100 m	Pro
CRAKGON PR4	C100	1000 mm	100 m	Pro

The manufacturer's PR10 (100 mm by 20 m) and C50W (1000 mm by 50 m) are supplied on request. CRAKGON uses at least a third more paint, depending on the surface texture and the roller used.



CRAKGON being applied.