

A low-angle, upward-looking photograph of a cable-stayed bridge. The bridge's concrete deck and support structure are visible, with numerous white cables fanning out from a central point towards the top of the frame. The background is a clear, bright blue sky. The image is used as a background for the entire page, with a dark blue overlay on the left side containing the text.

BUILDINGS AND STRUCTURES

HIGH-PERFORMANCE
SOLUTIONS

CONCRETE

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CIN

WHO WE ARE

CIN's history is marked by innovation, quality, cooperation and leadership.

Intimately committed to excellence in supplying products and services, CIN's mission is to provide the best solutions with the best team in the market, meeting customers' needs and assuming a leading position.

Focused on a continuous improvement of knowledge and efficiency of processes, CIN can be proudly described on the following numbers:



+ 100
years of experience



400 Millions €
turnover 2024



1.800
employees



10
production sites



+ 25
years of leadership
in the Iberian market



4
business units



+190
specialized technicians



8 R&D
centers

CIN operates in four main market segments: Construction, Yachting & Marine, Industry and Protective Coatings – the last two segments under "CIN Performance Coatings" branding.





The **best solutions**
with the best team.

BUILDINGS AND STRUCTURES

CIN SOLUTIONS

Technological progress combined with social and environmental awareness in various areas has led to a constant search for knowledge, resulting in a growing level of demand in all sectors and, as such, also in the building and construction process.

Concrete structures are an integral part of major engineering works - bridges and viaducts, tunnels, public buildings such as schools, hospitals and laboratories, or even car parks - and are subject to different stresses depending on their environment.

In order to meet the numerous and rigorous requirements of the market, CIN Performance Coatings presents solutions that compromise between functionality and sustainability, for the protection of concrete structures against the ingress of aggressive agents, in order to avoid or minimise their degradation, complying with the mandatory requirements of European standard EN 1504-2.

CIN Performance Coatings for concrete combine protection and structural safety with the aesthetics and harmony of your project.



CINGARD®

The CINGARD® product range includes various options for protecting and waterproofing concrete, from hydrophobic impregnation solutions to seamless, continuous coatings with good mechanical and chemical resistance.

C-CRYL®

Including primers, paints and varnishes, the C-CRYL® range covers a multitude of solutions for the comprehensive protection of concrete structures, depending on their performance requirements. All C-CRYL® products have excellent anti-carbonation properties for concrete.

C-POX®

In the C-POX® range you'll find the CIN solution specially developed for lining and protecting tunnels. As it has the advantage of resulting in a continuous, seamless surface, it is an excellent alternative to ceramic tiles.



All **CIN** solutions for
CONCRETE are
CE marked.

BUILDINGS AND STRUCTURES

CIN PRODUCTS

HYDROPHOBIC IMPREGNATION

- CINGARD® HI900

VARNISH COATING

- C-CRYL® SEALER W500
- C-CRYL® VARNISH W530 MATT

PAINT COATING

- C-CRYL® W680 MATT
- C-CRYL® W720 HB
- C-CRYL® W690 FLEX
- C-CRYL® S600 HB
- C-POX® W210 HB

CIN Performance Coatings solutions are available in a wide range of colours, in a simple, quick and easy way.

Get to know all the CIN solutions identified within this catalog, by the tinting system in which they are integrated:

COLORMIX^{4G}







HI900

Hybrid silane-siloxane hydrophobic impregnation.

Features:

- Matt finish
- Single-pack product
- Solvent-based
- Does not form a film and doesn't change the original appearance of the substrate
- High water vapour permeability
- Fire retardant

Ref. 7P900



Excellent repellency
to water and water-
soluble pollutants



High penetration
power



High impermeability
to chloride ion



SEALER W500

Water-based acrylic sealant for concrete.

Features:

- Mandatory use in the varnishing system with C-CRYL® VARNISH W530 MATT
- Single-pack product
- Water-based
- High impermeability to carbon dioxide and liquid water
- High water vapour permeability
- Fire retardant with low smoke emission and no falling droplets and/or ignited particles

Ref. 12500



VARNISH W530 MATT

Water-based acrylic varnish for concrete.

Features:

- Matt finish
- Single-pack product
- Water-based
- High impermeability to carbon dioxide and liquid water
- High water vapour permeability
- Fire retardant with low smoke emission and no falling droplets and/or ignited particles
- Not recommended for flooring

Ref. 12530

COLORMIX^{4G}



High penetration power



Fast drying

low VOC

Low organic solvent content



Excellent anti-carbonation properties for concrete



Fast drying

low VOC

Low organic solvent content



Doesn't stain when in contact with water



Good weathering resistance



Wide colour availability and also a clear version



W680 MATT

Water-based acrylic coating for integral concrete protection.

Features:

- Matt finish
- Single-pack product
- Water-based
- High impermeability to carbon dioxide and liquid water
- High water vapour permeability
- Fire retardant with low smoke emission and no falling droplets and/or ignited particles

Ref. 12680



W720 HB

Water-based acrylic coating for integral concrete protection.

Features:

- Satin finish
- Single-pack product
- Water-based
- High impermeability to carbon dioxide and liquid water
- High water vapour permeability
- Fire retardant with low smoke emission and no falling droplets and/or ignited particles

Ref. 12720



	Excellent anti-carbonation properties for concrete		Wide colour availability
	Low organic solvent content		Very good resistance to weathering
	LEED v4: meets requirements		Indoor Air Quality: A+ Class

	Excellent anti-carbonation properties for concrete		Wide colour availability
	High impermeability to chloride ion		Very good resistance to weathering
	Low organic solvent content		

* Information on the emission level of volatile substances into indoor air, presenting a risk of toxicity by inhalation, on a scale ranging from A+ (very low emissions) to C (high emissions).



W690 FLEX

Water-based acrylic coating with elastic properties for integral concrete protection.

Features:

- Matt finish
- Single-pack product
- Water-based
- High impermeability to carbon dioxide and liquid water
- High water vapour permeability
- Fire retardant with low smoke emission and no falling droplets and/or ignited particles

Ref. 12690



S600 HB

Solvent-based acrylic coating for integral concrete protection.

Features:

- Matt finish
- Single-pack product
- Solvent-based
- High impermeability to carbon dioxide and liquid water
- High water vapour permeability
- Fire retardant with low smoke emission and no falling droplets and/or ignited particles

Ref. 54600



	Excellent anti-carbonation properties for concrete		High concrete crack-bridging capacity, even at negative temperatures
	Low organic solvent content		Very good weathering resistance

	Excellent anti-carbonation properties for concrete		Wide colour availability
	Very good weathering resistance		



All over the world, there are many landmark projects in which CIN Performance Coatings' C-CRYL® range of products are present.

Whether it's buildings, bridges and viaducts or concrete tanks, C-CRYL® solutions are the answer to situations where high-performance products are required.

- **Luiz I Bridge, Porto, Portugal**
- **Infante Dom Henrique Bridge, Porto, Portugal**
- **Mosteirô Bridge, Douro River, Portugal**
- **International Bridge Vila Nova de Cerveira - Goian, Portugal - Spain**
- **Savoy Palace Hotel, Funchal, Portugal**
- **Carabanchel Library, Madrid, Spain**
- **Edgar Cardoso Bridge, Portugal**
- **Amarante Viaduct, Amarante, Portugal**
- **Trancão Viaduct, Trancão River, Portugal**
- **Ascendi A4 Viaduct, Porto, Portugal**
- **Natural Gas Tanks REN, Sines, Portugal**





W210 HB

Water-based epoxy coating with ceramic particles for tunnel protection.

Features:

- Semi-matt finish
- Two component product
- Water-based
- High impermeability to carbon dioxide and liquid water
- High water vapour permeability
- Fire retardant with low smoke emission and no falling droplets and/or ignited particles

Ref. 7A211+7A212



Excellent anti-carbonation properties for concrete



High impermeability to chloride ion



Very good weathering resistance



High chemical resistance



High build application



High reflective index: >90%



Excellent resistance to dirt build-up



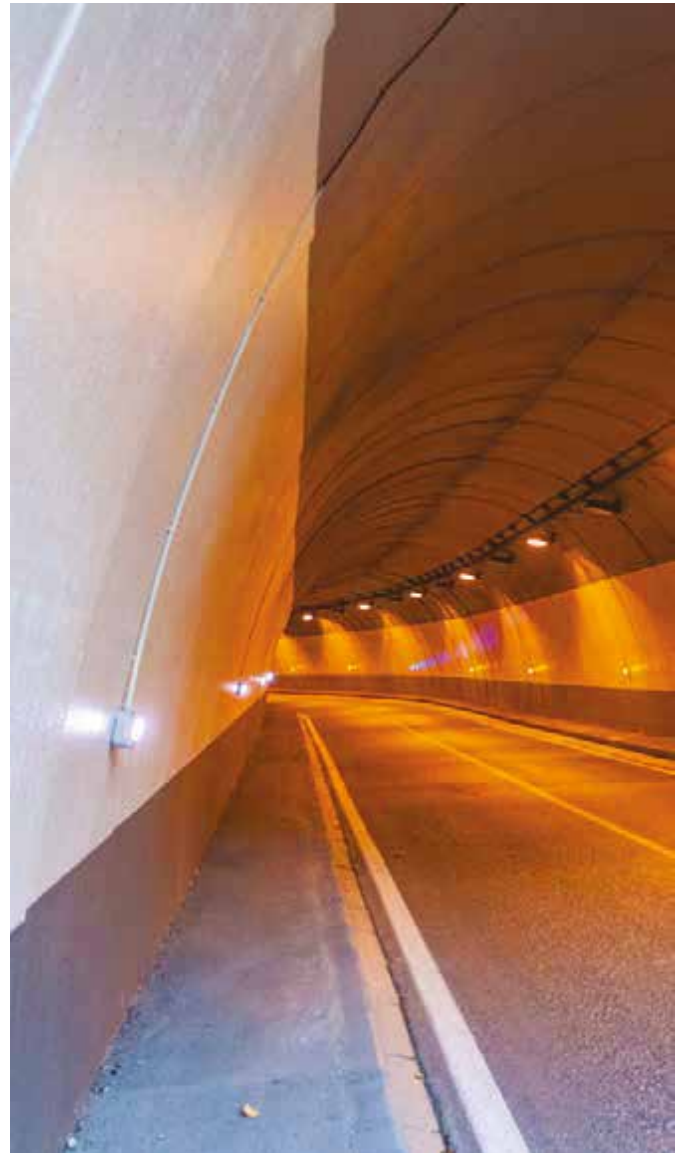
Wet surfaces tolerant



Easy-to-apply

CIN Performance Coatings' tunnelling solutions have been an integral part of major projects all over the world:

- **Arco Tunnel - Madalena do Mar, Madeira, Portugal**
- **Ribeira Brava Tunnel, Madeira, Portugal**
- **Águas Santas Tunnel, Maia, Portugal**
- **Ronda Litoral Tunnels, B-10, Barcelona, Spain**
- **Caldearenas-Monrepós Tunnel, Huesca, Spain**
- **San Pedro de Alcántara Tunnel, Malaga, Spain**
- **Bracons Tunnel, Girona, Spain**
- **Villena Tunnels (A31), Alicante, Spain**
- **Las Dos Valiras Tunnel, Andorra la Vella, Andorra**
- **Mulatos Tunnel, Antioquia, Colombia**



BUILDINGS AND STRUCTURES

SUBSTRATE CONDITION EVALUATION

The rigorous evaluation of the support's condition is an extremely important parameter in the coating process of concrete structures.

In this evaluation, the following aspects should be considered:

PULL-OFF ADHESION

The minimum traction strength required is 1.5 MPa, which is usually confirmed by pull-off tests. This is a very important requirement and it aims to ensure that the poorly cohesive layer generally present on the concrete surface has been removed.



COMPRESSION

The minimum compressive strength required shall be determined in a hardened concrete zone and shall present a value of 25 MPa.

HUMIDITY

The humidity measuring in depth can be performed with equipments such as Tramex, which allows its determination, with a maximum acceptance value of 4% in general, possibly 5% if there is an intention to apply aqueous or other wet surface compatible products.

ADHESION AND WEAR OF EXISTING COATINGS SYSTEMS

In concrete structures rehabilitation works that have been previously painted, the level of wear as well as the adhesion of the aged coatings to the substrate must be evaluated. The required surface preparation will be naturally and closely associated with this evaluation.

BUILDINGS AND STRUCTURES

CE MARKING

The CE marking is an opportunity to communicate the quality and performance of a product by the manufacturer.

If a product meets the relevant technical requirements of the EN 1504-2 standard, the manufacturer is entitled to affix the CE marking to the product.

According to the regulation, the CE marking requirement will apply to:

“Any product or kit which is produced and placed on the market to be permanently incorporated in construction works or parts of it and whose performance influences the performance of the construction works according to their basic requirements.”

This standard specifies the requirements for the identification, performance, safety and conformity assessment of the products and systems to be used for the protection of concrete structures.

EN 1504

Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and conformity assessment.



BUILDINGS AND STRUCTURES

FAQ – FREQUENTLY ASKED QUESTIONS

1. What is carbonation?

Carbonation is a mechanism responsible for the deterioration of reinforced concrete, reducing its lifetime. Essentially, carbonation results from the reaction of calcium hydroxide with carbon dioxide, forming calcium carbonate and water.

This process is accompanied by a reduction in the alkalinity of the concrete which, in the presence of water and oxygen, enhances the corrosion mechanism of steel reinforcements, accelerating degradation and reducing the durability of reinforced concrete.

2. What are the essential characteristics for an anti-carbonation coating to be effective in protecting concrete?

As carbonation is proportional to the concentration of carbon dioxide, coatings with anti-carbonation properties are characterised by their high impermeability to this gas. Paints must be highly impermeable to liquid water and chloride ions to prevent aggressive agents from entering the concrete.

On the other hand, to ensure the necessary breathability of the concrete, the coating must be characterised by high water vapour permeability.

3. Are CE Marked products under the EN 1504-2 standard subject to the same performance tests?

No. Depending on the desired method of surface protection for the concrete – hydrophobic impregnation, impregnation or coating by painting – as well as the desired performance, the requirements and subsequently the tests to be carried out are different.

In the case of products for concrete floors, taking into account the uses envisaged by CIN Performance Coatings, and as they are paint coatings, the EN 1504-2 standard establishes the different principles:

- Principle 1 - Protection against ingress,
- Principle 2 - Moisture control,
- Principle 5 - Physical resistance/surface improvement,
- Principle 8 - Increased resistivity by limiting moisture content.

4. Does a product with CE Marking, according to EN 1504-2 standard, have high carbon dioxide impermeability?

Yes. In order for a product for surface protection of concrete by paint coating to be CE Marked, EN 1504-2 provides a requirement for carbon dioxide permeability which translates into high impermeability to carbon dioxide.

Key Feature	Test Norm	Requirement
Permeability to Carbon Dioxide	EN 1062-6	$s_d > 50 \text{ m}$

5. Does a product with CE Marking, according to EN 1504-2 standard, have high water vapour permeability?

Not necessarily. The EN 1504-2 standard for paint coatings for surface protection of concrete does not anticipate performance requirements, but rather defines classifications for this characteristic. Thus, a product can be CE Marked and either permeable or non-permeable to water vapour.

Key Feature	Test Norm	Requirement
Permeable to water vapour	EN ISO 7783-1/2	Class I: $s_D \leq 5$ m - Permeable to water vapour Class II: $5 \text{ m} \leq s_D \leq 50$ m Class III: $s_D > 50$ m - Not permeable to water vapour

6. Does a product with CE Marking, according to the EN 1504-2 standard, have high impermeability to liquid water?

Yes. The EN 1504-2 standard for paint coatings for surface protection of concrete stipulates a performance requirement of high impermeability to liquid water.

Key Feature	Test Norm	Requirement
Capillary Absorption and Water Permeability	EN 1062-3	$w < 0,1 \text{ kg/m}^2 \cdot \text{h}^{0,5}$





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