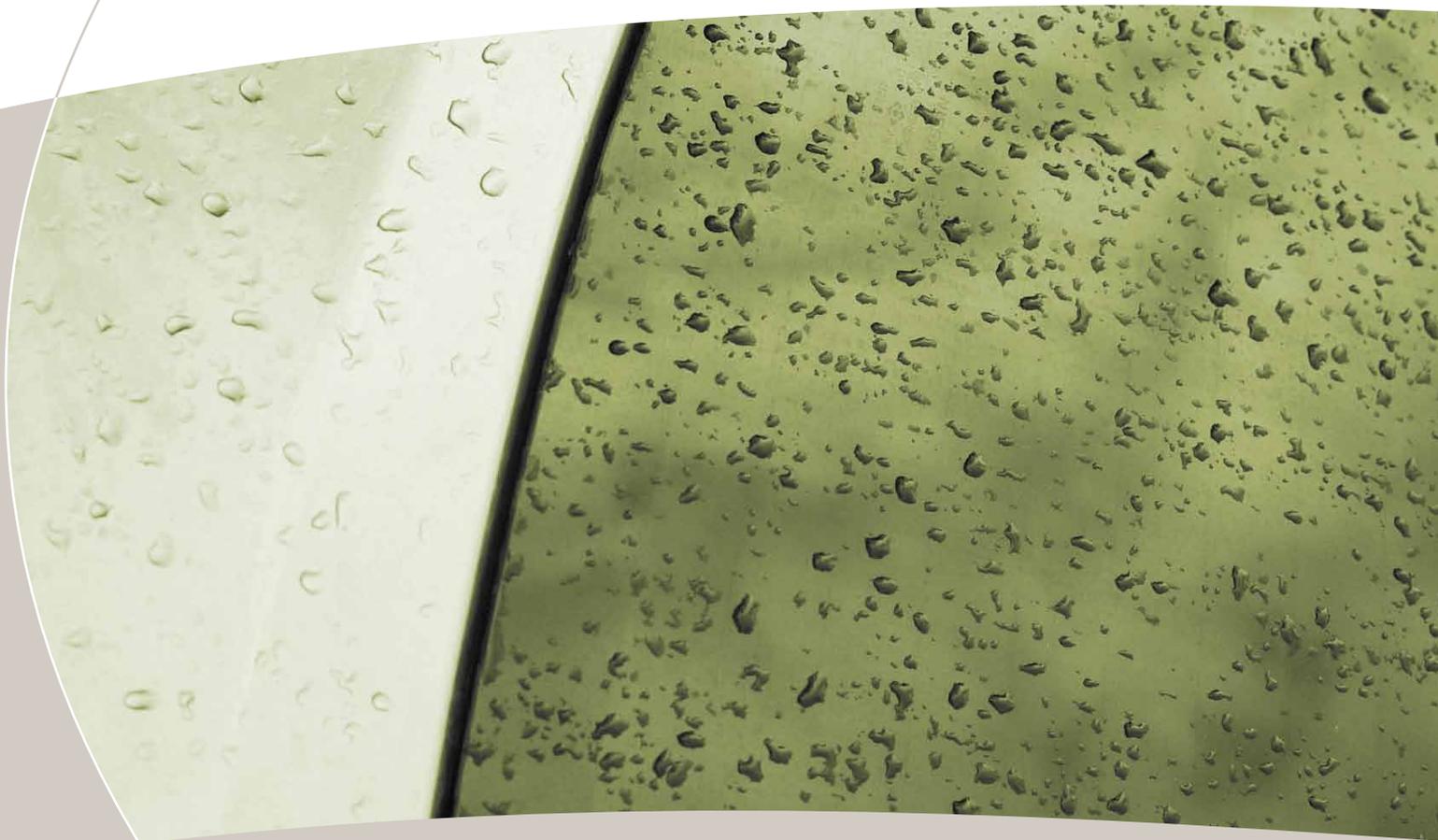


DuPont™ ALESTA®  
ZeroZinc Primer  
**The strengthened protection**



CoatingSolutions

# Corrosion



This is the phenomenon by which metals and metallic materials tend to oxidise under the action of atmospheric agents.

The development of corrosion can lead to very large costs for the final user and the structure designer. If steel is not effectively protected, it oxidises more or less rapidly depending on how aggressive its environment is. In the construction field, standard NF EN ISO 12944 defines the level of corrosion protection of metal structures depending on their environment (cf. Table 2 – Environment Identification).

Each corrosivity category corresponds to a surface treatment type. Powder coating application of a two coat system (protective primer + topcoat) will durably protect the part from corrosion propagation (cf. Table 3 – Identification of appropriate powder system for your application).

## Zinc & Environment



Zinc based product formulations are labelled as “harmful for the environment” and environmental legislation risks compromising the use of zinc by applicators in a very short term.



## ALESTA® ZeroZinc Anticorrosion Primer

The Environmentally safe choice

### ALESTA® ZeroZinc Primer anticorrosion

#### The “barrier effect” reinforced

The environment is a fundamental value at DuPont. With the strength of our experience in formulating primers for the automobile industry, our Research & Development laboratories have focussed their research on the development of a zinc free anticorrosion primer, specially formulated to improve the barrier effect.



#### The new system with High Density Crosslinking

To isolate the steel from its environment and to create a completely hermetic coating, DuPont launches a second generation primer, based on the system of High Density Crosslinking (HDC). This exclusive innovation has, compared to a classic epoxy primer, an increased number of connections between the resin and the activator, which improves the adhesion and the flexibility of the paint film! Thanks to its adhesion properties and the High Density Crosslinking of the paint film, the barrier effect is reinforced.

#### The result is spectacular:

An anticorrosion primer exclusively formulated based on epoxy resins that presents unequalled anticorrosion performance.



# The advantages of ALESTA® ZeroZinc Primer anticorrosion



## Excellent performance

A reinforced anticorrosion protection in the most severe conditions: protection against corrosion class C5-I long as indicated by ISO 12944 standard. Alesta® ZeroZinc primer anticorrosion will easily replace all anticorrosion primers with or without zinc currently on the market.

- Excellent resistance to chemicals and humidity
- Improved mechanical properties: flexibility and impact resistance
- Excellent adhesion to ferrous metals
- Excellent intercoat adhesion with Alesta® topcoats
- Easy overcoatable with powder and liquid topcoats within 12h
- Primed parts can be stored awaiting to be overcoated with topcoat

## Comparison of products available on the market

Tests done on a two-layer system by the DuPont Laboratory-Substrate: Shot blasted steel

Products	ISO 9227 Neutral salt spray			ISO 6270 Humidity test		3C Test *	
	480h	720h	1440h	480h	720h	10 cycles	15 cycles
ZRPP	+	+	+	++	++	+	+
ALESTA® ZeroZinc Primer	+++	+++	+++	++	++	++	++

\*3C Test: Accelerated corrosion test method developed by the automotive industry to be as close as possible to reality. This test comprises salt spray cycles and climatic cycles alternating with periods of wet heat and drying. This test, which is more demanding than salt spray, allows anticorrosion performance differences that are less visible than the test with salt spray to be brought out.



The ISK and Sercovam laboratories were assigned to perform tests on our ALESTA® ZeroZinc type primers.

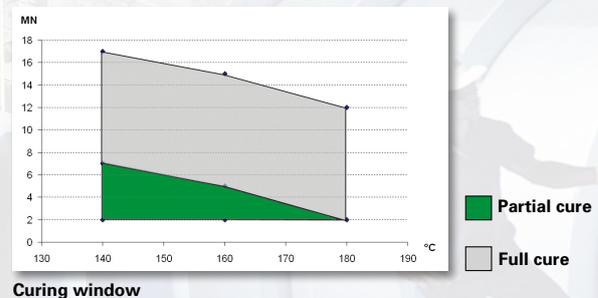
## Technical and economical advantages

- The low specific gravity of the primer leads to easier application and recycling and also improves efficiency (more m<sup>2</sup> per kg).
- Zinc-free powder coatings are less abrasive: less wear on equipment (venturi, electrode ...)
- Alesta® ZeroZinc has a very good hold-out, which leads to excellent topcoat flow.

## A low temperature system: Cure in 2 min / 140 °C

- Energy savings
- Improved productivity
- Fast cure on large and heavy parts
- The width of the curing window facilitates the treatment of parts composed of elements with high and low inertia.

Partial cure of the primer before applying topcoat then followed by full cure of the total paint system



## An ecological powder primer

### Zinc-free and heavy metal-free

This primer does not have Xi "irritant" and N "dangerous for the environment" on the label. Alesta® ZeroZinc is easy recyclable. It respects the environment.



## Environment Identification

(to standard ISO 12944)



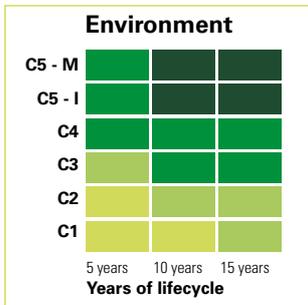
Corrosivity category	Exterior	Interior	Durability	ISO 2812-1 Chemical resistance in hours	ISO 6270 Humidity test in hours	ISO 9227 Salt spray test in hours
<b>C2 low</b>	Atmospheres with low level of pollution. Particularly rural areas	Unheated buildings where condensation can occur. e.g.: depots or sports halls	Short	-	48	-
			Medium	-	48	-
			Long	-	120	-
<b>C3 medium</b>	Urban and industrial atmospheres, moderate sulphur dioxide pollution. Low salinity coastal areas	Production rooms with high humidity and some air pollution. e.g.: Food processing plants, laundries, pubs	Short	-	48	120
			Medium	-	120	240
			Long	-	240	480
<b>C4 high</b>	Industrial areas and moderate salinity coastal areas. Seaside areas > 3 km from the coast	Chemical factories, swimming pools, coastal shipyards. (jet cleaning, laboratories, abattoirs)	Short	-	120	240
			Medium	-	240	480
			Long	-	480	720
<b>C5 - M very high (Marine)</b>	High salinity coastal and marine areas (between 1 and 3 km from the coast)	Buildings or areas with permanent condensation and high pollution	Short	-	240	480
			Medium	-	480	720
			Long	-	720	1440
<b>C5 - I very high</b>	Industrial areas with high humidity and aggressive atmosphere	Buildings or areas with permanent condensation and high pollution (steam, closed swimming pool, chemical factory).	Short	168	240	480
			Medium	168	480	720
			Long	168	720	1440

Durability – Short: <5 years    Medium: between 5 and 15 years    Long: >15 years

## Identification of the appropriate powder system for your application

Correct surface preparation is essential for the performance of our system.

Substrate: Steel



Surface treatment	Primer	2nd coat interior applications	2nd coat exterior applications
<b>Iron phosphating</b>	-	Alesta® IP, AP, EP	Alesta® IP, AP
<b>Iron or Zinc phosphating + passivation*</b>	-	Alesta® IP, AP, EP	Alesta® IP, AP
<b>Gritblasting Sa 2½ or Sa 3 (ISO 8501-1)</b>	-	Alesta® IP, AP, EP	Alesta® IP, AP
<b>Iron or Zinc phosphating + passivation*</b>	Alesta® ZeroZinc Primer ZF90017192420	Alesta® IP, AP, EP	Alesta® IP, AP
<b>Gritblasting Sa 2½ or Sa 3 (ISO 8501-1)</b>	Alesta® ZeroZinc Primer ZF90017192420	Alesta® IP, AP, EP	Alesta® IP, AP
<b>Please consult us as each individual case needs to be evaluated</b>			

\* or new nano technologies

The durability can't be linked to any warranty. It is a technical identification that can help the customer to prepare a maintenance programme. The warranty is a legal contract that forms part of a contract. The warranty is generally less than the durability. To maintain the longevity of the total system, we recommend to perform regular cleaning of the coated surface.

DuPont Performance Coatings GmbH  
Horbeller Strasse 15  
D-50858 Köln (Germany)  
Tel: +49 (0) 2234 6019 2880  
Fax: +49 (0) 2234 6019 1110

www.coatingsolutions.dupont.com



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