AXALTA COATING SYSTEMS

Best-in-class anticorrosion solutions

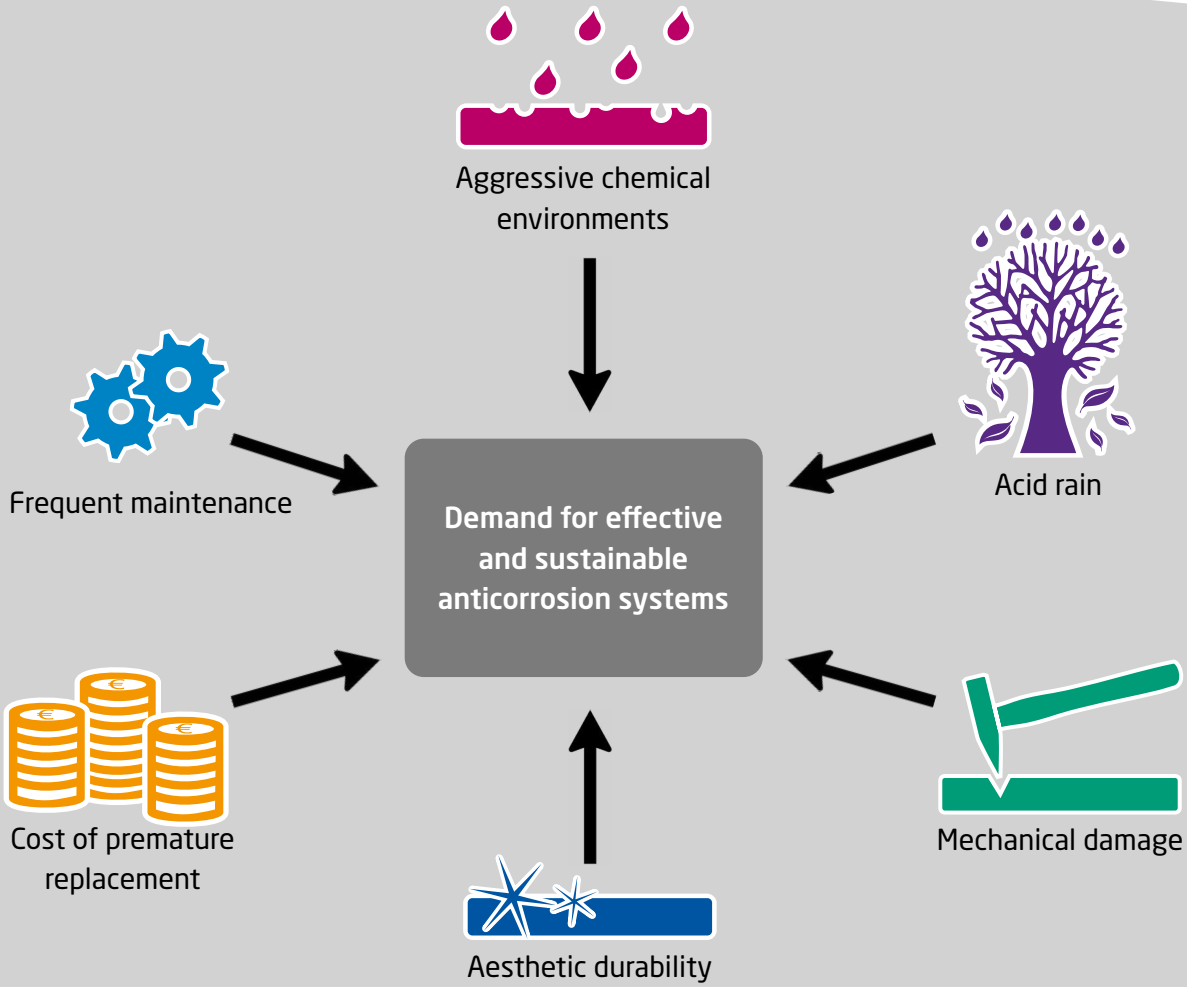
Alesta® ZeroZinc Primers

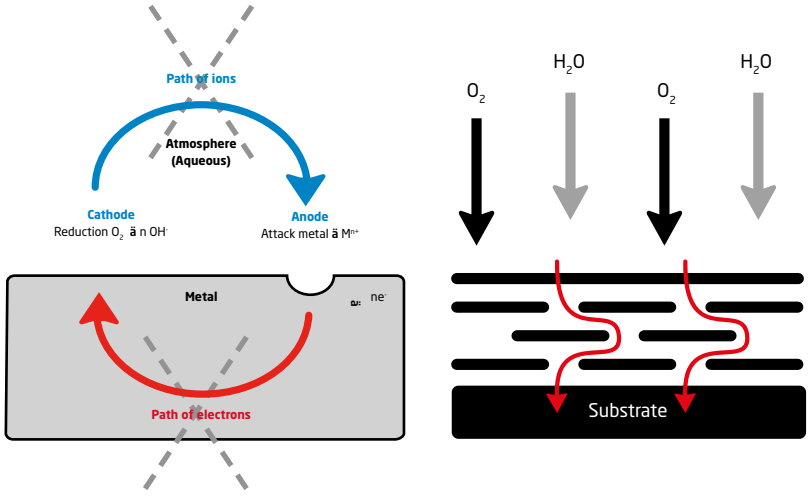
Atmospheric corrosion

According to the WCO (World Corrosion Organization), corrosion costs 3% of worldwide global gross domestic product.

Corrosion is the interaction between a metal and its environment, leading to an aesthetic or functional degradation of the metal. It is a return to a steady state. During natural weathering exposure, a conductive electrolyte (water/oxygen/salt) is formed on the surface of the coating, which can initiate the electrochemical reactions that lead to corrosion.

Surface pre-treatment and the use of the most appropriate anti-corrosion system will extend the life of the painted structure.





Corrosion is an electrochemical process consisting of cathodic and anodic reactions fed by electrons and ionic diffusion. Alesta® ZeroZinc anticorrosion primers work by preventing at least one of these reactions.

The cathodic reaction is stopped or reduced due to the barrier effect of the Alesta® ZeroZinc primer: the coating markedly reduces the diffusion of the elements involved in the corrosion process (H_2O, O_2).

The anodic reaction is prevented because Alesta® ZeroZinc primer maintains strong adhesion and prevents ions migrating. There is, therefore, no electrochemical action and no electrons are generated.

Anticorrosion solutions by Axalta

After several decades of both research and practical experience in the field of anticorrosion, the Alesta® ZeroZinc range of products is now well established on the market. The range is constantly expanding to provide the best solution for every substrate that requires coating. Alesta® ZeroZinc anticorrosion primers are formulated using High Density Crosslinking (HDC) technology and provide a coating that isolates the substrate from its environment, minimising the corrosion process.

Alesta® ZeroZinc primers

- have excellent adhesion properties both to the substrate and for the topcoat.
- belong to the second generation of epoxy primers developed to bring high corrosion resistance to parts exposed to the most severe climatic conditions including sunlight, high humidity, chemical exposure and corrosive environments.
- are formulated and tested according to the corrosion and durability classes defined in the ISO 12944-6 standard.
- are designed for the architectural building sector (metallic structures, urban furniture, steelwork, etc.), transportation (chassis, running equipment, etc.), industrial machinery, agricultural equipment and anyone requiring best-in-class corrosion protection.
- have all the proven benefits of powder coatings such as absence of VOC's, ease of application, good flow, high reactivity and environmental sustainability.
- are zinc free and easy transportation.

High Density Crosslinking (HDC)
Alesta® ZeroZinc anticorrosion primers are formulated using High Density Crosslinking (HDC) technology. The technology enhances the barrier effect of the primer, creating a completely sealed coating that isolates the substrate from its environment.

Qualisteelcoat
Qualisteelcoat is an internationally acclaimed institution dedicated to promoting and maintaining the highest quality steel coating standards. That makes a choice for Alesta ZeroZinc primers, a resolute decision for a truly professional solution in terms of application, efficiency, protection, and durability. It offers all this while consistently preserving your surface's appearance.

HDC TECHNOLOGY ★★★

quali steel coat
International Quality Label for Coated Steel

Alesta® ZeroZinc Steel Prime

especially suitable for heavy ferrous metal parts.

Alesta® ZeroZinc Edge Prime

for parts with sharp edges, thanks to its specific viscosity profile. Dedicated colours are available for general industry and the automotive market.

Alesta® ZeroZinc Antigassing Prime

for substrates prone to outgassing such as galvanised steel and metallised steel.

Alesta® ZeroZinc Antigassing Reactive

specially designed for thick parts and substrates prone to outgassing such as galvanised steel and metallised steel.

Alesta® ZeroZinc Uniprime

the universal primer - entirely safe

Alesta® ZeroZinc offering certified by Qualisteelcoat

	Product Code	Colour Code	Gloss Units	Curing Conditions (Object Temperature)
Alesta® ZeroZinc Steel Prime	ZF90017192420	± RAL 7032	90 ± 10	7 min @ 140 °C (Partial cure recommended)
Alesta® ZeroZinc Edge Prime	ZF00017121720	± RAL 7032	3 ± 2	12 min @ 180 °C (Partial cure recommended)
	ZF00014137820	± RAL 9005	5 ± 3	12 min @ 180 °C (Partial cure recommended)
Alesta® ZeroZinc Antigassing Prime	ZF80027273020	± RAL 7036	85 ± 5	15 min @ 180 °C
Alesta® ZeroZinc Antigassing Reactive	ZF80027199920	± RAL 7032	80 ± 10	7 min @ 140 °C (7 min @ 180 °C for optimal degassing)
Alesta® ZeroZinc Uniprime	ZF40027355821	± RAL 7032	35 ± 10	7 min @ 180 °C

Anticorrosion system selection

1. Identify the environment

Select the environment in which your product will be used.
For steel and galvanised steel, the ISO 12944-2 standard defines five corrosive levels:

Corrosivity category	Durability*	ISO 6270-1 Humidity chamber In hours	ISO 9227 NSST** In hours	ISO 12944-9 CCT** In hours
C2	Low	48	-	-
	Medium	48	-	-
	High	120	-	-
	Very high	240	480	-
C3	Low	48	120	-
	Medium	120	240	-
	High	240	480	-
	Very high	480	720	-
C4	Low	120	240	-
	Medium	240	480	-
	High	480	720	-
	Very high	720	1440	1680
C5	Low	240	480	-
	Medium	480	720	-
	High	720	1440	1680
	Very high	-	-	2688
CX	High	-	-	4200

With scribe on steel substrate and zinc coated steel, according to ISO 12944:2018, parts 2-6-9 standard
*Durability: low: < 7 years; medium: 7 - 15 years; high: 15 - 25 years; very high: >25 years
**NSST: Neutral Salt Spray Test - CCT: Cyclic Corrosion Testing

2. Identify lifetime

Select the required lifetime. Lifetime cycles are split into four durability levels using time frames of 7 years, 15 years, 25 years and higher. These allow the selection of the most appropriate powder coating system for your specifications.

3. Identify substrate

The identification of the substrate to be coated depends on its nature, design and often both:
- Ferrous substrates (steel with low carbon content, alloyed steel, wrought iron, etc.)
- Substrates prone to outgassing (castings, galvanised steel, metallised steel)
- Parts with sharp edges

Note: The estimated durability depends on the frequency of cleaning the painted surfaces as well as the environmental conditions.

Substrate	System + Alesta® IP, AP, SD	Surface preparation	Environment according to ISO12944				
			C2	C3	C4	C5	CX
Mild steel	Alesta® ZeroZinc Steel Prime / Alesta® ZeroZinc Uniprime	Chemical or Mechanical	■	■	■		
Mild steel	Alesta® ZeroZinc Edge Prime / Alesta® ZeroZinc Uniprime	Chemical or Mechanical	■	■	■		
Hot Dip Galvanised steel	Alesta® ZeroZinc Antigassing Prime / Alesta® ZeroZinc Uniprime	Chemical or Mechanical	■	■	■	■	
Hot Dip Galvanised steel	Alesta® ZeroZinc Antigassing Reactive / Alesta® ZeroZinc Uniprime	Chemical or Mechanical	■	■	■	■	
Zn or ZnAl Metallised steel	Alesta® ZeroZinc Antigassing Prime / Alesta® ZeroZinc Uniprime		■	■	■	■	
Zn or ZnAl Metallised steel	Alesta® ZeroZinc Antigassing Reactive / Alesta® ZeroZinc Uniprime		■	■	■	■	

A solution for every substrate

Mild steel substrates
ZeroZinc Steel Prime
Low bake primer for heavy parts
- Alesta® ZeroZinc Steel Prime, grey, ZF90017192420

ZeroZinc Edge Prime
High-performance edge coverage compared to standard primer
- Alesta® ZeroZinc Edge Prime, grey ZF00017121720
- Alesta® ZeroZinc Edge Prime, black, ZF00014137820

Steel-based substrates prone to outgassing
Alesta® ZeroZinc Antigassing Prime
Alesta® ZeroZinc Antigassing Reactive

- Alesta® ZeroZinc Antigassing Prime for substrates prone to outgassing
- Alesta® ZeroZinc Antigassing Reactive specially designed for thick parts and substrates prone to outgassing

Aluminium substrates
Alesta® ZeroZinc Edge Prime
Better coating of the edges and suitable for aluminium

- Alesta® ZeroZinc Edge Prime, grey, ZF00017121720

All substrates
Alesta® ZeroZinc Uniprime
The universal and versatile solution

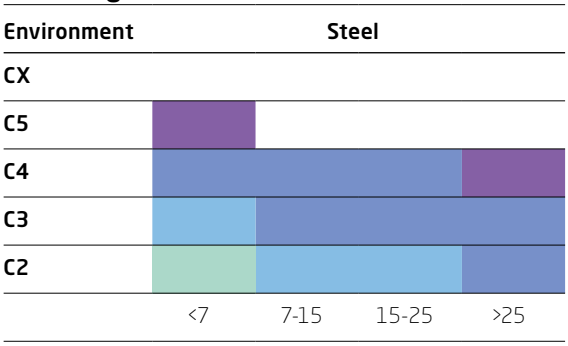
- Alesta® ZeroZinc Uniprime, ZF40027355821

Surface preparation and system
Mild Steel

	Primer	Topcoat
Iron or Zinc phosphating(1)	-	Alesta® IP, AP, SD
Iron or Zinc phosphating(1) + passivation	-	Alesta® IP, AP, SD
Iron or Zinc phosphating(1) + passivation	Yes	Alesta® IP, AP, SD
Blasting angular blast(2) (3) >Sa 2 1/2 mini / Rz = 50/80 µm – Ra = 7/12(4)	Yes	Alesta® IP, AP, SD
Case-by-case study – Contact us		

(1) Or alternative treatment with equivalent performance. In any case, results depend on the type of surface treatment and so must be qualified with salt spray tests
(2) Type of blast should be chosen according to the blasting technology and the required roughness
(3) The shape of the blast will be controlled regularly to keep it as stable as possible and maintain the performance
(4) Sa is cleanliness and Ra/Rz is the roughness profile when blasting

Durability of the selected system according to the environmental conditions

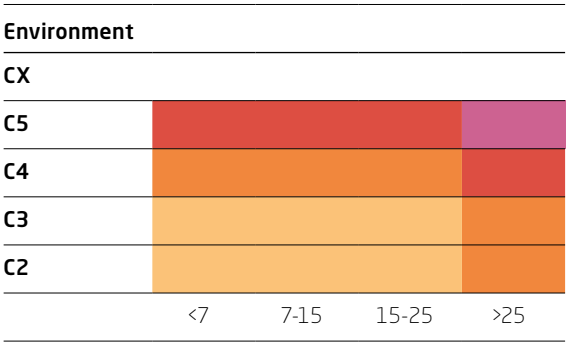


Surface preparation and system
Hot Dip Galvanised Steel
According to the ISO1461 and NF A 35-503 standards

	Primer	Topcoat
Phosphating(1) or sweep blasting(2)	-	Alesta® IP, AP, SD
Phosphating(1) + passivation or Chromating	-	Alesta® IP, AP, SD
Phosphating(1) + passivation or Chromating or Sweep blasting(2)	Yes	Alesta® IP, AP, SD
Case-by-case study – Contact us		

(1) Alternative treatment with equivalent performance. In any case, results depend on type of surface treatment and so must be qualified with salt spray tests.
(2) Inert media, angular
The shape of the blast should be controlled regularly to keep it as stable as possible and maintain the performance. A maximum of 10% of the zinc may be removed by the blasting process.

Durability of the selected system according to the environmental conditions



(A1) Durability is not a guaranteed period. It is a technical concept that can help customers to establish a maintenance program. The warranty period is a legal concept that is part of a contract. The warranty period is generally shorter than durability. Protection and expected performance will vary according to the design of the part to be painted, the quality of the surface pre-treatment and application and thickness of the coating system, as well as the maintenance programme of the coated surfaces. This information is given as an indication. It is based on our experience and laboratory results and does not constitute a commitment on our part.

Surface preparation and system
Metallisation
According to the ISO2063 standard

	Primer	Topcoat
50 µm zinc or zinc-aluminium	-	Alesta® IP, AP, SD
100 µm zinc or zinc-aluminium	-	Alesta® IP, AP, SD
100 µm zinc or zinc-aluminium	Yes	Alesta® IP, AP, SD
Case-by-case study – Contact us		

Alesta® ZeroZinc Uniprime

With Alesta® ZeroZinc Uniprime, gone are a host of different processes depending on the substrate type: with a single product, all requirements are covered.

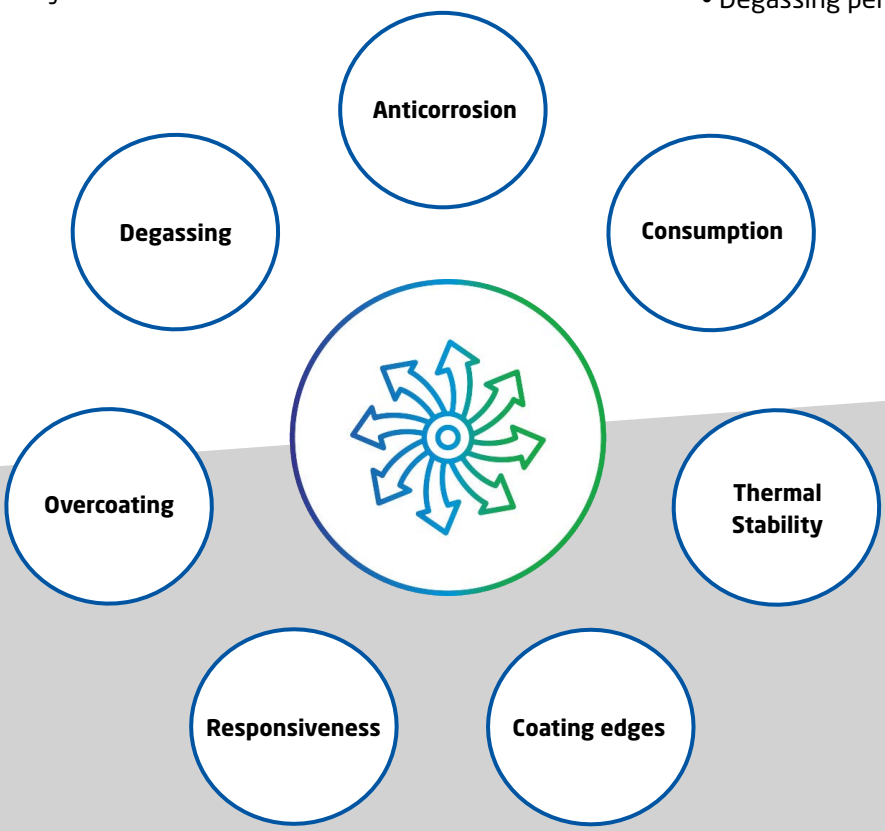
Alesta® ZeroZinc Uniprime is THE multi-function primer. It meets the most stringent anti-corrosion requirements, regardless of the shape and type of the part: it covers the areas that are most difficult to reach. Owing to its versatility, Alesta® ZeroZinc Uniprime enables the use of a single primer, whatever the nature of the substrate (black steel, galvanised steel, metallised steel, aluminium, etc.) offering ease of application, better stock control and increased productivity.

Alesta® ZeroZinc Uniprime is the unique solution for:

- All types of substrates, including degassing media: Steel, HDG (Hot Dip Galvanised) steel, metallised steel, aluminium
- For demanding shapes: expanded metal, perforated sheet steel, sharp edges

Alesta® ZeroZinc Uniprime, formulated from epoxy resin, has been designed to meet the following criteria:

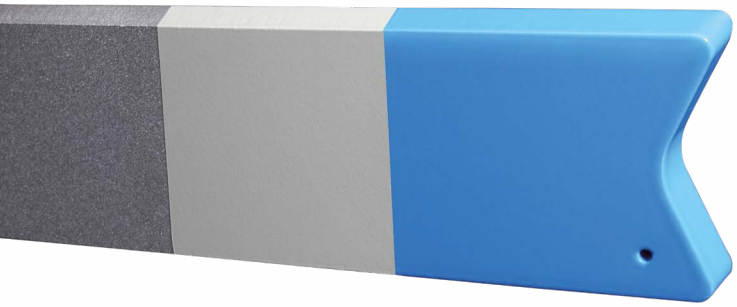
- Stability and robustness in application (application and oven-baking)
- Coating areas that are hard to reach
- Excellent anti-corrosion performance (to the ISO 12944-6 standard)
- Degassing performance



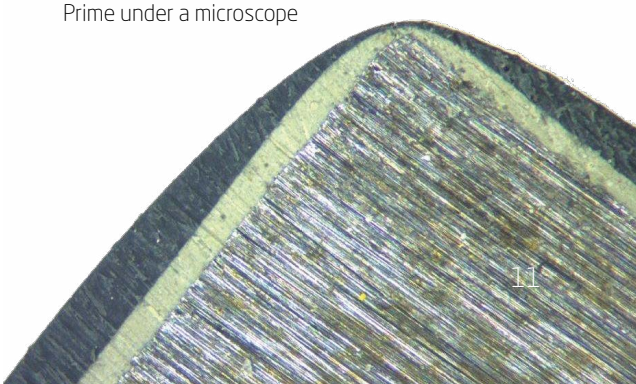
Corrosion very often starts from edges. Perfect edge protection by ZeroZinc

Alesta®
ZeroZinc Primer

Alesta®
ZeroZinc Primer with
Alesta® Topcoat



Alesta® ZeroZinc Edge
Prime under a microscope



WWW.POWDER.AXALTACS.COM

Further information about ZeroZinc range:

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www.axalta.se/en-zerozinc
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