AXALTA COATING SYSTEMS

Anticorrosion

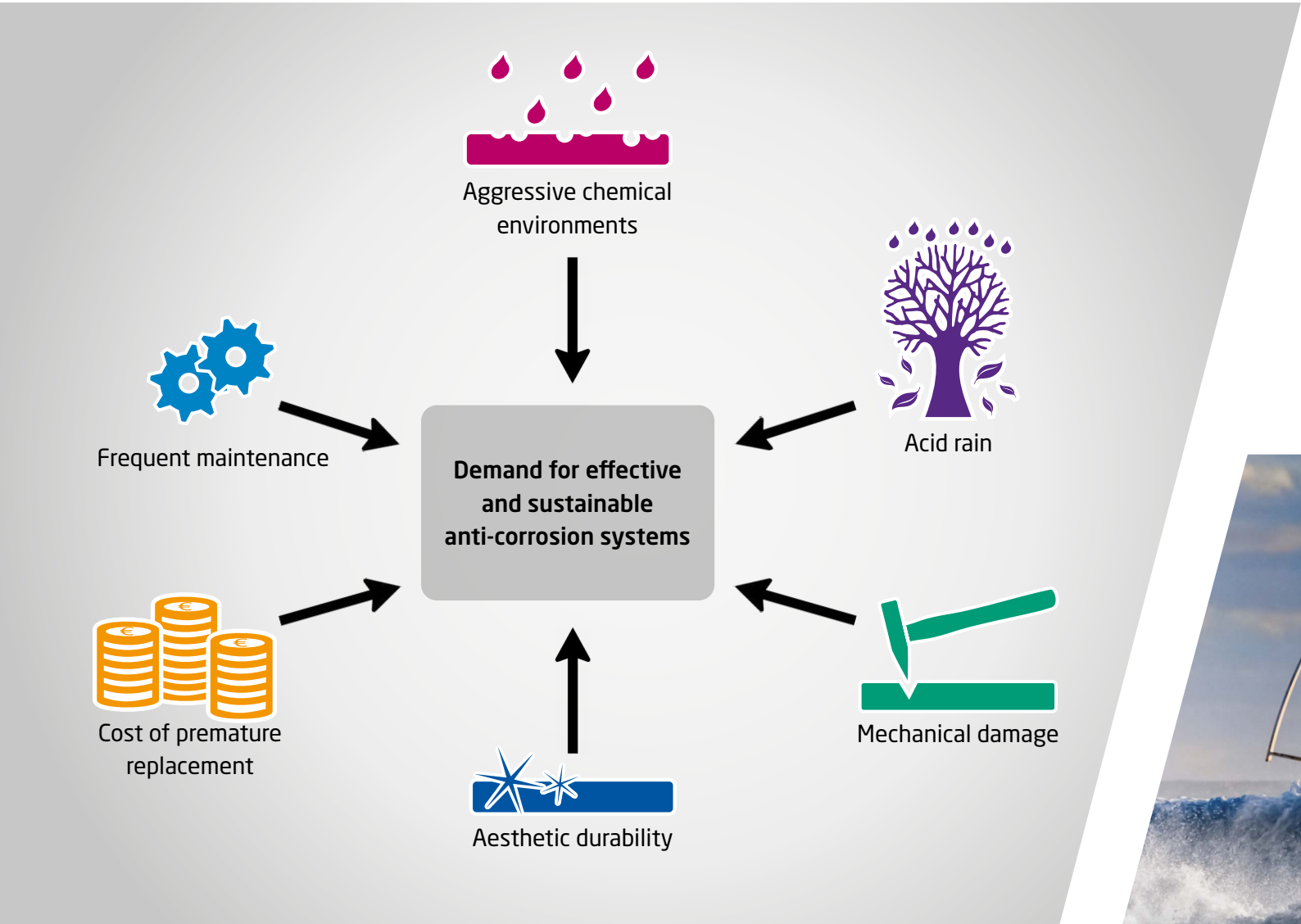
Protecting your project together

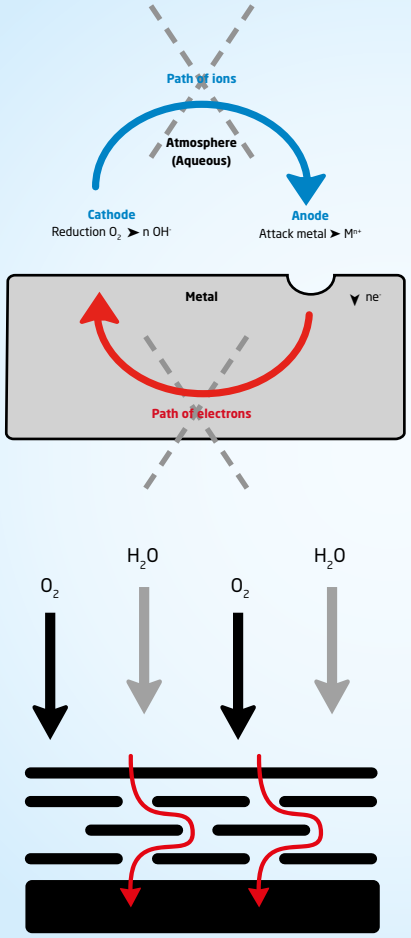
Corrosion

Sustainability, cost, life cycle, and material efficiency – these are all issues our industry must face now to be future-ready. According to the WCO (World Corrosion Organization), corrosion accounts for 3.4% of global gross domestic product.

Corrosion is the interaction of a metal with its environment, leading to an aesthetic or functional degradation of the metal itself. It is a return to a stable state. During exposure to natural elements, i.e. weathering, a conductive electrolyte (water/oxygen/salt) forms on the surface of the coating, which can kickstart the electrochemical reactions that culminate in corrosion.

Surface pre-treatment and applying a first-rate, optimised anti-corrosion system extends the life of coated surfaces.





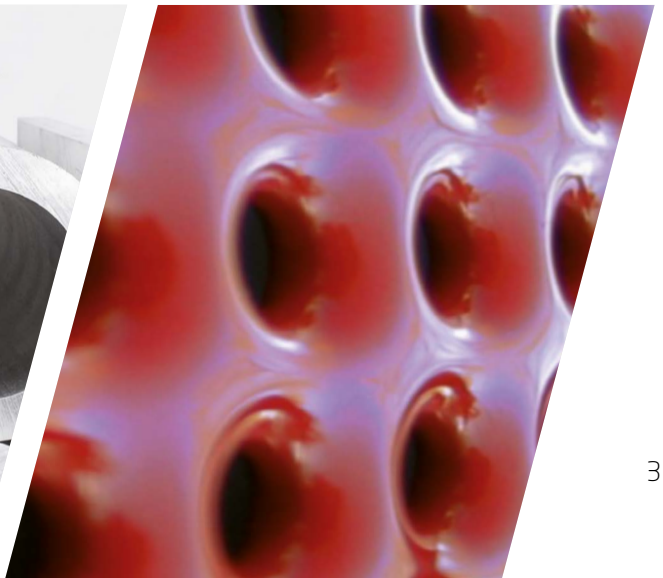
Corrosion is an electrochemical process that consists of cathodic and anodic reactions produced by electrons and ionic diffusion. Axalta coating technologies inhibit at least one of these reactions. The cathodic reaction is halted or reduced because the coating acts as a barrier; it markedly reduces the diffusion of the elements involved in the corrosion process (H_2O, O_2).

At the same time, Axalta coating technologies maintain strong adhesion and prevention migration, inhibiting anodic reaction. Consequently, no electrochemical action or electrons are generated.

Efficient corrosion protection is intrinsically linked to four main factors:

- the specific environment and type of corrosion your project will encounter
- the metallic substrate in scope
- the surface pre-treatment used
- the coating product selected

Axalta Coating Systems' decades of expertise qualify it to guide you every step of the way. With a comprehensive thermoplastic, thermosetting and electrocoating technologies portfolio to choose from, we are well equipped to match your project to the best coating. These technologies empower you to combat the maximum range of corrosion challenges in every climate.



Environment & Durability

The ISO 12944 standard defines the parameters of steel structure corrosion protection. The standard gives applicators, engineers, specifiers and architects the tools they need to define environmental classification, protective paint systems, laboratory test methods, and systems for structures.

The ISO 12944 standard defines six corrosion risk categories, from very low-risk interior environments (C1) to extremely high-risk offshore environments (CX), along with four immersion categories (Im1 to Im4).

The first step in this process is to identify your environment's key characteristics, e.g. location, humidity level, chemical pollution, salinity level, and projected corrosivity.

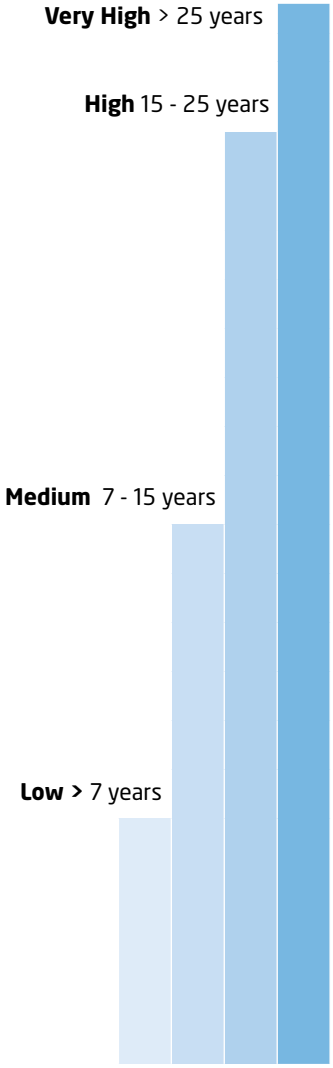
Once the corrosion category has been determined, it's time to assess durability. Durability is divided into four levels, from 'Up to 7 years' (Low) to 'Over 25 years' (Very High).

Anti-corrosion systems undergo and must pass a wide range of tests, commonly known as cyclic testing; these are defined based on the target category and durability.

Ultimately, the durability estimate is contingent on how often the painted surfaces are cleaned and on the environmental conditions.

Corrosivity category	Interior	Exterior	Humidity level
C1	Heated buildings with clean atmospheres e.g. offices, shops, schools, hotels		
C2	Unheated buildings e.g. storage facilities, sport halls	Rural areas	
C3	Production hall with high humidity and air pollution e.g. laundries, dairies, food processing plants	Industrial and inshore areas with low salinity	
C4	Chemical plants, swimming pools, coastal ship and boatyards	Industrial and inshore areas with medium salinity	
C5	Areas with almost permanent condensation and high pollution	Coastal areas with high salinity / Industrial areas with high humidity and aggressive atmosphere	
Cx	Areas with extreme humidity and aggressive atmosphere	Coastal areas with high salinity / Industrial areas with extreme humidity and aggressive atmosphere	

Chemical/ Polution/ Salinity level	Expected Corrosivity	Durability*	ISO 6270-1 Humidity chamber In hours	ISO 9227 NSST** In hours	ISO 12944-9 CCT** In hours
		Low	48	-	-
		Medium	48	-	-
		High	120	-	-
		Very high	240	480	-
		Low	48	120	-
		Medium	120	240	-
		High	240	480	-
		Very high	480	720	-
		Low	120	240	-
		Medium	240	480	-
		High	480	720	-
		Very high	720	1440	1680
		Low	240	480	-
		Medium	480	720	-
		High	720	1440	1680
		Very high	-	-	2688
		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

The estimated durability depends on the frequency of cleaning the painted surfaces as well as the environmental conditions. The durability category is not a guarantee period. Instead, it's a technical consideration that can assist owners in their selection, configuration, and installation of relevant maintenance programmes. However, there is no hard and fast rule that links these two periods of time.

Immersion categories for water and soil

Category	Environment	Examples of environments and structure
Im1	Fresh water	River installations and hydro-electric power plants
Im2	Sea or brackish water	Immersed structures without cathodic protection (e.g. harbour areas, locks or jetties)
Im3	Soil	Buried structures, stell piles and pipes
Im4	Sea or brackish water with cathodic protection	Immersed structures with cathodic protection (eg. Offshore structures)

Substrate

Where powder coating is concerned, substrates are divided into degassing substrates and non-degassing substrates. Substrate identification is crucial and depends on the substrate's nature or design.
And often, both need to be carefully considered in advance.

Non-degassing substrates
Steel with low carbon content
Alloyed steel
Zinc electroplating
Sendzimir
Aluminium

Substrates prone to outgassing
Cast Iron
Hot dip galvanised steel
Zn or ZnAl metallised steel

During the curing process, substrates prone to degassing may cause surface defects.
For that reason, adapted coating is required to counteract the effect of these substrates.

Another critical element to consider is sharp edges. These tend to be particularly vulnerable to corrosion and require custom coating to prevent degradation. Standard surface treatment and coating does not suffice.

More information: www.axalta.com/antico-substrate

Surface Treatment

Surface treatment addresses two elements. Firstly, it conditions a part's surface to be coated with subsequent coating(s). Secondly, it combines with the selected protection system to ensure the part's durability in its use environment. Ultimately, both surface treatment and the protective system depend on the substrate and the structure's destination environment.

All good surface treatment processes must start with basic cleaning and purification to remove solid contaminants such as salt, grease, soil, and oil. This should be followed up by one of two sub-group surface cleaning treatments, i.e. mechanical or chemical.

Mechanical surface treatment, like grit-blasting, removes rust and prepares the surface for any rugosity (surface roughness) corrections. Surface rugosity enhances coating adhesion, and rust removal is essential for protecting against corrosive agents. After an object undergoes mechanical surface treatment, it must be coated straight away.

Mechanical treatment can also be followed by chemical surface treatment, which adds another protective layer to the substrate surface. The goal is to obstruct chemical reactions with air.

Chemical treatments can also be used on non-blasted (i.e. non-mechanically treated) material. Currently, the most commonly applied chemical conversions are iron or zinc phosphating, whether or not treated with passivation or chromating.

More information: www.axalta.com/antico-surface-treatment

Axalta Technologies

Thermoplastic - Thermosetting - Liquid

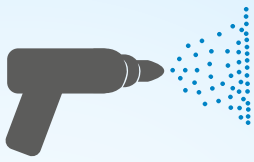
Axalta's innovative technological approach and solid resources give it a competitive corrosion protection edge. It stands out for its powder coating treatments uniquely produced with thermoplastic, thermosetting and electrocoat technologies. These technologies provide your project with the best corrosion protection solution based on your unique circumstances.

Thermoplastic and thermosetting applications are powder coatings with distinct properties that derive from the chemical and physical performance of the material.

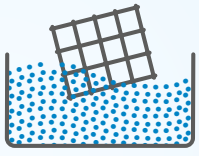
Thermoplastic	Thermosetting
Melts when heated (pre-heating)	Melts and cures when heated (no pre-heating)
Can be re-melted, repaired, recycled	Curing cannot be reversed
No curing process	Requires a controlled curing process
Soft when heated, strengthens on cooling	Hard when cured
Long Molecular chains – Semi Crystalline	Crosslinked network of short chains - Amorphous
Density ~ 1 g/cm^3	Density ~ 1.5 g/cm^3
Functional coating - 1 layer system	Functional and decorative coating (1 to 2 layers)
High Film build (200 to 1000´µm)	Thin Coating film (60-150 µm)
Technical colour range	Broad range of colours & finishes available
Product ranges: **Abcite®** **Plascoat®**	Product range: **Alesta®**

Systems of application

Electrostatic spray
Abcite® X60
Plascoat® PPA 571
Plascoat® PPA 742 ES
Alesta® ZeroZinc
Alesta® AP Qualisteel
Alesta® EP primers
Alesta® Topcoat range



Fluidised bed (dip)
Abcite® 1060
Plascoat® PPA 571

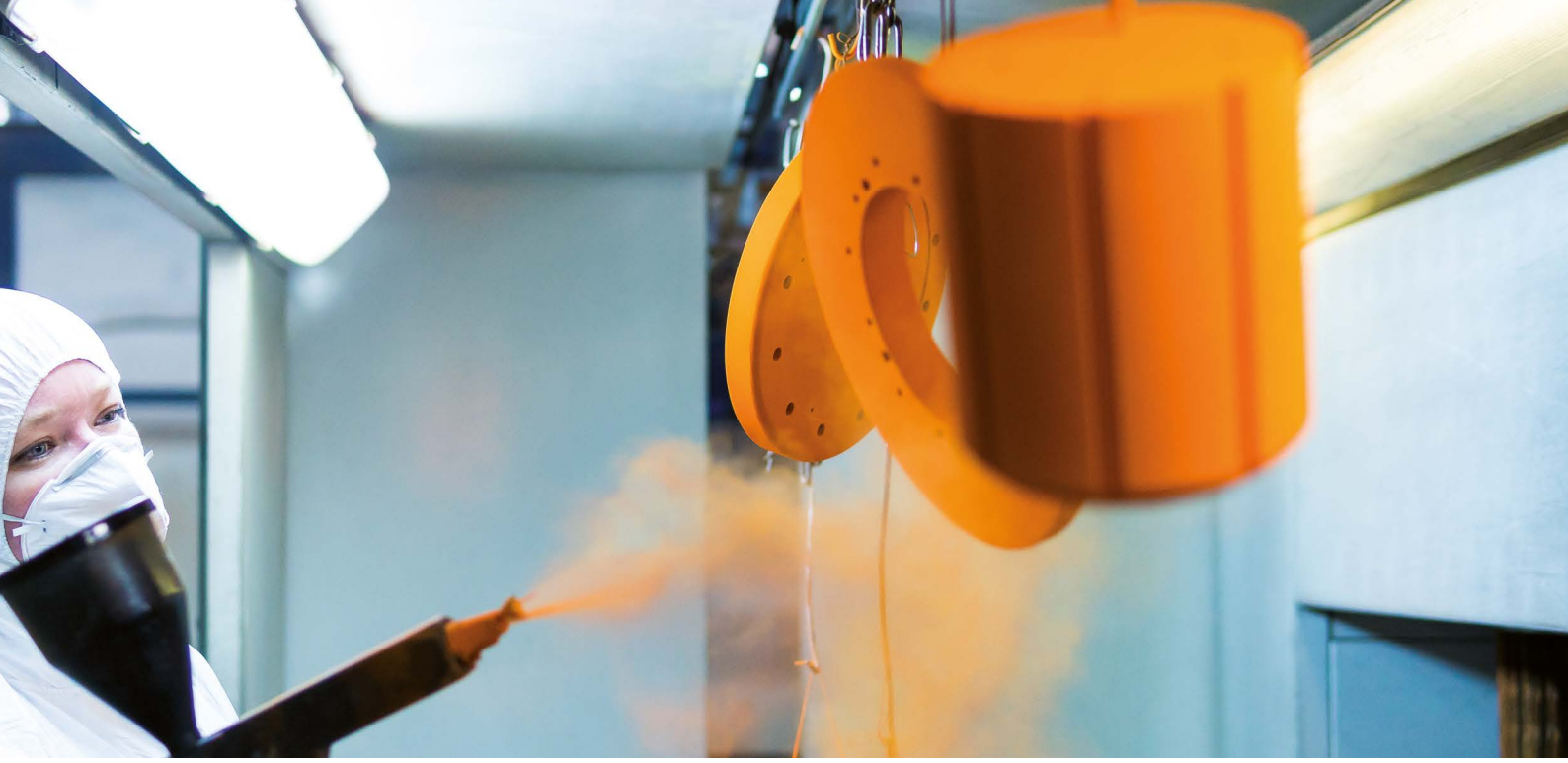


Flame Spray
Abcite® 2060

Electrostatic spray
Coating method which uses a spray gun to create an electrical charge on powder particles, while the substrate to be coated is grounded (made neutral).

Fluidised bed (dip)
Coating method consisting of immersing a hot part into a bed of powder, allowing the powder to melt on the part and build a film.

Flame Spray
The deposition of semi-molten polymer particles onto heated surface whereby process heat causes the particles to flow and coalesce into a complete cohesive polymer coating.



Axalta is one of the world's largest electrocoating producers, supplying e-coat products to most major light vehicles, commercial vehicle original equipment manufacturers, and a wide range of general industrial clients. Our portfolio contains first-rate, qualified e-coatings formulated to meet unique customer needs with a complete range of cutting-edge technologies. The Axalta team of technical experts also provides customers with premium service and support based on their comprehensive knowledge and experience.

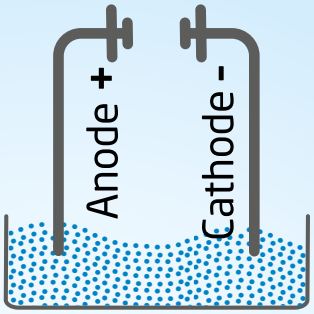
Axalta's high-performance electrocoats are designed to provide reliable mechanical strength and superior corrosion protection. Every product is also water-based, making them environmentally friendly and more sustainable.
At the same time, they've been formulated to ensure superior performance across a wide variety of substrates, including hot-rolled steel, cold-rolled steel galvanised steel, aluminium, and magnesium. Axalta also supplies a diverse mix of e-coat formulations, including lead-free and tin-free products, low VOC and HAPS-free systems, as well as formulations with unique benefits such as improved edge protection, low-temperature bake capability, and improved throwing power.

Electrocoat

Cathodic Electrodeposition
Electrodeposition is not reversible
Requires an electrocoat installation
Epoxy-Isocyanate based
Density 1.2 - 1.35 g/cm^3
Functional coating
Thin coating film (15-30 µm), High film build coating >35 µm
Colours black or grey
Product range: **AquaEC™**

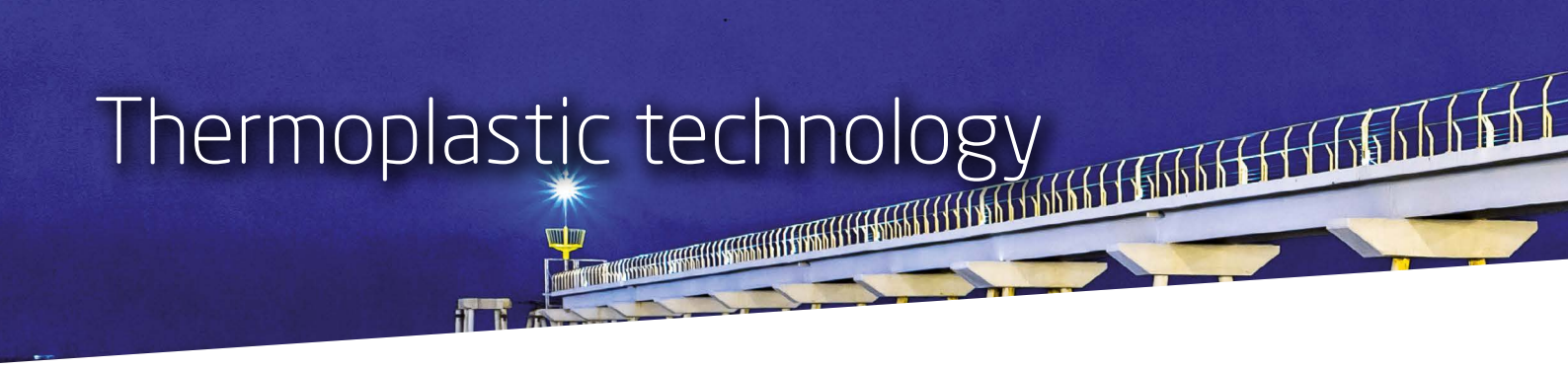
System of application

Electrodeposition
AquaEC™ 3000
AquaEC™ 3500 EP



Electrodeposition
Electrodeposition is a widely used industrial process in which colloidal particles are deposited on an electrode under the influence of an electric field.

Thermoplastic technology



Abcite® 1060/X60

Abcite® 1060 and Abcite® X60 is a single layer, primer-free, high-strength adhesive thermoplastic powder coatings range which provides steel and other metals with best in class, highly durable corrosion protection under the most severe conditions. Abcite® 1060 and Abcite® X60 are especially designed for the application process they are dedicated to.

Key features and benefits

- Outstanding corrosion protection and best in class salt spray resistance
- Excellent resistance to alkaline and acid chemical attack
- Impermeable barrier, even when subjected to permanent immersion or condensation
- UV exposure and weather do not affect performance
- Service temperature from -60 °C to 75 °C
- Tough and flexible for high impact and abrasion resistance
- Interior and exterior coating in one go
- No primer, self-adhering monofilm
- Excellent edge and corner coverage BPA, VOC and halogen free
- Compliant with many food contact (EU and FDA) and potable water contact regulations
- Repairable on site, repair kit available on request

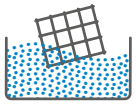
Application examples

- Corrosion protection in highly corrosive agricultural, industrial, and marine environments
- Pipes, fittings, filters, flanges, valves, and tanks with regular water and waste liquid contact
- Pumping stations, distribution systems, desalination plants, wastewater treatment plants

Anticorrosion performance

- Can withstand up to CX highly corrosive environments in accordance with the ISO12944-6/-9 standard
- Can withstand up to Im3 immersion category in accordance with the ISO12944-6 standard

Systems of application

Electrostatic spray	Specific grade	General thickness
	Abcite® X60	250µm
Fluidised bed (dip)	**Specific grade**	**General thickness**
	Abcite® 1060	400µm

More information: www.axalta.com/abcite

Abcite® 2060

Abcite® 2060 is a single layer coating with Abcite® X60 performance, specifically optimised for Flame Spray technology application. Flame Spray technology is the only system that applies powders on site and does not require a coating line.

Key features and benefits

- On-site application, no coating line required
- Specially designed for large structures
- Outstanding corrosion protection and best in class salt spray resistance
- Excellent resistance to alkaline and acid chemical attacks
- Impermeable barrier, even when subjected to permanent
- Immersion or condensation
- UV exposure and weather do not affect performance
- Service temperature from -60°C to 75°C
- Tough and flexible for high impact and abrasion resistance
- No primer, self-adhering monofilm
- Excellent edge and corner coverage BPA, VOC, and halogen-free

Application examples

- Corrosion protection in highly corrosive agricultural, industrial, and marine environments
- Pipes, bridges, metal structures, waterproofing and offshore installations

Anticorrosion performance

- Can withstand up to CX highly corrosive environments in accordance with the ISO12944-6/-9 standard
- Can withstand up to Im3 immersion category in accordance with the ISO12944-6 standard

System of application

Flame Spray	Specific grade	General thickness
	Abcite® 2060	400µm

More information: www.axalta.com/abcite

Plascoat® PPA 571

Plascoat® PPA 571 is the ideal coating for outdoor items exposed to demanding urban or coastal environments. It provides long-term protection for metal subjected to inhospitable or severe conditions.

Key features and benefits

- 30+ years of proven performance
- Superior sun, salt, and seawater resistance
- Excellent impact and sand abrasion resistance
- Premium quality, glossy appearance
- Will not crack, chip, flake, or fracture
- Low-temperature performance to -70°C
- Excellent adhesion to steel, iron, and aluminium
- No primer required
- Graffiti resistant
- PPA 571 is environmentally friendly and free of Bisphenol A (BPA), PVC, halogens, phthalates, and heavy metals
- Compliant with many food contact (EU and FDA) regulations
- Repairable on site, repair kit available on request

In the Plascoat® PPA 571 range, we also offer a flame retardant product.
Discover more on www.axalta.com/plascoat

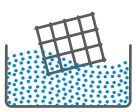
Application examples

- Corrosion protection in highly corrosive coastal, agricultural and industrial environments
- Outdoor furniture, fencing, construction, automotive accessories, pipes, fittings

Anticorrosion performance

- Can withstand up to C5 corrosive environments in accordance with the ISO12944-6 standard
- Can withstand up to Im3 in accordance with the ISO12944-6 standard

Systems of application

Electrostatic spray	Specific grade	General thickness
	Plascoat® PPA 571 ES	250 µm
Fluidised bed (dip)	**Specific grade**	**General thickness**
	Plascoat® PPA 571	400 µm

More information: www.axalta.com/plascoat

Plascoat® PPA 742

Plascoat® PPA 742 is a single layer thermoplastic coating specifically designed to protect parts with sharp edges and strong thermal mass differential. In addition, it can be used as a primer with an Alesta® topcoat.

Plascoat® PPA 742 provides long-term, premium protection for metals in demanding environments and also accommodates the application of all Alesta® topcoat range products. At the end of the day, Plascoat® PPA 742 provides you with excellent protection and the Alesta® topcoat guarantees a professional aesthetic finish.

Key features and benefits

- Improved edge covering
- Excellent compatibility with Alesta® topcoat
- Excellent inter-coat adhesion
- Strong stability during Alesta® curing
- Improved scratch resistance
- Superior sun, salt, and seawater resistance
- Good impact and sand abrasion resistance
- Excellent adhesion to steel, iron, and aluminium
- Will not crack, chip, flake or fracture

Application examples

- Corrosion protection in highly corrosive coastal, agricultural, and industrial environments
- Outdoor furniture, fencing, construction, metallic structures

Anticorrosion performance

Can withstand up to C5 corrosive environments in accordance with the ISO12944-6 standard

System of application

Electrostatic spray	Specific grade	General thickness
	Plascoat® PPA 742	250 µm

More information: www.axalta.com/plascoat

Thermosetting technology

Alesta® ZeroZinc

Several decades of research and practical experience in the field of anti-corrosion have firmly established the Alesta® ZeroZinc range of products as market leaders. And that range is constantly expanding to guarantee the best solution for every substrate. High-Density Crosslinking (HDC) technology is at the basis of Alesta® ZeroZinc anti-corrosion primers, which provides a coating that isolates the substrate from its environment. That keeps corrosion to a minimum.

The Alesta® ZeroZinc range features all the proven benefits inherent to powder coating; for example, they are VOC-free, easy to apply, have a good flow and high reactivity, and are environmentally sustainable.

Key features and benefits

- Excellent adhesion properties in terms of substrate and topcoat
- Second-generation epoxy primer developed for high corrosion resistance to:
  - severe climate conditions, e.g. sunlight, high humidity
  - chemical exposure
  - corrosive environments
- Zinc-free
- Easy to transport
- Wide range of corrosion protection applications for multiple sectors

Application examples

Alesta® ZeroZinc products provide robust protection against corrosion for equipment, parts, and materials in a wide variety of sectors. Some of these include:

- Architectural, Construction, and Engineering sector (e.g., metallic structures, urban furniture, steelwork, etc.)
- Transportation (e.g. chassis, running equipment, etc.)
- Industrial (e.g. machinery, agricultural equipment, etc.)

Anticorrosion performance

Alesta® ZeroZinc can withstand C5 corrosive environments in accordance with the ISO12944-6 standard; however, the extent of protection also depends on the type of substrate and surface prep with an additional Alesta® topcoat.

System of application

Electrostatic spray	Specific grade	General thickness
	Alesta® ZeroZinc	60-80 µm

More information: www.axalta.com/zerozinc

A solution for every substrate

Alesta® ZeroZinc Steel Prime
Ideal for heavy-duty ferrous metals.

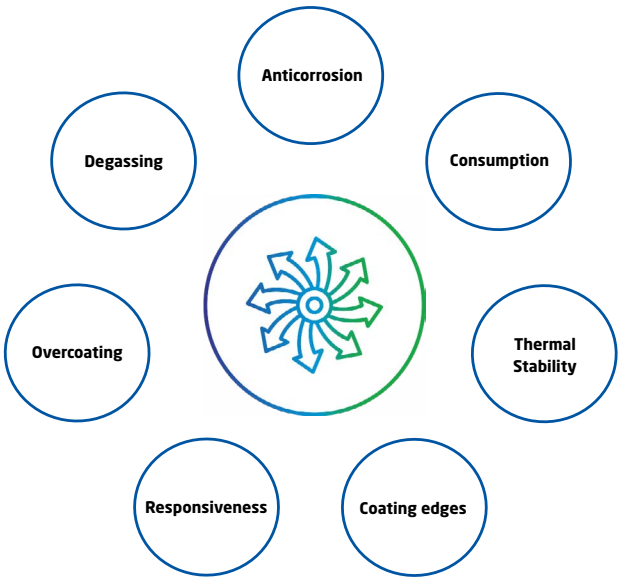
Alesta® ZeroZinc Edge Prime
Ideal for sharp edges due to its specific viscosity profile. A unique colour palette is also available to the general industry and the automotive market.

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, e.g. galvanised steel and metallised steel.

The universal and versatile solution: Alesta® ZeroZinc Uniprime
Alesta® ZeroZinc Uniprime is the all-purpose primer. It satisfies the most stringent anti-corrosion requirements, whatever the component's shape or type. A dynamic product, it successfully covers the toughest areas to reach. Owing to its versatility, Alesta® ZeroZinc Uniprime eradicates the need for multiple primers. It can be used on every substrate, regardless of its properties. Just a handful of the substrates Uniprime works well on include black steel, galvanised steel, metallised steel, and aluminium. Its application is simple, and it facilitates better stock control and increased productivity.

Alesta® ZeroZinc Uniprime - formulated with epoxy resin - is designed to meet the following criteria:
- Stable, robust application (application and oven-baking)
- Coating coverage for inaccessible or hard-to-reach areas
- Excellent anti-corrosion performance (ISO 12944-6 standard)
- Degassing performance



HDC TECHNOLOGY ★★★

High Density Crosslinking (HDC) technology is at the heart of Alesta® ZeroZinc anti-corrosion primers. The technology enhances the primer as a barrier to produce a completely sealed coating that isolates the substrate from its environment, rendering it impervious to harmful elements.

quali steel coat
International Quality Label for Coated Steel

Qualisteelcoat approved
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.

Thermosetting technology

Alesta® AP Qualisteel

Alesta® AP Qualisteel is an exceptional single-layer system featuring first-rate degassing properties for porous steel substrates like galvanised steel and zinc thermal sprayed steel. Designed with top-of-the-line corrosion protection in mind, AP Qualisteel features high UV stability and is available in a wide range of colours.

Alesta® Epoxy Polyester

Specifically formulated for industrial applications, Alesta® EP is a powder coating designed for various substrate applications.
Alesta® EP is a polyester resin-based range that offers excellent corrosion protection and resilient mechanical properties. However, due to its limited UV resistance, it is not intended for substrates exposed to external elements without a topcoat.

Alesta® EP Functional Prime and Functional Antigassing Prime are a great compromise if you're looking for a premium protection, economical primer.

Application examples
AP Qualisteel can be applied to a diverse array of structures, including steel constructions, machinery, outdoor furniture, lighting, fencing, and greenhouse structures.

Anticorrosion performance
As a single-layer system with high UV stability, AP Qualisteel is powerful enough to withstand up to C4 corrosive environments in accordance with the ISO12944-6 standard.

More information: www.axalta.com/qualisteel

Application examples
Alesta® EP is suitable for steel constructions, machinery, outdoor furniture, lighting, fencing and greenhouse structures.

Anticorrosion performance
Alesta® EP can withstand up to C4 corrosive environments in accordance with the ISO12944-6 standard. Still, applying an additional topcoat (for premium protection) is highly recommended, particularly where outdoor use is unavoidable.

More information: www.axalta.com/alesta-ep

Systems of application

Electrostatic spray	Specific grade	General thickness
	Alesta® AP Qualisteel	60-80 µm

Electrostatic spray	Specific grade	General thickness
	Alesta® AP Epoxy Polyester	60-80 µm

Liquid technology

AquaEC™

AquaEC™ Electrocoat primers rely on patented epoxy-isocyanate-based technology to provide an ultra-corrosion resistant coating. High throwing power ensures a uniform coating process, which is especially important for complex part configurations and when operating with high rack densities. In this way, AquaEC™ electrocoat primers protect the most inconvenient, hard-to-access surfaces.

AquaEC™ is the solution for uniform coating of mass-produced part surfaces – from simple to highly complex geometries. Its single step process coats every surface with an equally thick level of protection every time.

AquaEC™ 3500 EP – Axalta's new generation of cathodic electrocoat – is a major leap forward in edge corrosion protection. Rather than reinvent the wheel, it builds on the benefits of our renowned AquaEC™ 3000 series. Consequently, it's a tin-free product with no toxic heavy metals and works at a low curing temperature.

Key features and benefits

- Uniform 15µm to higher than 35µm coating thickness
- Superior anti-corrosion performance at sharp edges
- Perfect for large series and/or complex geometries
- Precise film build over complex metal shapes and rack densities
- Optimum interior/exterior coverage, low-bake temperatures (150°C)
- Robust operation window
- Stable UF flux rate
- Exceeds the most rigorous specification requirements for salt spray and various accelerated corrosion tests
- Lead and tin-free, HAPS-free, low VOCs and IMDS listed

quali steel coat
International Quality Label for Coated Steel

Application examples

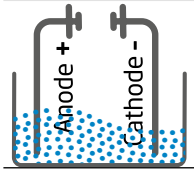
Electrocoat AquaEC™ is recommended for automotive parts and accessories, agricultural and construction equipment, general industry, and industrial job coaters.

Liquid Spraying - Customized solution are possible on demand

Anticorrosion performance

Electrocoat AquaEC™ can withstand up to C5 corrosive environments in accordance with the ISO12944-6 standard depending on the substrate type and surface preparation with powder.

System of application

Electrodeposition	Specific grade	General thickness
	AquaEC™	Thin coating film (15-30 µm) High film build coating > 35 µm

More information: www.axalta.com/ecoat-emea

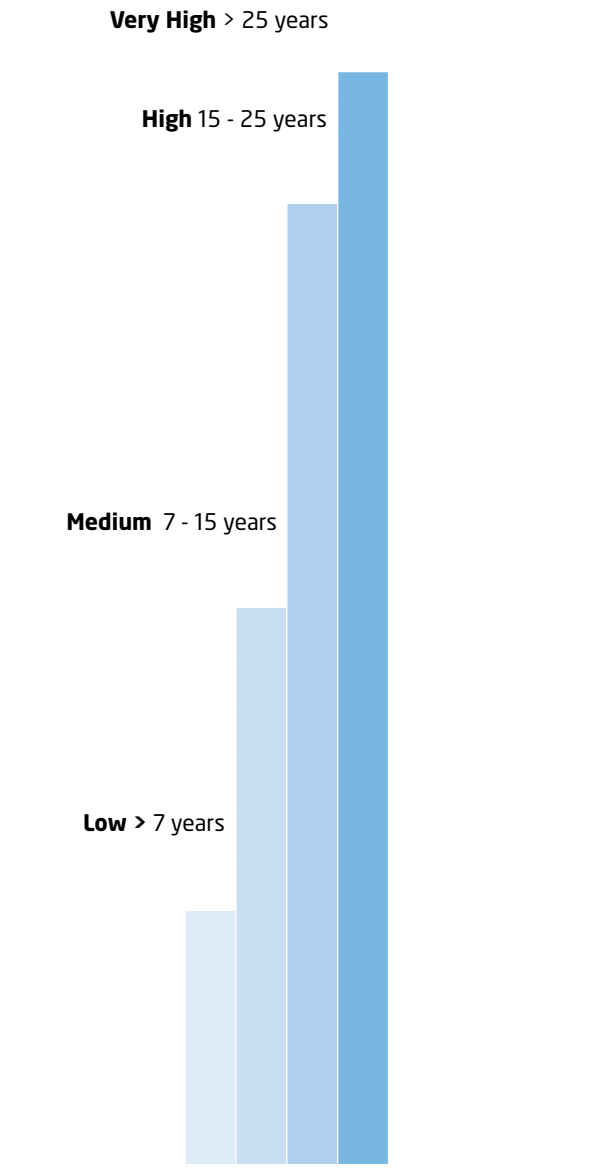
Summary vs Category

Substrate	Coating Systems		Corrosion Category			
	1 - Layer	2nd- Layer	C1	C2	C3	C4
Mild Steel Chemical/Mechanical Surface Treatment	Abcite®		Very High			
	Plascoat® PPA 571		Very High			
	Plascoat® PPA 742	Alesta® IP, AP, SD	Very High			
	AquaEC™ 3500EP	Alesta® IP, AP, SD	Very High			
	AquaEC™ 3500EP		Very High			High
	Alesta® ZeroZinc UniPrime	Alesta® IP, AP, SD	Very High			High
	Alesta® ZeroZinc Steel Prime	Alesta® IP, AP, SD	Very High			High
	Alesta® ZeroZinc Edge Prime	Alesta® IP, AP, SD	Very High			High
	Alesta® EP Functional	Alesta® IP, AP, SD	Very High			Medium
	Alesta® IP, AP, SD		Very High		High	
Hot Dip Galvanised steel Chemical/Mechanical Surface Treatment	Abcite®		Very High			
	Plascoat® PPA 571		Very High			
	Plascoat® PPA 742	Alesta® IP, AP, SD	Very High			
	AquaEC™ 3500EP	Alesta® IP, AP, SD	Very High			High
	AquaEC™ 3500EP		Very High			Medium
	Alesta® ZeroZinc Antigassing Prime	Alesta® IP, AP, SD	Very High			
	Alesta® ZeroZinc UniPrime	Alesta® IP, AP, SD	Very High			
	Alesta® EP Functional Antigassing	Alesta® IP, AP, SD	Very High			
	Alesta® AP Qualisteel		Very High			High
	Alesta® IP, AP, SD		Very High			High
Zn or ZnAl Metallised steel	Abcite®		Very High			
	Plascoat® PPA 571		Very High			
	Plascoat® PPA 742	Alesta® IP, AP, SD	Very High			
	AquaEC™ 3500EP	Alesta® IP, AP, SD	Very High			High
	AquaEC™ 3500EP		Very High			Medium
	Alesta® ZeroZinc Antigassing Prime	Alesta® IP, AP, SD	Very High			
	Alesta® ZeroZinc UniPrime	Alesta® IP, AP, SD	Very High			
	Alesta® EP Functional Antigassing	Alesta® IP, AP, SD	Very High			
	Alesta® AP Qualisteel		Very High			High
	Alesta® IP, AP, SD		Very High			High
Cast Iron	Abcite®		Very High			
	Plascoat® PPA 571		Very High			
	Plascoat® PPA 742	Alesta® IP, AP, SD	Very High			
	AquaEC™ 3500EP	Alesta® IP, AP, SD	Very High			
	AquaEC™ 3500EP		Very High			High
	Alesta® ZeroZinc UniPrime	Alesta® IP, AP, SD	Very High			
	Alesta® IP, AP, SD		Very High			High

The above information is based on our experience gained with Axalta Coating Systems, and does not incur any responsibility for Axalta. Please consult us in order to gain advice appropriate to each specific requirement. And please note that a durability range is not a "guarantee period": rather, it is an item of technical information on the basis of which it is possible to select a system and/or establish a maintenance program. Regular maintenance of treated components will maximize durability.

C5	CX	Coating System Thickness
		400µm
High		250µm
High		Primer 250µm + Topcoat 70µm
High		Primer 35µm + Topcoat 70µm
Medium		35µm
Low		Primer 70µm + Topcoat 70µm
Low		Primer 70µm + Topcoat 70µm
Low		Primer 70µm + Topcoat 70µm
		Primer 60µm + Topcoat 70µm
		70µm
		400µm
High		250µm
High		Primer 250µm + Topcoat 70µm
Medium		Primer 35µm + Topcoat 70µm
Low		35µm
High		Primer 70µm + Topcoat 70µm
High		Primer 70µm + Topcoat 70µm
High		Primer 60µm + Topcoat 70µm
		70µm
		70µm
		400µm
High		250µm
High		Primer 250µm + Topcoat 70µm
Medium		Primer 35µm + Topcoat 70µm
Low		35µm
High		Primer 70µm + Topcoat 70µm
High		Primer 70µm + Topcoat 70µm
High		Primer 60µm + Topcoat 70µm
		70µm
		70µm
		400µm
Medium		250µm
High		Primer 250µm +Topcoat 70µm
High		Primer 35µm + Topcoat 70µm
Medium		35µm
Medium		Primer 70µm + Topcoat 70µm
		70µm

C1	Heated buildings with clean atmospheres e.g. offices, shops, schools, hotels
C2	Unheated buildings e.g. storage facilities, sport halls
C3	Production hall with high humidity and air pollution e.g. laundries, dairies, food processing plants
C4	Chemical plants, swimming pools, coastal ship and boatyards Industrial and inshore areas with medium salinity
C5	Areas with almost permanent condensation and high pollution Coastal areas with high salinity
CX	Areas with extreme humidity and aggressive atmosphere Coastal areas with high salinity



Design recommendation

Right from the initial stages of your project, the structure's overall design is key. Not only does it facilitate surface preparation, application, and inspection, but it also makes maintenance easier and more predictable further down the road.

Where coating is required, several elements play a decisive role in the general design of the structure or part, along with the initial condition of the metals.Topics like surface preparation, coating, and inspections are essential, but thought must also be given to subsequent maintenance. The aim is to achieve the structure's durability potential (= service life) through carefully considered design, an optimised, suitable coating system, and regular maintenance.
There are three main steps to each design, and each step includes a set of key recommendations.

01
Parts delivery

Initial part conditions
The surface state of the metal used to produce a part plays a vital role in the aesthetics and durability of the coating system; surface defects can lead to scoring and performance defects.

Sharp edges
Depending on the thickness and/or the method used, the cutting phase can create sharp edges, often poorly protected by coating systems and more vulnerable to corrosion.

Deburring
If poorly performed, certain metal processing operations can lead to burrs (cutting, machining, perforating, etc.).

Perforations
If corrosion resistance is a top priority, then coating perforated sheet metal is not recommended.

02
Assembly

Material combinations
After coating, combinations of different material types or compositions may result in visual anomalies (e.g. a combination of steel and galvanised steel) and/or poor corrosion resistance (galvanic corrosion).

Welds
Welds must not exhibit roughness, icicles, porosity, craters, or have oxidised. Ad hoc treatment can be used to eliminate any defects.

Voids
Voids (e.g. narrow spaces, cracks, air gaps) are potential sources of corrosion. Small spaces are frequently inaccessible or resistant to treatment or coating.

Retention zones
Initial structure/part design ensures that there are as few liquid retention or stagnation zones (tubes, hollows, flat areas) as possible, and this with a view to its use and treatment prior to powder coating.

Stiffeners
The entire perimeter of the join must be welded to prevent voids.

Hanging points
Hanging points must be defined at the design stage to ensure proper part handling and effective treatment.

Moving parts
Equipment with detachable, moving parts can conveniently be coated separately, leaving a sufficient clearance for the coating density.

03
Finishing

The final production stage preceding corrosion protection and/or coating is the finish. This operation includes burr removal, cleaning weld beads, and correcting surface imperfections (i.e. blending and smoothing).

More information: www.axalta.com/antico-design

Cost considerations

In terms of assessing project costs, there are several elements to consider. However, the main costs usually consist of substrate, coating, energy, labour, maintenance costs. Nevertheless, depending on the anti-corrosion system you select, these costs will be weighted differently.

The main points to consider:
1. Coating Material
2. Metallic substrate
3. Surface treatment
4. Energy
5. Labour
6. Maintenance costs & life span

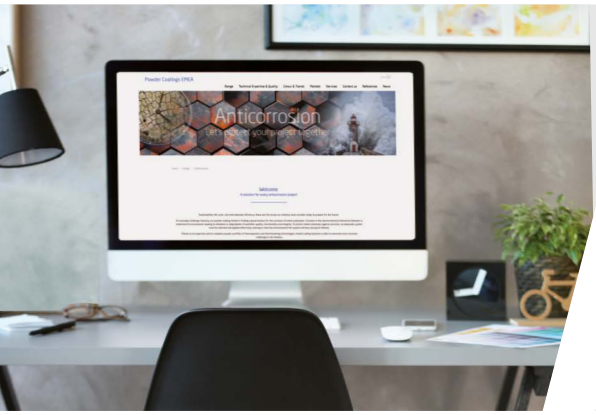
Please get in touch with your local sales engineer if you need help drawing up a detailed project budget. Our team can assist with defining the various cost factors and point you towards the best coating solution for your project.

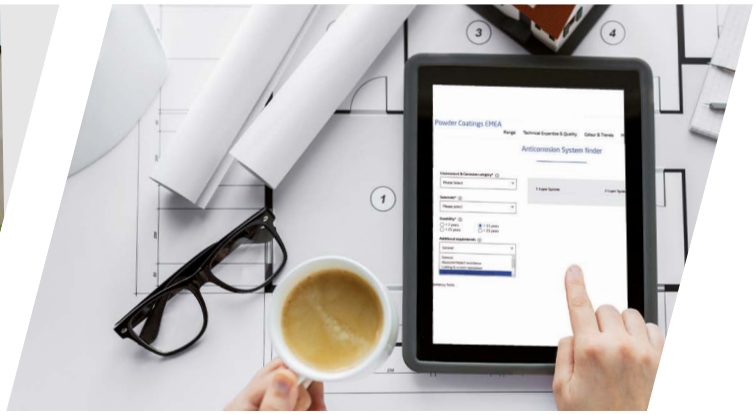
More information:
www.axalta.com/antico-cost

Digital tools

There's no doubt about it – technology, products, and markets are evolving at breakneck speed. And keeping up with all those changes can be an enormous headache, especially when you urgently need the right solution to protect your product and ensure business continuity. With this in mind, we've come up with a range of digital tools and resources to keep you informed of the latest developments in coating technologies and products. That way, you have rapid access to anti-corrosion-related information that's always accurate and up to date.

So, what do we have in store





Website

Corrosion is a tricky topic to understand. The complexities involved often make it hard to know the best solution, how to tackle specific issues efficiently, or where to find the relevant information you need.

Since our customers are priority number one and anti-corrosion techniques, products and information are our core business, we decided to create a website that provides you with the latest, accurate information.

The anti-corrosion website is a one-stop resource for anyone – from rookie to expert – looking for anti-corrosion facts, tips, advice, products and services. Axalta shows you the ropes, from getting started (the basics) and product ranges for specific applications to recommendations tailored to your project. We accompany you through the whole process to ensure that your parts benefit from the best protection.

Even better, the website is constantly updated. That means you can stay on top of the latest anti-corrosion technology solutions and learn about the latest colours and trends. At the end of the day, your surfaces will be more durable and radiate a clean, professional look.

www.axalta.com/anticorrosion

Product Selector

What happens after you've browsed through our website, selected your substrate, and identified the environment and unique factors associated with your anti-corrosion project? Naturally, you need to figure out which anti-corrosion system offers the best protection for your project.

That's what our unique digital product selector comes in!

The process is simple. Select and configure your project's criteria, and we'll match it to the system that offers the best corrosion protection. At the same time, you retain complete control over the final selection. The Axalta product selector provides you with detailed specifications and product information so that you can make your decision fully informed of every product's pros and cons.

Check it out by yourself:
www.axalta.com/antico-productselector

Videos

Images are worth more than a thousand words.

When choosing a system to safeguard your components and structures against corrosion hazards optimally, you want to see the products in action. And that's why our website features a library of technical videos.

Axalta gives you the opportunity to watch our powder coating products undergo various lab tests. That provides you with the visual proof you need to choose a product you know will stand the test of time and radiate a professional aesthetic.

And if your project requires a specific test, you can see right away which powder is right for you.

www.axalta.com/anticorrosion

Further information about anticorrosion:

www.axalta.com/anticorrosion
www.axalta.co.uk/anticorrosion
www.axalta.se/anticorrosion
www.axalta.cz/anticorrosion

For questions please contact us via our websites:

Powder Coating Thermosetting
www.axalta.com/powdercoatings-emea

Powder Coating Thermoplastic
www.axalta.com/thermoplastic

Electrocoat
www.axalta.com/ecoat-emea