

# Hydrophobic paint & Coatings

METAL TYPES



# How does corrosion occur?

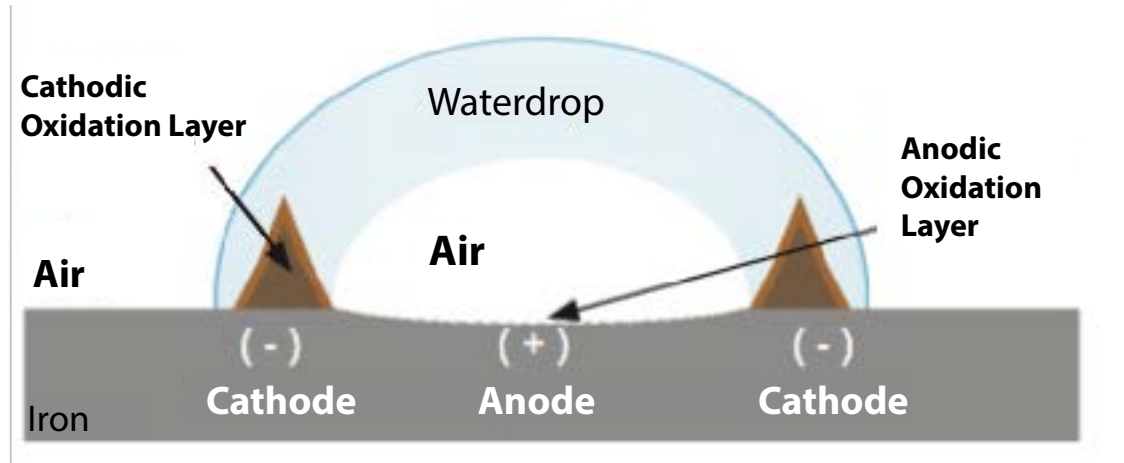
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- Corrosion is an electrochemical process in which metal is anodically dissolved and deposited at the cathode as metal oxide or hydroxide.
- This may seem complicated, but it is a simple and easy-to-understand process, which will be explained below on a few small graphics.
- If you understand the corrosion process, then you will also understand why zinc forms an outstanding corrosion protection for iron.
- Dripping 1 drop of water on an iron sheet, then atmospheric oxygen penetrates into the drops and it forms an oxygen-rich and an oxygen-poor drop zone, a so-called ventilation element

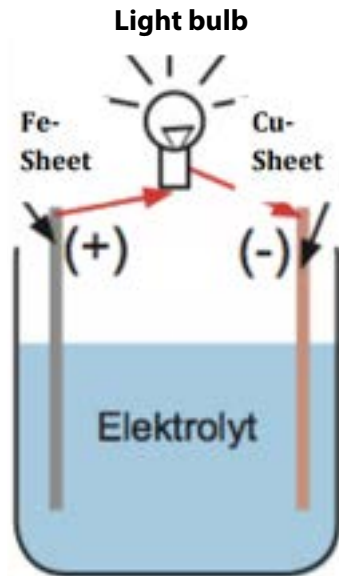




- In the region of the oxygen-rich drop zone, this forms a negative charge zone (cathode) in the iron. In the oxygen-poor drop zone, the positively charged iron zone (anode) is created.
- If you place this test sheet in a container with high humidity (eg saucepan with lid and a wet sponge) the drop does not evaporate. Then you will see after a few hours that it forms a brown ring of rust in the outer area of the drop



- It has formed a so-called galvanic element similar to a flashlight battery. Between the anode and the cathode, an electric voltage has formed and it flows a small electric current.



- This electrical current flow is the cause of the corrosion. If you continue the experiment for a few days, then you notice that the rust deposit is getting higher and the iron is being removed within the annular rust deposit.

- The iron is dissolved at the anode, the iron ions migrate to the cathode and oxidize in the oxygen-rich drop zone to the brown rust.

- In a glass with an electrically conductive liquid, so-called electrolyte, saline, dilute acid, etc.) are an iron sheet and a copper sheet.

- Accordingly, between the "less noble" iron (electrochemical potential  $-0.41$ ) and the "nobler" copper (e-potential  $+0.35$ ) there is an electrical voltage of  $0.94$  volts and weak current flows through the electrolyte which, after all, makes a flashlight bulb shine.

- The energy is created by the degradation of the "base" iron sheet, which is gradually consumed. The "nobler" copper sheet is not attacked.

# Logic DP+

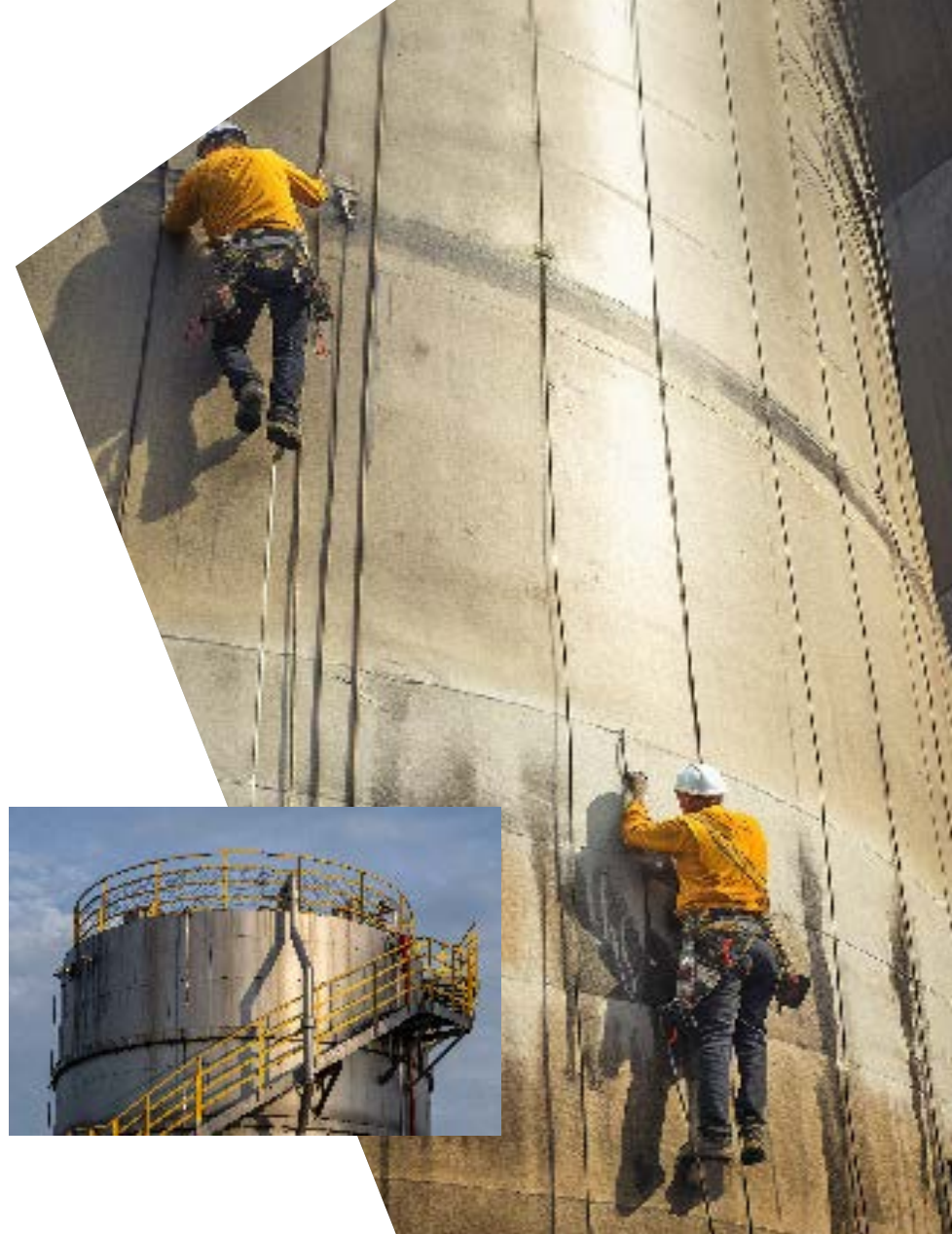
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- Epoxy zinc primer for heavy corrosion protection
- Logic DP+ is a two-component special primer comprising epoxy resin and metallic zinc powder
- Optimized particle size mixture
- First produced in 1964, continuously improved through research and studies
- Research focuses on electrochemical action of zinc for cathodic protection of iron
- Natural potential difference between iron and zinc is high, providing effective protection
- Moderators in Logic DP+ lower potential difference, reducing zinc removal rate without compromising protection
- Contains aggregates and additives to control and optimize anodic zinc degradation
- Sets apart from conventional zinc dust paints with advanced technology
- Reduces zinc reaction in undamaged layers, prolongs cathodic corrosion protection even in case of injury



# Application areas

- Logic DP+ is highly popular for applications requiring severe corrosion protection and long-lasting effectiveness.
- Provides active anticorrosive coating, offering sufficient protection even in case of minor damage like scratches or stone chips.
- Prevents corrosion spread in areas of major coating violations. Activates electrochemical reaction upon coating damage, halting corrosion propagation.
- Contrasts with passive coatings that only seal against water and oxygen, which can exacerbate damage upon injury.





# Application areas

- Suitable as sole protective coating if thickness exceeds 100 micrometers (my).
- Can be used as active primer for decorative paints or corrosion protection under seawater.
- Epoxy resin binder ensures excellent adhesion to steel substrate, serving as a bonding layer for subsequent coatings.
- Ideal for steel structures, tanks, pipelines in various industries including petrochemical, mining, steel-hydraulic engineering, shipbuilding, and plant construction.
- Cured layer exhibits high resistance to fresh water, seawater, weather, aliphatic hydrocarbons, aromatics, alcohols, oils, fats, mineral oils, and synthetic lubricants.

# Logic DS

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- Logic DS is a solvent-borne two-component plastic coating with excellent chemical resistance.
- Specifically designed for lining tanks, large containers, pipelines, storage bunkers, and coating machines, devices, constructions against corrosive chemicals, acids, alkalis, etc.
- Formulated with a special resin featuring epoxy groups, exhibiting exceptionally low shrinkage during curing.
- Offers outstanding resistance to chemicals and good adhesion to various materials typical of epoxy resins.
- Demonstrates excellent abrasion resistance against abrasive slurries and heavy vehicle traffic (e.g., forklifts).
- Unchanged since 1961, benefiting from extensive long-term experience, reflected in the comprehensive resistance list.

