



N.V. DOTHÉE S.A.

RD-COATINGS- Anti-Corrosion

Composition: Leon Bancken

Damaging of metals through corrosion

- A. Corrosion
- B. How to remove?
- C. How to treat?
- D. Our products
- E. Warranty





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A. CORROSION

- Chemical or electrochemical reaction of a metal with its surroundings.
- In the long term damage of metals

- Steel: forms RUST
- Zinc : forms ZINKOXYDE

- Iron ore contains the same iron oxide as rust (equilibrium)

- CORROSION + RETURN OF IRON (METAL FORM) TO A CHEMICAL AND STABLE STATE.

B. ATMOSPHERIC INFLUENCES ON THE CORROSION.

- AIR OXYGEN
 - Air = 20% Oxygen
 - Oxygen + H₂O + Iron = RUST
 - Metal in contact with oxygen-free water or dry oxygen = no or very little rust

- HUMIDITY
 - Oxygen + H₂O+ soluble salts (Cl⁻) create an electro chemical environment which is creating corrosion by means of a weak electrical current.
 - below a certain relative humidity (RH), there is very little corrosion.
Example: desert or mountains.

- TEMPERATURE
 - High temperature = Acceleration of corrosion and oxidation.
 - The reaction speed is doubled every 10 ° C
 - intense heat + high humidity. = increase in oxidation of the metal or accelerated corrosion.
 - thermal shock = severe risk of accelerated corrosion in subtropical countries including equator:





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contact temperature 60 ° C to 95 ° C and cooling at night + condensation

○ AIR POLLUTION

- Sulfur dioxide (SO₂) the most dangerous pollution of our atmosphere .
- SO₂-caused by burning coal-fuel electricity generation in thermal power etc.
- SO₂ = millions of tons per year = this is the ACID RAIN
- SO₂ + humidity = SULFURIC ACID
- Sulfuric acid + O₂ + H₂O of the air = formation of acids
- Acid gases by burning fuel, eg diesel cause nitrogen gas + O₂ + H₂O = nitrous acid
- these two types of acids form electrochemical cells in which the metal corrosion can develop.
- salt spray = high because of the effects of aggressive chlorides

CONCLUSION:

- Salt spray doubles the corrosion rate
- SO₂ + nitrous oxide dissolved in water under the form of acid quadruples the corrosion rate.

THAN WHAT TO SAY ABOUT A COMBINATION OF BOTH?

C. HOW TO TREAT?

- Pretreatment:
 - High pressure cleaning (200-300 bar) or high pressure cleaning (1400 to 2000 bar)
 - Degreasing: chemical or not
 - Sand blasting: complete removal of the mill scale
 - galvanizing: thickness?

Zinc oxide and zinc metal form a protection





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- TREATMENT
 - Epoxy-food non-food
 - Polyurethane
 - Chlorinated rubber
 - special resins such as modified acrylates.

D. OUR PRODUCTS

- Synthetic:

RD-METALPRIMER FD (see data sheet)

- Fast drying (max. 1 hour)
- Excellent adhesion to steel
- High corrosion resistance
- Can easily remain without any topcoat

RD-PU Primer

- Excellent adhesion to steel, aluminum, zinc, galvanised surfaces
- High physical resistance
- indoor and outdoor use
- System:
 - 1 coat of RD-PU PRIMER
- Finish: 1 or 2 coats RD-PU PU Satin or RD-PU GLOSS

- Waterborne:

RD-METAL UNICOAT.

- Excellent adhesion to steel
- Fast drying (max 1 hour)
- High corrosion resistance
- Very good outside sustainability.
- System:
 - Primer: 1 coat of RD-Metal Unicoat
- Finish: 1 coat of RD-Metal Unicoat





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RD-ELASTOMETAL:

- The universal weapon against rust.
- universal applications
- Excellent adhesion to iron, steel, galvanized surfaces etc.
- Waterproof with a permanent elastic film.
- A unique coating with an impressive lifespan.
- System:
 - Primer: 1 coat of RD Elastometal
- Finish: 1 coat of RD-Elastometal.

E. WARRANTY:

Commitment from the manufacturer and the contractor for a warranty (usually five or ten years)

Expressed as a corrosion rate for the European rust grade standards

- Factory Guarantee
- Insured guarantee in cooperation with a European insurance company.

