

# Useful Information



2204.00

## QUESTION

**What are corrosion categories and how is corrosion protection provided in gearboxes?**

## ANSWER

Corrosion is the state of wear, decay or rusting of metals and metal alloys due to oxidation or other chemical effects. The causes of corrosion may vary depending on the mechanisms of action such as low or high humidity, dirt, oil or chemicals in industrial environments where gearboxes are used. For example; while gearboxes operating in environments close to water such as shipyards are exposed to high humidity and temperature, they can also be affected by acidic corrosive chemicals in tanks where liquid materials are mixed.

In addition to the standard protection against corrosion and external environmental effects (C2 Corrosion category), we can supply additional surface protection within the three categories specified in the DIN EN ISO 12944-2 standard (C3, C4, C5-I/C5-M) for our gearboxes that will operate indoors or outdoors and in harsh working conditions.

The paints used in the categories specified in the above standard are applied in two layers in the C2, C3 and C4 categories, and in three layers in the C5-I/C5-M category. The task of the primer layer applied to the metal surface is to ensure adhesion. The second layer plays an important role in increasing the strength of the paint and preventing water permeability. The third, that is, the top layer, prevents the permeability of water vapor and also protects the paint layer against external effects.

Thus, a solid and impermeable shell is formed on the gear unit body and the contact between the metal surface of the gear unit and its surroundings is cut off and reaction is prevented.

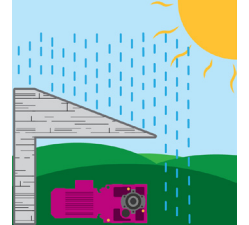
### C2 (standard)

Environmental Conditions:

Indoor and enclosed outdoor environment  
Working environment with low humidity and pollution

Paint Type and Thicknesses Used:

Two Component Primer: 60 µm  
Acrylic Topcoat: 40 µm



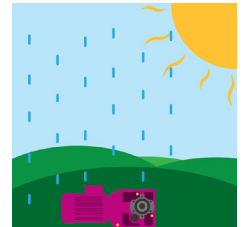
### C3

Environmental Conditions:

Indoor and outdoor environment  
Working environment with moderate humidity and pollution

Paint Type and Thicknesses Used:

Epoxy Primer: 80 µm  
Acrylic Topcoat: 40 µm



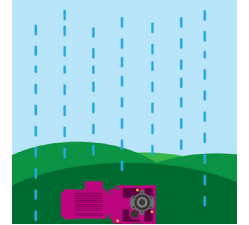
### C4

Environmental Conditions:

Indoor and outdoor environment  
Working environment with high humidity and chemicals in general

Paint Type and Thicknesses Used:

Epoxy Primer: 180 µm  
Acrylic Topcoat: 40 µm



### C5

Environmental Conditions:

Indoor and outdoor environment  
Working environment with constant high humidity and chemical cleaning

Paint Type and Thicknesses Used:

Zinc Loaded Epoxy Primer: 70 µm  
Epoxy Primer Miox: 150 µm  
Acrylic Topcoat: 40 µm

