

## GSB News



**Dear members of the GSB,**

today, it is all about corrosivity categories for steel and galvanized steel.

As always, we hope you enjoy reading this special issue.

Your GSB Team



## Technology

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### Corrosivity Categories: Steel and galvanized Steel

Today we deal with the corrosivity categories that can be achieved by GSB-certified coaters for the substrates steel and galvanized steel.

For aluminium, we divide into three groups in our quality regulations according to ISO 9223: Coater without additional seal (C3), with additional seal Sea Proof (C4) and with additional seal Sea Proof Plus (C5). This classification for steel is much more complex at this point, which is why we are dedicating an entire special issue to this topic. In contrast to aluminum, steel must be protected against external influences. Aluminium surfaces automatically develop an oxide layer when they come into contact with oxygen. This layer passivates the surface and protects the light metal from atmospheric influences.

The substrate steel does not have a self-protecting ability. If unprotected steel comes into contact with water and oxygen, rust is the result. The steel must therefore be protected from external weather influences. This can be done in several ways. A coating can be applied, as it is practiced by GSB-certified coaters. On the other hand, the steel can also be galvanized. Last but not least, both methods can be combined. In this case, galvanized steel is given an additional coating. This duplex process is used by our coaters certified for galvanized steel.

In the steel segment, corrosivity categories from C2 to C5 are defined. In addition, a differentiation is made between the protection times that a coating can achieve within the given corrosivity category. These are (ISO 12944-1, E-DIN 55633-1, DIN 55634) :

- Low: up to 7 years
- Medium: 7 to 15 years
- High: 15 to 25 years
- Very High (only achievable in categories C2 to C4): over 25 years

Put in simple terms, the corrosivity category defines the environmental influences to which a coated component is exposed, and the protection period indicates how long the coating protects the steel before it has to be renewed.

In the field of steel, the durability of protection in each corrosivity category depends on a variety of factors. These are the pretreatment or preparation of the surface, a possible primer coating, various parameters of the top coating and the coating system.

In the case of steel, there are consequently many possible combinations. In the general part of our quality regulations, you will find an overview table under point 7.3 "Recommendations on the coating of components: Steel and galvanized steel". [Link Quality Regulations: General Part](#)

**At this point, it should be mentioned that the specific tender or contract must always be**

**considered individually.**

**The protection period is not a warranty period.**

As a reminder: As already explained in the last News, the classification (Florida 1, 3, 5 and 10) of the coating material has no influence on the corrosivity category that can be achieved, because this describes the UV resistance and the proven residual gloss. This applies equally to aluminum, steel and galvanized steel and regardless whether a coater carries the Standard, Master or Premium seal, the company can choose from all GSB-certified coating materials. This also applies to aluminum, steel and galvanized steel.

For more in-depth questions, please feel free to contact Philipp Mader:

[philipp.mader@gsb-international.de](mailto:philipp.mader@gsb-international.de)



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