

# Information For Customers On Corrosion



## What Is Corrosion?

Corrosion is the result of a chemical reaction caused by the physical interaction between metal and its surrounding environment – water, air or other substances (see DIN EN ISO 8044).

Several factors affect the rate of corrosion and its forms making it very difficult to predict and retrace. This means that although it cannot be entirely prevented, the rate at which it occurs can be slowed down.

## Corrosion Control Recommendations And Measures

- **Corrosion Control Using Different Surface Conditions**

The following options of surface conditions are available:

### Untreated

Sections/products are generally supplied in line with customers' further processing requirements and needs, in as dry a state as possible. Oil and moisture residue retained from the production process does not provide these sections/products with any short term corrosion protection. This type of surface condition is not suitable for transportation over long distances (and where there are possible temperature variations) or storage for long periods of time.

### Greased

If required, sections/products are coated with a layer of oil, which provides them with temporary corrosion protection for a period of 1-2 weeks. Customers can rest assured that the oil coating will not have any negative effects on the intended use of the sections/products.

- **Corrosion Control By Use Of Appropriate Packaging**

The type of packaging used is determined by the corrosion protection and its related cost.

### Corrosion Protection Film Packaging

Corrosion protection films are recommended for long term storage. Typical applications include storage from 4 weeks up to a maximum of 12 months and transportation overseas provided that no additional corrosion protection measures are in place e.g. packaging in containers. The films are **neither** heat sealed **nor** are they UV resistant. It is for this reason that they are suitable for indoor storage only.

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Additional packaging is provided, in order to protect the film against damage from machinery such as forklift trucks, this includes timber or propylwell covers and bases or steel and wooden crates.

## Shrink Wrap Packaging

A further example of corrosion protection packaging is shrink wrap. The shrink wrap is heat sealed, which means it is both air and water tight, although as with all PE films, it is susceptible to moisture. This type of film is UV resistant and also suitable for outdoor storage (protected under a canopy for example – to prevent heat accumulation and avoid exposure to high temperatures). Additional packaging is also brought in here to provide protection from potential damage caused by machinery (see Corrosion Protection Film Packaging).

The following basic principle applies: It is essential that the products Welsler supplies are protected from any sudden changes in temperature. The film packaging may only be opened when the temperature within the packaging itself is equivalent to the temperature of its surrounding environment.

- **Corrosion Control Measures For Transportation And Storage**

It is important that adequate protective measures are in place to combat moisture during transportation. Sudden changes in temperature should also be avoided, because in this case there is a risk of condensation developing on the surface of the section/product.

Please Note: The appearance of condensation often goes unnoticed. It occurs when moist, warm air cools as it hits cold surfaces e.g. if sections are moved during Winter from unheated storage spaces into heated spaces/halls.

If condensation does occur, the affected sections/products should be dried immediately. In such instances, the packaging should be opened and the sections/products separated. Whether there are small droplets or large pools of water, they are to be removed immediately.

It is recommended that sections/products are stored in sealed warehouses, ideally in temperature controlled storage conditions.

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## Liability:

- *“Welser Profile shall not be liable for corrosion damage caused by failure by the customer to transport or store the goods correctly.”*
- *Welser Profile shall provide a guarantee exclusively if the customer has carried out a full inspection of the sections/products upon their arrival.*

## **Related Literature For Your Reference:**

*Norm ISO 8044:1999 – Corrosion of metals and alloys – Basic terms and definitions.*

*Merkblatt 114: Verpackung, Lagerung und Transport von unbeschichtetem und beschichtetem Band und Blech; Stahl Informationszentrum, Düsseldorf 2010*

*Merkblatt 127: Beölung von Feinblech in Band und Tafeln; Stahl Informationszentrum, Düsseldorf 2006*

*Tostmann Karl Helmut, **Korrosion** Ursachen und Vermeidung, Wiley – VCH, Weinheim 2001*