Material data and care instructions
Stainless steel

Notes on using products made of stainless steel from
Richard Brink GmbH & Co. KG

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**Do you have any questions?
We will be pleased to help you!**

The steel type 1.4301 is used as standard with our stainless steel products. Depending on the area of use, we can also offer a wide range of alternative steel types. Just ask us and we will be pleased to help you. Stainless steel 1.4301 (also generally known as “V2A”) stands out due to its excellent processing attributes and corrosion resistance. Despite this, however, certain points should be taken into account and complied with during the use and care of this stainless steel.

1. Where does the corrosion resistance come from and are there limitations?

With stainless steel, the corrosion resistance is based on a chemical process which takes place on the surface, through which an oxide coating (“passive coating”) is formed. This passive coating prevents the material underneath from corroding. If this coating is removed, for example, it is ground away, under the influence of oxygen in the air, or when in water, the coating reforms, and the material underneath it is protected again. With the development and sustainability of this passive coating, it is possible for different varieties of steel to have different advantages or disadvantages.

Normal structural steel is not able to develop a protective passive coating. With structural steel, progressively advancing corrosion occurs directly (known as “red rust”).

2. Contact with steel which is not rust-free makes the stainless steel vulnerable!

When handling and processing stainless steel it is always necessary to ensure that no direct contact between rust-free stainless steel and stainless steel which is not rust-free occurs. In this context it is necessary to pay consideration to tools which may be contaminated with splinters or abrasion. If steel which is not rust-free comes into contact with rust-free steel, the base steel will remove key components from the passive coating on the stainless steel. This will cause the stainless steel to corrode.

3. Salt can damage stainless steel, but not always!

Even if stainless steel is largely to be viewed as being corrosion resistant, it is still necessary to pay special attention, especially in the event of intensive contact with salts. The resistance towards salts depends strongly on the choice of the material. The material type which we use, 1.4301, offers a very wide range of uses. The level of salinity that occurs away from coastal areas generally poses it no problem. This material is also a good choice for use in water drainage areas which can be expected to be exposed to a normal level of road salts, although it is still a good idea to check the compatibility of the road salts with the stainless steel. If road salts enter into drainage channel made from stainless steel, cleaning these regularly with desalinated water is recommended (e.g. tap water) in order to prevent any salty water from collecting.

With use in the direct proximity of coastal regions (impact of salty air and spray), in areas which are affected by road salts or similar for extended periods (e.g. when salty water collects), or in areas where regular exposure to industrial salts or cooking salts is to be expected, an alternative material may have to be used. In such areas the material type 1.4401 (material group V4A) is recommended, for instance, since it is considerably more resistant to salts due to its differing alloy content. We will be pleased to provide you with corresponding advice.

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4. The cleaning, care and treatment of stainless steel (1.4301):

- Stainless steel surfaces require regular cleaning and need to be checked for changes (at least once or twice a year).
- After cleaning, it is important to remove the cleaning agent residues on the product and the surrounding areas with clear water.
- Use a cleaning product containing phosphoric acid in order to remove tramp iron particles.
- Do not use a cleaning product containing chlorine under any circumstances.
- With polished surfaces: always clean parallel to the polished finish.
- Only use non-ferrous cleaning products, never bring the surfaces into contact with tools which are not rust-free (scrapers, files, ...), with ferrous sponge products, or with steel wool which is not rust-free.
- Remove protective film in good time, otherwise the film may stick to the surface of the steel. Remove adhesive residues with white spirits. The removal is easier when the steel has been warmed a little.
- Remove lime and plaster residues with phosphoric acid and rinse thoroughly with clean water. Do not use cement residue remover or diluted hydrochloric acid under any circumstances.
- Avoid exposing the material to high levels of heat (e.g. through processing with an angle grinder, drilling without drilling emulsion, plasma cutter, impact of fire, ...).
- Prevent sparking occurring on stainless steel surfaces.
- Fresh welding points require corresponding subsequent treatment.
- Particles of iron must be removed immediately as otherwise they can penetrate the passive coating of the stainless steel and cause corrosion. To this end, it is possible to use ferrite-free cleaning sponges or similar. If corrosion has already set in, a pickling treatment may be required.
- Remove flash rust immediately.
- Check the compatibility with road salts.
- Oil and grease can be removed with organic cleaning products. At the same time, the cleaning product should also be removed, leaving no residues behind.
- Paint residues can be removed with alcohol- or solvent-based products. At the same time, the cleaning product should also be removed, leaving no residues behind.
- Prevention of extraneous rust:
  - Ensure the processing of steel and stainless steel is spatially separated.
  - Use separate tools for stainless steel, or ensure all particles of iron have been removed from them.
  - Do not use any transport materials or lifting equipment made from steel (forklift truck, ...) or protect the stainless steel products accordingly with protective layers.