VZD – the Cr(VI)-free alternative

Sustainable surface protection from Böllhoff

BÖLLHOFF

Product information: VZD – the Cr(VI)-free alternative

Advantages of the Böllhoff coatings with thick-film passivation:

- Corrosion resistance comparable to yellow chromated
- Environmentally friendly and non-toxic
- High availability / stock parts
- RoHS and REACH compliant
- Assembly advantage thanks to defined friction coefficient:
  μ_{tot} = 0.12 – 0.18
  (Compare A3C as per DIN EN ISO 4042 yellow chromated μ_{tot} ~ 0.10 – 0,30)

The post-treatment of separated zinc and zinc alloy coatings has a considerable influence on their corrosion resistance. Previously common processes frequently used chromium (VI) and are often referred to as chromating. Chromium (VI) is already banned from many industries as a hazardous substance. In addition, the substance ban on chromium (VI) as per the REACH Regulation will come into force across Europe on 21.09.2017. The reason for this is that chromium (VI) is:

- Dangerous to the environment and
- Hazardous to health/carcinogenic.

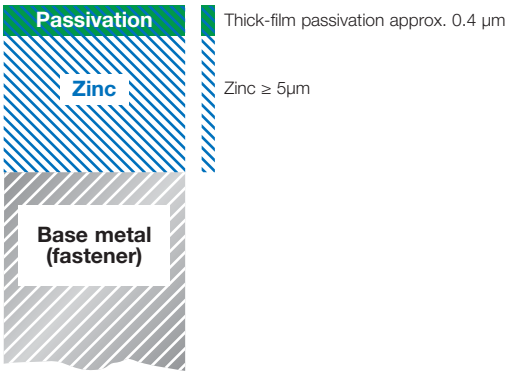
The following coating systems contain chromium (VI) and are thus directly affected by this ban:

- Yellow chromate
- Olive chromate
- Black chromate
- DACROMET®

The alternative

Quality, price and availability are the most important criteria when it comes to selecting an alternative surface. Chromium (III) thick-film passivations meet these requirements. They are state of the art, environmentally friendly and non-toxic and they provide corrosion resistance comparable to that of chromating. Chromium (III) thick-film passivation is

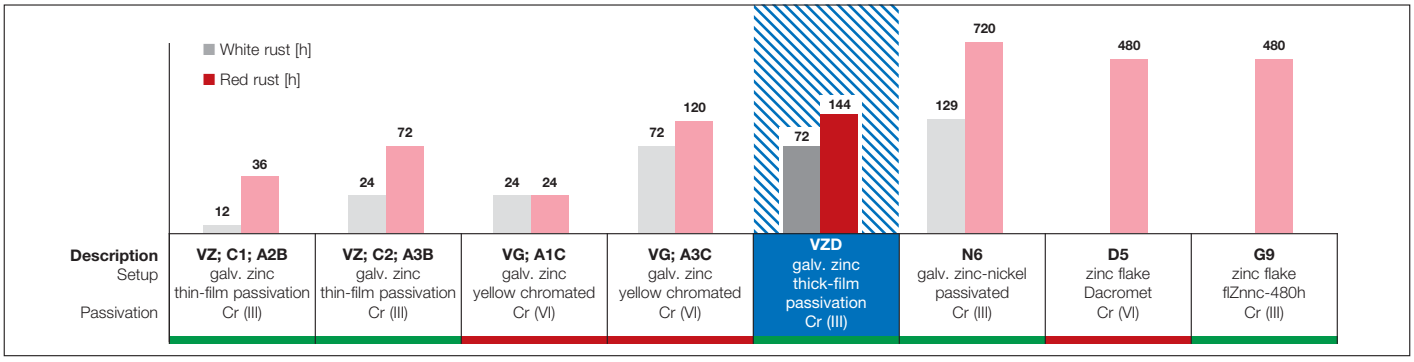
- High-quality
- Economical
- Sustainable



Of course we also offer other chromium (VI)-free coatings such as thin-film passivation and zinc-nickel. However, these coatings are either not as resistant to corrosion or they are considerably more expensive than chromate coatings.

Specifications of standard VZD surface:
Galvanically zinc-plated, thick-film passivated, min. 5jm; corrosion resistance as per DIN EN ISO 9227: White rust 72h, red rust 144h; defined friction coefficient μ_{tot} = 0.12 – 0.18 for high-tensile screws (≥ 8.8)*

*The specified requirements are tested according to ISO/CD 4042:2016: fasteners electroplated coatings. For screw thread diameters < M5 the performance in the NSS- test is slightly decreased.



Corrosion resistance of commercially available surfaces, tested in SSN test DIN EN ISO 9227 including description, layer structure and type of passivation shown logarithmically.

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