

galvanic zinc

functional and decorative



surface
technologies

galvanic zinc

Zinc is the most frequently deposited metal in surface technology. It serves as corrosion protection and provides cathodic protection for the base material. This means that the steel becomes the cathode and the zinc forms a sacrificial anode and dissolves at the imperfections of the layer. Below 100°C it is brittle, in the range of 100 - 200°C it becomes soft and elastic, above 200°C it becomes brittle again.

Metal parts are effectively protected against corrosion with galvanic zinc plating. With modern, fully automatic rack and barrel systems, we meet the highest functional and optical requirements in a reproducible manner and work in accordance with all current standards and specifications. With DIN 14001, we also meet the requirements for the conservation of natural resources and the environment.

Post-treatment processes (Cr VI-free): blue/transparent passivation, thick-film passivation, black passivation, sealings, topcoats, lubricants for wear protection and adjustment of friction coefficients.

Process description

The basis for high-quality galvanizing is electrolytic-chemical pre-cleaning through degreasing and pickling. Afterwards, the coating takes place in an acidic or alkaline electrolyte before the post-treatment(s) including the drying process complete the process. In order to produce and increase corrosion protection (zinc corrosion - white rust and base metal corrosion - red rust), a precisely adapted passivation and/or sealing can be selected - depending on the requirements or area of application.



Galvanized screws.



Galvanized threaded shafts.



Galvanized housings.

| galvanic zinc | |
|---------------|---|
| Main features | Alkaline and acid zinc processes are used. The alkaline process is characterized by good throwing power and high hanging densities. Processing of die-cast zinc as well as high-strength components is possible. The acid process is characterized by a high deposition rate and flangability (ductility). In addition, cast and forged parts can be coated. Zinc coatings provide a good base for subsequent cathodic dip painting or powder coating. The coating properties are considerably improved by zinc alloys such as zinc-iron and zinc-nickel. Corrosion protection and usage are influenced by passivations, sealings and topcoats. |
| Applications | automotive industry, mechanical and apparatus engineering, sanitary engineering, construction and fittings industry, electrical industry; fastening elements |
| Facilities | rackware: goods window 2.30 x 1.20 x 0.40 m bulk goods: modern double barrel machine up to 280 kg filling weight and 180 litres volume |
| Service | We find the optimal coating process for your components on the basis of an individual consultation. From the first sampling to the introduction into series production, we define the relevant work steps together with you. On request, we can also supplement our technical services with a tailor-made service for you, e.g. 100% inspections, packaging, logistics with pick-up and delivery service. We also offer composite production (e.g. duplex layers, screw locking / sealing). |

minimum requirements for corrosion resistance according to DIN EN ISO 19598:2017-04

| galvanic zinc | Process | DIN 9227 without coating corrosion (white rust) | DIN 9227 without base metal corrosion (red rust) | | |
|------------------------------|---------|---|--|------|-------|
| | | | 5 Qm | 8 Qm | 12 Qm |
| transparent passivated | barrel | 8 | 48 | 72 | 96 |
| | rack | 16 | 72 | 96 | 120 |
| iridescent passivated | barrel | 72 | 144 | 216 | 288 |
| | rack | 120 | 192 | 264 | 336 |
| iridescent passivated sealed | barrel | 120 | 192 | 264 | 360 |
| | rack | 168 | 264 | 360 | 480 |