

The Greenkote process is a diffusion process also known as Thermo-Chemical Surface Modification (TCSM) where the coating is applied inside a heated retort.

Benefits

- Long term corrosion protection up to 350°C
- Thickness uniformity $\pm 10\%$ maximum
- Excellent corrosion resistance in high corrosivity environments
- No danger of hydrogen embrittlement
- Damage resistant
- Conformal coating results in preload uniformity for threaded fasteners
- Excellent preparation for painting, duplex coatings, adhesives and rubber mouldings

Technical Specification

- Class of coating – PM1
- Coating specification – minimum local coating thickness 25 μ m
- Neutral salt spray resistance over 1,440 hours (corrosivity category C5 High)
- Coating loss rate in NSS testing of less than 0.01 g/m²/hr

Health, Safety and the Environment

The use of our thermal, dry powder process minimizes the environmental impact as it eliminates the use of hazardous heavy metals and other materials such as acids and organic solvents.

Unlike conventional coatings, Greenkote is totally environmentally friendly and does not produce any solid, liquid or gaseous toxic wastes. The process is also free of hexavalent chrome, cadmium, acids, cyanides or chlorides.



Process

Greenkote is a diffusion sacrificial corrosion resistant coating of Zn-Al-Fe polymetallic composition.

The coating layer forms in steps:

1. Zinc in the powder diffuses into aluminium in the powder and in turn into the iron in the surface of the substrate.
2. Iron in the substrate forms inter-metallics of ZnFe-Al.
3. Aluminium rich inclusions are formed onto the coating surface.

The thermo-chemical process forms a protective layer that partially diffuses into the substrate and cannot be separated by physical or environmental testing. The aluminium inclusions on the surface are a key in healing any micro cracks or porosity in the coating while the zinc provides a sacrificial layer.

After coating, the cooled parts are washed in a warm passivation solution, a water rinse and finally simply dried off before packing.

Low Cost, High Performance

GREENKOTE technology offers superior, longer lasting performance results when compared to most traditional processes. It typically consumes 50% less energy and is 50% faster than traditional methods. Our processes use lower volumes of powder.

Thermo-diffusion coatings offer a high level of corrosion protection by forming a protective layer that partially diffuses into the substrate in combination with a sacrificial coating on the surface.

This process is key in healing any micro fissures, cracks, or porosity on the surface of the substrate where corrosion typically forms.

