



What is Zinc Flake Coating?

Zinc Flake Coatings are non-electrolytically applied coatings, which provide good protection against corrosion. These coatings consist of a mixture of zinc and aluminum flakes, which are bonded together by an inorganic matrix.

Zinc-Flake coatings are sacrificial coatings which contain zinc & aluminum elements that oxidize sacrificially to ensure the substrate of to which they are applied remains corrosion free.

As Zinc Flake coatings have no risk of hydrogen embrittlement and it has good friction characteristics. Zinc Flake coating is also environmentally friendly and has no risk for high-strength fasteners of any hydrogen embrittlement. All in all, Zinc Flake coating can be used on a wide variety of parts and it offers some very great advantages.

These coatings adhere to the metal substrate and provide added protection against salt, chemicals, and high-temperature corrosive environments. These coatings can also prevent galvanic corrosion as a result of dissimilar metals coming in contact with each other.

The specifications for zinc flake coatings are defined in international standard ISO 10683 and also in European standard EN 13858. ISO 10683 sets out the requirements for zinc flake coatings for threaded fasteners and EN 13858 describes the requirements for zinc flake coatings for fasteners with no thread and for other parts as well.

Advantages:

- Good appearance (coloring)
- Very good protection against corrosion (650- 1,500 hours)
- Resistant to extreme temperatures
- Good chemical resistance
- Environmentally friendly
- Good friction characteristics
- No warm-loosening torque
- No risk for high-strength fasteners of any hydrogen embrittlement Electric conductivity
- Other assembly properties
- One advantage of zinc plating is that the plating can be applied in very thin layers. Also, it is an economical choice if the component does not require the lengthy corrosion protection that zinc-flake offers.

Advantages Over Hot dip Galvanized :

- Zinc-flake coatings are resistant to extreme temperature variations.
- They are not susceptible to warm-loosening torque and are resistant to both acidic and basic chemicals.
- Zinc-flake coatings also conduct electricity well if that is a required feature
- Zinc flake items do not introduce hydrogen embrittlement like standard plating does.
- The parts are not pickled, there is no electrolytic action involved and the plating process is completed at room temperature until it is baked.



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HOT DIP GALVANISING
AFTER 96 HOURS OF SALT SPRAY TESTING



ZINC FLAKE
AFTER 96 HOURS OF SALT SPRAY TESTING



HOT DIP GALVANISING
AFTER 336 HOURS OF SALT SPRAY TESTING



ZINC FLAKE
AFTER 336 HOURS OF SALT SPRAY TESTING



HOT DIP GALVANISING
AFTER 1000 HOURS OF SALT SPRAY TESTING



ZINC FLAKE
AFTER 1000 HOURS OF SALT SPRAY TESTING