

What Is a Zinc-Flake Coating?

Advanced Corrosion Protection for Metal Components



What It Means for You

Zinc-flake coatings provide high-performance corrosion protection for metal components by combining layers of microscopic zinc and aluminum flakes with a protective binder system. Unlike traditional zinc plating, zinc-flake coatings are typically applied as a dip-spin or spray process, allowing them to provide excellent coverage—even on complex shapes and threaded components.

The zinc flakes create a highly effective barrier against corrosive elements while also providing sacrificial protection to the underlying steel. The result is durable corrosion resistance, controlled coating thickness, and reliable performance for demanding automotive, industrial, and manufacturing applications.

How Zinc-Flake Coating Works

Zinc-Flake Coating	What It Does
Microscopic zinc flakes	Provides sacrificial corrosion protection for steel
Aluminum flakes	Enhances barrier protection and corrosion resistance
Overlapping flake structure	Creates a long, difficult path for moisture and corrosive elements
Protective binder system	Holds the flakes in place and provides additional barrier protection
Dip-spin or spray application	Provides consistent coverage on complex components
Controlled film thickness	Delivers corrosion protection without excessive buildup
Optional topcoat	Additional corrosion resistance, color, friction control, or chemical protection

Why Zinc-Flake Coatings?

- Corrosion Protection** | A combination of barrier protection and sacrificial protection
- Thin, Consistent Coating** | Important for threaded and precision components
- No Hydrogen Embrittlement** | Excellent option where hydrogen embrittlement is a concern
- Controlled Friction & Torque** | Can provide controlled coefficient of friction and torque performance
- Complex Parts** | Dip-spin application allows the coating to reach difficult areas

The Takeaway

It is an engineered coating system designed to protect steel components while maintaining dimensional control, assembly performance, and long-term durability. With options for different coating and topcoat systems, zinc-flake technology can be tailored to meet demanding corrosion, friction, appearance, and regulatory requirements.

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