

# Quality Metal Finishing & Protective Coating Services - Since 1960



Durable Industrial Finishing Company's commitment to quality and service enabled the company to become a Premier Plating Shop in North America.



Quality Metal Finishing



Value Added Services



Just In Time Delivery



Rack & Barrel Processing



## Metal Finishing Services We Provide:

- Zinc Plating
- GEOMET®
- Phosphate Coatings
- Chem Film
- Electroless Nickel Plating
- Passivation of Stainless Steel

## Why Choose Durable Industrial Finishing Company:

### QUALITY

DIFCO is ISO 9001:2015 Certified

### SERVICE

DIFCO provides unparalleled service and support since 1960

### CAPACITY

DIFCO has some of the largest plating baths in the industry

GEOMET® is a registered trademark of NOF Metal Coatings Group.

### SPEED

DIFCO is known for fast turnaround avoiding costly shutdowns

### COMPETITIVE

DIFCO has sophisticated cost containment systems

*We Make Your Parts Look Better,  
Work Better and Last Longer*



Registered to ISO 9001

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# ZINC PLATING

A cost effective and corrosion resistant coating offering color and finish flexibility for a wide range of applications.



## DIFCO

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Finishing Company**

Zinc plating is commonly used to protect steel parts from corrosion. It is cost effective, offers excellent corrosion resistance and has an attractive appearance. Zinc plating provides a protective layer on metal surfaces that defends against rust by preventing moisture and other contamination from contacting the base metal. Zinc coatings can be deposited utilizing alkaline or acid chloride solutions. The choice of alkaline or acid chloride impacts product appearance and performance.

### Alkaline Zinc Plating



Produces uniform thickness. The deposit has good ductility and can be used on parts requiring post plate forming.

### Acid Zinc Chloride Plating



Can be deposited directly over a wide range of metallic substrates, and has a bright appearance.

### Functional Benefits of Zinc Plating:

- Corrosion / Oxidation Resistant
- Cost Effective
- Attractive Appearance
- Improves Lubricity
- Reliable Undercoat for Paint Applications
- Good Ductility and Adhesion

### Durable Industrial Finishing Company Offers:

- Alkaline and Acid Zinc Plating
- Barrel and Rack Plating
- Clear, Yellow and Black Zinc Chromates
- Top Coats and Sealers Further Enhance Corrosion Protection

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# PHOSPHATE COATINGS

Manganese Phosphate | Zinc Phosphate | Iron Phosphate



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Manganese Phosphate, Zinc Phosphate and Iron Phosphate are the treatment of iron or steel by immersion in a solution of phosphoric acid and other compounds. During the process the surface of the metal is chemically converted to form a protective layer of Phosphate crystals.

### Functional Benefits of Phosphate Coatings Include:

- Prevents Metal to Metal Galling
- Performs Well in High Torque Applications
- Good Base Coating for Paints and Oils
- Corrosion Resistance
- Lubricity

### Phosphate coatings are used as a base for subsequent coatings such as:

- Paint
- Waxes
- Water soluble oils
- Dry film lubricants

### Flexibility in Resulting Color and Finish Size:

Characteristics of the base metal and pretreatment methods determine the size and color of the finish.

Coating Type:	Manganese Phosphate	Zinc Phosphate	Iron Phosphate
Resulting Color:	Black	Grey to Black	Light Grey

### Durable Industrial Finishing Company Offers:

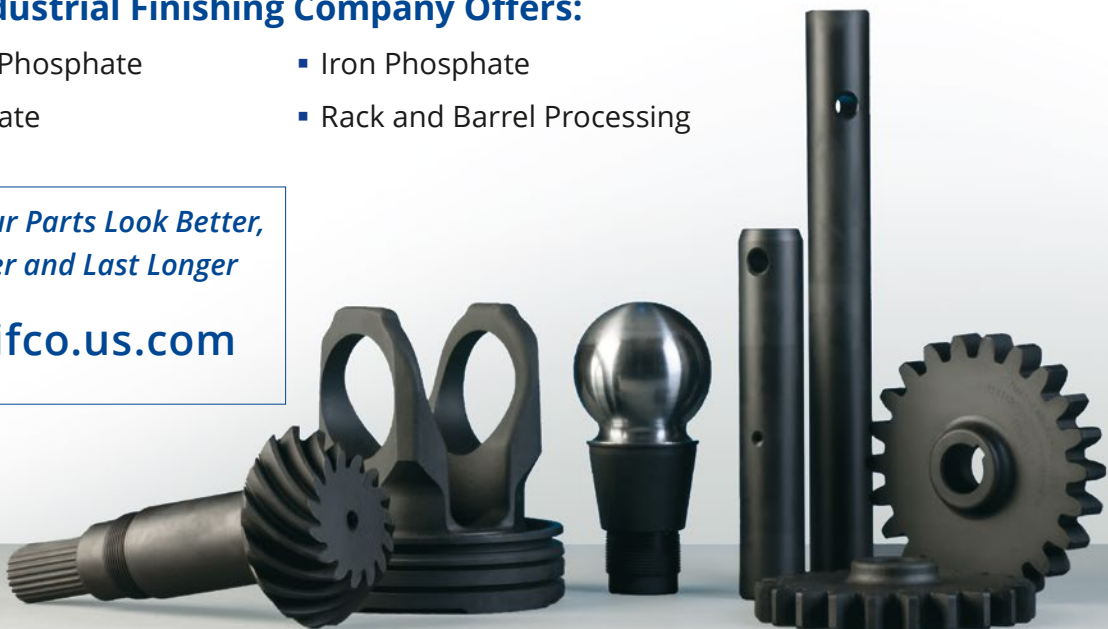
- Manganese Phosphate
- Zinc Phosphate
- Iron Phosphate
- Rack and Barrel Processing

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# GEOMET<sup>®</sup>

High Performance, corrosion resistant coatings for metal finishing that are cost effective and environmentally friendly.



## DIFCO

Durable Industrial Finishing Company

Durable Industrial Finishing Company offers the GEOMET<sup>®</sup> family of proprietary water-based products containing metal oxides, metallic zinc and aluminum flakes. The zinc and aluminum flakes align in multiple layers forming a metallic silver film. Applied as a liquid, the coating is totally inorganic after thermal curing.

### Functional Benefits of GEOMET<sup>®</sup> Include:

- Chrome Free Alternative to DACROMET<sup>®</sup>
- Superior Corrosion Protection
- Mechanical Damage Resistance
- Hydrogen Embrittlement Free Process
- Bimetallic Corrosion Resistant
- Solvent Resistant
- Heat Resistant
- Conductive
- Paintable
- Adhesion
- Self-Repairing
- Thin Dry Film

### High Corrosion Resistance:\*

Average Coating Weight	Salt Spray Test (ISO 9227/ASTM B117)
> 24 g/m <sup>2</sup>	> 1000 hours without red rust
> 24 g/m <sup>2</sup> + topcoat	> 1500 hours without red rust

\*Results may vary depending on substrate, geometry of parts and type of application process.

#### Chromium Free

NO HEXAVALENT or TRIVALENT in the liquid or on parts.

#### No Toxic Metal

Free of nickel, cadmium, lead, barium and mercury

#### Water Base

Free from dangerous solvents

#### VOC Compliant

Under EPA RACT requirements

#### Complies With

EPA, OSHA, ELV and RoHS regulations

#### Available In

Silver or Black

GEOMET<sup>®</sup> and DACROMET<sup>®</sup> are registered trademarks of NOF Metal Coatings Group.



Water-Based



Chromium-Free



Thin Film



Environmental Standards Compliant

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# ELECTROLESS NICKEL PLATING



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Electroless nickel plating is an auto-catalytic process used to deposit a nickel coating on a part. Unlike electroplating, it is not necessary to pass an electric current through the solution to form a coating.

Electroless nickel is very hard and is used to prevent corrosion and wear. The plating process provides a uniform coating over all part surfaces including the ID of a part. Electroless Nickel yields varying levels of brightness depending on the chemistry and the substrate being plated. It is used in most every industry from oil and gas to food.

### Types of Electroless Nickel Plating:

- **Low Phosphorus** 2-5% offers improved hardness and wear characteristics, higher temperature resistance, and increased corrosion resistance in alkaline environments.
- **Medium Phosphorus** 5-9% is the most common type of Electroless Nickel applied. It offers good hardness and wear characteristics along with moderate corrosion resistance.
- **High Phosphorus** 10-14% provides high corrosion resistance and is non-magnetic.

### Functional Benefits Include:

- Uniformity of Coating
- Hardness / Wear Resistance
- Lubricity
- High Melting Temperature
- Corrosion Resistance
- Chemical Resistance
- Food Grade / Cleanliness
- Electromagnetic Shielding

### Durable Industrial Finishing Company Offers:

- Low, Medium and High Phosphorous Electroless Nickel
- Rack and Barrel Processing

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# CHEMICAL FILM AND PASSIVATION

These finishing processes improve the natural corrosion resistance of steel and aluminum parts.



## DIFCO

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**CHEM FILM:** Is commonly used on parts in the aircraft, electronics and components industries. It is a widely used process to protect aluminum from corrosion, and to assure good paint adhesion.

**PASSIVATION:** Passivation removes ferrous surface contamination created when stainless steel is machined and fabricated.

### Chemical Film



Chem film can be used as a primer for organic coatings. Chromated parts retain their electrical conductivity to varying degrees, depending on coating thickness. The process is also used to add color for decorative or identification purposes.

### Passivation of Stainless Steel



Passivation removes contaminants that cause premature corrosion and damage. In addition to surface cleaning, passivation forms a thin, transparent oxide coating that fights oxidation.

### Functional Benefits of Chem Film:

- Corrosion Protection
- Highly Adhesive for Painting
- Cost Effective
- Does Not Interfere with Impedance

### Functional Benefits of Passivation:

- Improves Corrosion Resistance
- Uniform Smooth Appearance
- Extends Life of Product
- No Physical or Dimensional Changes

### Durable Industrial Finishing Company Offers:

- Barrel and Rack Processing
- Trivalent RoHS compliant Chem Films

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