

## Sherardizing - Sintered Metal Products

### What is Sherardizing?

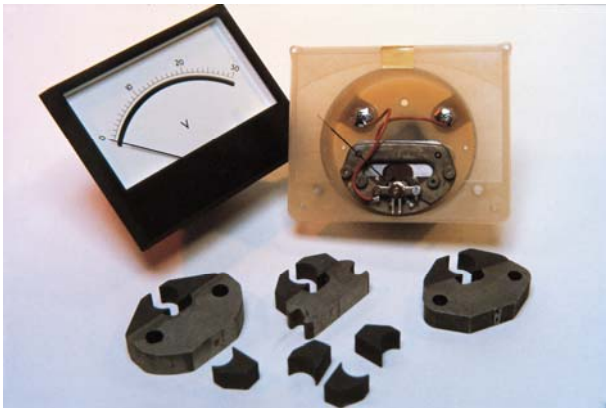
Sherardizing is a thermal diffusion coating process providing uniform thickness and corrosion protection which ensures product functionality in often harsh environments. Steel components are placed inside a retort, together with an inert media and zinc powder. The mixture is rotated at 4 rpm and heated to around 400°C (750°F) for approximately two hours. During this process the zinc powder vaporises and diffuses into the component surface, forming a zinc alloy layer. Coating thicknesses are available in the ranges 15 – 40 Microns (0.0006 – 0.0016 inches) and 30 – 60 Microns (0.0012 – 0.0024 inches), based on ISO EN 13811 standard coating thickness requirements.

### Quality

Quality is an advantage to be expected of a well established process developed over half a century by a leading provider of metallurgical services. Bodycote places great importance on close consultation between its staff and customers to ensure that there is a complete understanding of the anticipated performance of Sherardizing and the extent to which it will prolong the working life of a product. Bodycote facilities hold numerous national accreditations and customer approvals and our Sherardizing is carried out in accordance with the specified quality standard for Sherardizing, ISO EN 13811.

### Sintered Metal Products

Powder metallurgy (PM) in the production of near net shape, intricate components has been available for many years. However, due to the limitations of PM processing, components have a tendency towards porosity, restricting the types of corrosion protection available to coat these products. The chemicals involved in the electroplating process, for example, would be absorbed into the pores and then leach out following the process to attack both the base material and the coating. Sherardizing, however, is a hot diffusion process which forms a uniform deposit over the whole surface of even irregular shaped articles, sealing the surface pores, thus creating an ideal method of protection for PM components.



Sifam Ltd. actuator pole pieces used in volt meters and ammeters.



Sintered timing ring for Jaguar cars.



Sintered metal cam housing for the Saab brake caliper. The Sherardizing deposits follow the intricacy of the formed shape exactly.

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## Why use Sherardizing?

The table below shows why Sherardizing is a better choice when choosing a coating for sintered metal products.

### Coating Properties Comparison:

Type of Coating	Coating Properties
Sherardizing	Ideal
Hot Dip Spin Galvanizing	Non uniform in coverage, endangering the functionality of the component
Mechanical Plating	Not suitable, since the process involves chemicals that can be retained in the pores of the metal
Organic Coating Magni – Delta Protekt	Not suitable, since the surface adhesion is questionable
Zinc Electroplating	Not suitable, since the process involves chemicals that can be retained in the pores of the metal

## Other Bodycote Metallurgical Coatings services include:

Abrasion Resistant Coatings  
Advanced Coatings  
Anti-fouling Coatings  
Anti-coking Coatings  
Anti-rusting Coatings  
Anti-seizure Coatings  
Carbide Coatings  
Ceramic Densification  
Ceramic Overlay  
Chrome Densification

Chrome Seal  
CoatAlloy™ Coatings  
Decorative Coatings  
Diffusion Coatings  
Duplex Coatings  
Engineering Coatings  
Erosion Resistance  
Flame Spray Coatings  
Hard Coatings  
HVOF

Low Friction Coatings  
Passivation  
Plasma Spray Coatings  
Sacrificial Coatings  
Surface Protection  
Surface Sealants  
Thermal Diffusion Coatings  
Tribological Coatings  
Wear Resistant Coatings

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