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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Fasteners surface treatment-Part 5: Zinc thermal diffusion
coatings**

紧固件表面处理 第5部分：热扩散渗锌层

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document is part 5 of GB/T 5267 "Surface treatment of fasteners". GB/T 5267 has published the following parts.

GB/T 5267.1 Fastener electroplating layer;

GB/T 5267.2 Non-electrolytic zinc flake coating for fasteners;

GB/T 5267.3 Hot dip galvanized coating of fasteners;

GB/T 5267.4 Fastener surface treatment - Passivation treatment of corrosion-resistant stainless steel;

GB/T 5267.5 Surface treatment of fasteners Part 5: Thermal diffusion sherardizing layer. - Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on

Standardization of Fasteners (SAC/TC 85).

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First Automobile Co., Ltd., China Automotive Technology and Research Center Co., Ltd., Shanghai Jiyou Tension Control Bolt Co., Ltd., Chery Automobile Co., Ltd. LIMITED.

This document is interpreted by the National Technical Committee on Fastener Standardization.

Introduction

Fastener surface treatment is an important part of fastener production. According to the function of the coating layer, the fastener can achieve corrosion resistance, decorative and functional properties.

When selecting surface treatment for threaded fasteners, it is necessary not only to achieve various functional effects, but also to meet the thread screwability requirements.

GB/T 5267 is intended to standardize the electroplating layer, non-electrolytic zinc flake coating, hot-dip galvanizing layer, stainless steel passivation and thermal diffusion galvanizing of fastener products.

Technical requirements for different surface treatments such as zinc coatings are provided to coating suppliers, coating and plating processors, fastener manufacturers, distributors and end-user groups.

It provides a standard basis for production, sales and product quality acceptance inspection, and is planned to consist of 5 parts.

GB/T 5267.1 Electroplating of fasteners (ISO 4042); - GB/T 5267.2 Non-electrolytic zinc flake coating for fasteners (ISO 10683); - GB/T 5267.3 Hot-dip galvanized coating on fasteners (ISO 10684); - GB/T 5267.4 Fastener surface treatment - Passivation treatment of corrosion-resistant stainless steel (ISO 16048); - GB/T 5267.5 Surface treatment of fasteners Part 5: Thermal diffusion sherardizing layer. - GB/T 5267 converts four independent international standards for fastener surface treatment.

It has been widely used. China has independently formulated the surface treatment standard for thermal diffusion zinc plating. Different surface treatment standards are included in the GB/T 5267 series. Column for easy use.

The thermal diffusion sherardizing process is used to form a thermal diffusion sherardizing layer, forming a zinc-iron alloy layer on the surface of the fastener product.

(High salt, high heat, high humidity, strong alkali and weak acid environment) to improve the corrosion resistance of steel products, protect the wear resistance, toughness and other mechanical properties of the products Performance and physical properties play an important role. Fastener surface treatment Part 5: Thermal diffusion sherardizing layer

1 Scope

This document specifies the shearing layer of steel fasteners formed by the thermal diffusion shearing process (hereinafter referred to as the "shernizing layer") System and process, corrosion resistance and sherardizing layer grades, dimensional requirements and measurements, mechanical and physical properties and tests, fastener sherardizing layer system standards Notes, ordering information and storage conditions.

This document is applicable to M5~M72 thermal diffusion galvanized threaded fasteners, and other steel fasteners can be used for reference.

2 Normative references

GB/T 1237

GB/T 3098.1

GB/T 3098.2

GB/T 3099.3

GB/T 4956

GB/T 6462

GB/T 10125

GB/T 13825

GB/T 16823.3

GB/T 39310

3 Terms and definitions

The terms and definitions defined in GB/T 3099.3 and the following apply to this document.

3.1 Zinc thermal diffusion process

The parts and the sherardizing mixture (3.3) are placed in a closed container and heated. The zinc and iron atoms diffuse into each other and form a thermal diffusion sherardizing mixture on the surface of the parts.

Surface treatment process of zinc layer (3.2).

3.2 Zinc thermal diffusion coating

A zinc-iron alloy layer formed by the mutual diffusion of zinc and iron atoms on the surface of the substrate.

3.3 sherardizing mixture

It is mainly composed of zinc powder and may contain other process supporting ingredients.