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

GB/T 5267.1-2023

**Fasteners - Electroplate coating
(English Translation)**

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020

"Directives for standardization - Part 1.Rules for the structure and drafting of standardizing documents".

This document is Part 1 of GB/T 5267.The following parts of GB/T 5267 have already been published.

- GB/T 5276.1, Fasteners -- Electroplate coating
- GB/T 5276.2, Fasteners -- Non-electrolytic zinc flake coating;
- GB/T 5276.3, Fasteners -- Hot-dip galvanized coating;
- GB/T 5276.4, Fastener surface treatment -- Corrosion-resistant stainless steel passivation treatment.

This document supersedes GB/T 5267.1-2002 "Fasteners -- Electroplated Coatings".

Compared with GB/T 5267.1-2002, in addition to structural adjustments and editorial changes, the main technical changes in this document are as follows.

a) The scope of application has been changed to include all fasteners, including tapping screws, thread forming screws, washers, rivets, and clamps, and applies to electroplated coatings with or without additional layers (conversion coatings, sealing layers, surface coatings, lubricants) (see Chapter 1 of this Edition; Chapter

1 of Edition 2002);

b) A statement has been added indicating that the requirements of GB/T 5267.1 for electroplated fasteners take precedence over other general national standards involving electroplating (see Chapter 1 of this Edition);

c) All references to ISO 2081 (GB/T 9799) have been deleted;

d) The minimum corrosion resistance requirements (white corrosion and red rust) have been increased (see Chapter 5 of this Edition);

e) The updated information on hydrogen embrittlement and preventive measures has been added (see 4.4 and Annex B of this Edition);

f) The definitions as defined in GB/T 3099.3 have been added (see Chapter 3 of this Edition);

g) Neutral salt spray testing (NSS) (see 5.2 of this Edition) and sulfur dioxide testing (Kesternich) (see 5.3 of this Edition) have been added;

h) The requirements for measurability and assemblability have been added (see 6.2 of this Edition);

i) The test method for measuring thickness has been added, and the area for thickness measurement has been more clearly defined (see 6.4 of this Edition);

j) The requirement for average batch thickness has been deleted (see Chapter 9 and Annex D of Edition 2002);

k) A marking system for coating systems has been added (see Chapter 9 of this Edition);

l) The mechanical and physical performance requirements and related test methods have been added (see Chapter 7 of this Edition);

m) The information on the design and installation of electroplated fasteners has been

added (see Annex A of this Edition);

n) The information on the coating thickness and thread clearance of standard threads has been added (see Annex D of this Edition);

o) The information regarding the corrosion resistance assessment of neutral salt spray test chambers has been added (see Annex E of this Edition).

The modification of this document adopts ISO 4042:2022 "Fasteners -- Electroplate coating systems".

The technical differences between this document and ISO 4042:2022, and the reasons for these differences, are as follows.

- ISO 1891-2 is replaced by the normative reference GB/T 3099.3 (see Chapter 3) to adapt to China's technical conditions;
- ISO 1456 is replaced by the normative reference GB/T 9797 (see Table 1, 7.1, Table F.2) to adapt to China's technical conditions;
- ISO 2093 is replaced by the normative reference GB/T 12599 (see Table 1, 7.1) to adapt to China's technical conditions;
- ISO 2082 is replaced by the normative reference GB/T 13346 (see Table 1, 7.1) to adapt to China's technical conditions;
- ISO 15330 is replaced by the normative reference GB/T 3098.17 (see 4.4.6, B.6) to adapt to China's technical conditions;
- ISO 9227 is replaced by the normative reference GB/T 10125 (see 5.2, Table 8, A.1.4.1, Annex C, Annex E) to adapt to China's technical conditions;
- ISO 1502 is replaced by the normative reference GB/T 3934 (see 6.2.2) to adapt to China's technical conditions;

Fasteners -- Electroplate coating

1 Scope

This document specifies requirements for steel fasteners with electroplated coatings and coating systems. The requirements related to dimensional properties also apply to fasteners made of copper or copper alloys.

It also specifies internal hydrogen embrittlement requirements (see 4.4) and provides recommendations for reducing the risk of hydrogen embrittlement (see Annex B).

It mainly applies to fasteners with zinc and zinc alloy coating systems (zinc, zinc-nickel, zinc-iron) and cadmium, primarily intended for corrosion protection and other functional properties.

- with or without conversion coating,
- with or without sealant,
- with or without top coat,
- with or without lubricant (integral lubricant and/or subsequently added lubricant).

In this document, only the dimensional requirements for standard threaded fasteners apply to other coating and coating systems (tin, tin-zinc, copper-tin, copper-silver, copper, silver, copper-zinc, nickel, nickel-chromium, copper-nickel, copper-nickel-chromium).

This document's requirements for electroplated fasteners take precedence over other documents concerning electroplating.

This document applies to standard threaded bolts, screws, studs, and nuts, as well as non-standard threaded fasteners and non-threaded fasteners such as washers, pins, clamps, and rivets.

NOTE: Electroplating is also applied to stainless steel fasteners, e.g. for the purpose of lubrication in order to avoid galling.

Design and assembly information for coated fasteners can be found in Annex A.

This document does not specify the weldability or coating properties of the fasteners.

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