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

GB/T 12332-2008

Replacing GB/T 12332-1990

**Metallic coatings-Electroplated coatings of nickel for
engineering purposes**

金属覆盖层 工程用镍电镀层

(English Translation)

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Foreword

This standard is identical to ISO 4526:2004 Metallic coatings - Electroplated coatings of nickel for engineering purposes, and was drafted on the basis of its translation.

For ease of use, the following editorial changes have been made: the foreword of the International Standard has been replaced by a national foreword; "this International Standard" has been replaced by "this standard"; and the International Standards referenced have been replaced by the corresponding national standards.

This standard replaces GB/T 12332-1990. Compared with GB/T 12332-1990, the main changes are:

- an introduction has been added;
- a designation clause has been added;
- the properties, uses and application examples of engineering nickel electrodeposits have been removed;
- the typical compositions of Watts and sulfamate nickel solutions and the mechanical

properties of the deposits have been revised;

- a hot water porosity test and a modified ferroxyl porosity test have been added;
- additional information for various applications has been added.

Annexes C and D are normative; Annexes A, B and E are informative.

This standard was proposed by the China Machinery Industry Federation and is under the jurisdiction of the National Technical Committee on Metallic and Non-metallic Coatings of Standardization Administration of China (SAC/TC 57).

The previous edition of this standard is GB/T 12332-1990.

Introduction

Engineering electrodeposits of nickel have a wide range of applications: they increase hardness, wear resistance, corrosion resistance, load-bearing capacity and resistance to thermal oxidation and fretting corrosion, and they improve other surface properties. Electroplated nickel is also used to salvage worn or mis-machined parts and as a diffusion barrier layer.

Engineering nickel deposits usually contain more than 99 % nickel and are produced from Watts or sulfamate nickel solutions without additives. Annex A gives typical solution compositions, operating conditions and mechanical properties of the deposits.

1 Scope

This standard specifies requirements for electroplated coatings of nickel and nickel alloys for engineering purposes on ferrous and non-ferrous metals.

This standard is not applicable to electroplated coatings of binary nickel alloys in which nickel is the minor component.

It also gives the method of designating the type and thickness of nickel and nickel alloy coatings for engineering purposes.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 3138 · GB/T 4955 · GB/T 5270 · GB/T 6461 · GB/T 6462 · GB/T 6463 · GB/T 9790 · GB/T 12334 · GB/T 12609 · GB/T 13744 · GB/T 15821 · GB/T 16921 · GB/T 19349 · GB/T 19350 · GB/T 20015 · GB/T 20018 · ISO 9220 · ISO 10587 · ISO 15274 · EN 12508