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**Metallic coatings - Physical vapour-deposited coatings
of aluminium - Specification and test methods**

金属覆盖层 物理气相沉积铝涂层 技术规范与检测方法

(ISO 22779:2006, IDT)

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Foreword

This Standard is drafted according to the rules given in GB/T 1.1-2009.

This Standard uses the translation method to equivalently adopt ISO 22779:2006 "Metallic coatings - Physical vapour-deposited coatings of aluminium - Specification and test methods".

China's national documents that have consistency correspondence relation with the normative-reference international documents in this Standard are as follows:

- GB/T 3138-2015 Electroplating and related processes - Vocabulary (ISO 2080:2008, IDT)
- GB/T 4957-2003 Non-conductive coatings on non-magnetic electrically conductive basis materials - Measurement of coating thickness - Amplitude-sensitive eddy-current method (ISO 2360:1982, IDT)
- GB/T 5270-2005 Metallic coatings on metallic substrates - Electrodeposited and chemically deposited coatings - Review of methods available for testing adhesion (ISO 2819:1980, IDT)
- GB/T 6462-2005 Metallic and oxide coatings - Measurement of coating thickness - Microscopical method (ISO 1463:2003, IDT)
- GB/T 6463-2005 Metallic and other inorganic coatings - Review of methods of measurement of thickness (ISO 3882:2003)
- GB/T 9792-2003 Conversion coatings on metallic materials - Determination of coating mass per unit area - Gravimetric methods (ISO 3892:2000, MOD)
- GB/T 10125-2012 Corrosion tests in artificial atmospheres - Salt spray tests (ISO 9227:2006, IDT)
- GB/T 11378-2005 Metallic coatings - Measurement of coating thickness - Profilometric method (ISO 4518:1980, IDT)
- GB/T 12334-2001 Metallic and other inorganic coatings - Definitions and conventions concerning the measurement of thickness (ISO 2064, IDT)
- GB/T 12609-2005 Electrodeposited metallic coatings and related finishes - Sampling procedures for inspection by attributes (ISO 4519:1980, IDT)
- GB/T 16921-2005 Metallic coatings - Measurement of coating thickness - X-ray spectrometric methods (ISO 3497:1990, IDT)

- GB/T 19349-2012 Metallic and other inorganic coatings - Pretreatments of iron or steel to reduce the risk of hydrogen embrittlement (ISO 9587:2007, IDT)
- GB/T 19350-2012 Metallic and other inorganic coatings - Post-coating treatments of iron or steel to reduce the risk of hydrogen embrittlement (ISO 9588:2007, IDT)
- GB/T 19822-2005 Specification for hard anodic oxidation coatings on aluminium and its alloys (ISO 10074:1994, IDT)
- GB/T 20015-2005 Metallic and other inorganic coatings - Automated controlled shot-peening of metallic articles prior to nickel, autocatalytic nickel or chromium plating, or as a final finish (ISO 12686:1999, IDT)
- GB/T 20018-2005 Metallic and non-metallic coatings - Measurement of thickness - Beta backscatter method (ISO 3543:2000, IDT)
- GB/T 20631.2-2006 Specifications for pressure-sensitive adhesive tapes for electrical purposes - Part 2: Methods of test (IEC 60454:1994, IDT)
- GB/T 31563-2015 Metallic coatings - Measurement of coating thickness - Scanning electron microscope method (ISO 9220:1988, MOD)

This Standard is proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee on Metallic and Nonmetallic Coatings of Standardization Administration of China (SAC/TC 57).

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Metallic coatings - Physical vapour-deposited coatings of aluminium - Specification and test methods

1 Scope

This Standard specifies requirements for aluminium coatings applied by physical vapour deposition techniques to mild steels, low-alloy steels, high-strength steels, corrosion-resisting steels, aluminium alloys, titanium alloys and other materials, as appropriate.

Physical vapour-deposited coatings of aluminium are not suitable for steels having tensile strengths greater than 1 400 MPa, because of the possibility of hydrogen embrittlement due to corrosion in service or storage, or as a result of excessive cathodic protection.

WARNING: The use of this Standard may involve hazardous materials, operations and equipment. This Standard does not address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices, and to determine the applicability of regulatory limitations prior to use.

2 Normative references

The following referenced 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.

ISO 1463 Metallic and oxide coatings - Measurement of coating thickness - Microscopical method

ISO 2064 Metallic and other inorganic coatings - Definitions and conventions concerning the measurement of thickness

ISO 2080 Electroplating and related processes - Vocabulary

ISO 2360 Non-conductive coatings on non-magnetic electrically conductive basis materials - Measurement of coating thickness - Amplitude-sensitive eddy-current method

ISO 2819 Metallic coatings on metallic substrates - Electrodeposited and chemically

deposited coatings - Review of methods available for testing adhesion

ISO 2859 Sampling procedures for inspection by attributes

ISO 3497 Metallic coatings - Measurement of coating thickness - X-ray spectrometric methods

ISO 3543 Metallic and non-metallic coatings - Measurement of thickness - Beta backscatter method

ISO 3882 Metallic and other inorganic coatings - Review of methods of measurement of thickness

ISO 3892 Conversion coatings on metallic materials - Determination of coating mass per unit area - Gravimetric methods

ISO 4518 Metallic coatings - Measurement of coating thickness - Profilometric method

ISO 4519 Electrodeposited metallic coatings and related finishes - Sampling procedures for inspection by attributes

ISO 9220 Metallic coatings - Measurement of coating thickness - Scanning electron microscope method

ISO 9227 Corrosion tests in artificial atmospheres - Salt spray tests

ISO 9587 Metallic and other inorganic coatings - Pretreatments of iron or steel to reduce the risk of hydrogen embrittlement

ISO 9588 Metallic and other inorganic coatings - Post-coating treatments of iron or steel to reduce the risk of hydrogen embrittlement

ISO 10074 Specification for hard anodic oxidation coatings on aluminium and its alloys

ISO 10546 Chemical conversion coatings - Rinsed and non-rinsed chromate conversion coatings on aluminium and aluminium alloys

ISO 12686 Metallic and other inorganic coatings - Automated controlled shot-peening of metallic articles prior to nickel, autocatalytic nickel or chromium plating, or as a final finish

ISO 16348 Metallic and other inorganic coatings - Definitions and conventions concerning appearance

IEC 60454 Specifications for pressure-sensitive adhesive tapes for electrical

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