

# भारतीय मानक ब्यूरो

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*भारतीय मानक मसौदा*

## धात्विक और अन्य अकार्बनिक लेपन – निकल, निकल प्लस क्रोमियम, तांबा प्लस निकल और तांबा प्लस निकल प्लस क्रोमियम की इलेक्ट्रोडिपोजिटेड लेपन

*(IS 1068 का चौथा पुनरीक्षण)*

*Draft Indian Standard*

### **Metallic and Other Inorganic Coatings — Electrodeposited Coatings of Nickel, Nickel Plus Chromium, Copper Plus Nickel and of Copper Plus Nickel Plus Chromium**

*(Fourth Revision of IS 1068)*

*(Superseding IS 12393 : 1988)*

ICS 25.220.40

Corrosion Protection and Finishes  
Sectional Committee, MTD 24

Last date of comment:  
03/07/2024

#### NATIONAL FOREWORD

This draft standard is identical to ISO 1456 : 2009 'Metallic and other inorganic coatings — Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium' issued by the International Organization for Standardization (ISO), and subject to its finalization, is to be adopted by the Bureau of Indian Standards on the recommendation of the Corrosion Protection and Finishes Sectional Committee and approval of the Metallurgical Engineering Division Council.

This standard was first published in 1958 and subsequently revised in 1968, 1985 and 1993. The fourth revision of this standard has been undertaken to align with the International Standard ISO 1456 : 2009 under dual numbering system.

Former title of the Indian Standard IS 1068 was 'Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium - Specification' which has been changed to 'Metallic and other inorganic coatings — Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium' as per the title of ISO 1456.

The text of ISO standard has been approved as suitable for publication as in Indian Standard without deviations. Certain terminologies and conventions are, however, not identical with those used in Indian Standard. Attention is especially drawn to the following:

- Wherever the words 'International Standard' appear referring to this standard, it should be read as 'Indian Standard'

- b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exists. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the edition indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 2177 : 2003 Metallic coatings — Measurement of coating thickness — Coulometric method by anodic dissolution	IS 14126 : 2019 / ISO 2177 : 2003 Metallic coatings - Measurement of coating thickness - Coulometric method by anodic dissolution ( <i>First Revision</i> )	Identical
ISO 3543 : 2000 Metallic and non-metallic coatings — Measurement of thickness — Beta backscatter method	IS 14149 : 2008 / ISO 3543 : 1981 Metallic and non - Metallic coating - Measurement of thickness - Beta backscatter method ( <i>First Revision</i> )	Identical
ISO 9587 : 2007 Metallic and other inorganic coatings — Pretreatment of iron or steel to reduce the risk of hydrogen embrittlement	IS 18463 : 2023 / ISO 9587 : 2007 Metallic and other inorganic coatings Pretreatment of iron or steel to reduce the risk of hydrogen embrittlement	Identical
ISO 9588 : 2007 Metallic and other inorganic coatings — Post-coating treatments of iron or steel to reduce the risk of hydrogen embrittlement	IS 18436 : 2023 / ISO 9588 : 2007 Metallic and other inorganic coatings Post-coating treatments of iron or steel to reduce the risk of hydrogen embrittlement	Identical
ISO 4541 : 1978 Metallic and other non-organic coatings — Corrodokote corrosion test (CORR test)	IS 8038 : 1985 Method of testing corrosion resistance of metallic and other non-organic coatings by corrodokote test ( <i>First Revision</i> )	Not Equivalent
ISO 1463 : 2021 Metallic and oxide coatings — Measurement of coating thickness — Microscopical method	IS 3203 : 1982 Methods of testing local thickness of electroplated coatings ( <i>First Revision</i> )	Not Equivalent
ISO 2361 : 1982 Electrodeposited nickel coatings on magnetic and non-magnetic substrates — Measurement of coating thickness — Magnetic method	IS 3203 : 1982 Methods of testing local thickness of electroplated coatings ( <i>First Revision</i> )	Not Equivalent

The technical committee responsible for the preparation of this standard has reviewed the provisions of following International Standards referred in these adopted standards and decided their acceptability for use in conjunction with this standard.

<i>International Standard</i>	<i>Title</i>
ISO 2064 : 1996	Metallic and other inorganic coatings — Definitions and conventions concerning the measurement of thickness
ISO 2080 : 2022	Metallic and other inorganic coatings — Surface treatment, metallic and other inorganic coatings — Vocabulary

ISO 2819 : 2017	Metallic coatings on metallic substrates — Electrodeposited and chemically deposited coatings — Review of methods available for testing adhesion
ISO 3497 : 2000	Metallic coatings — Measurement of coating thickness — X-ray spectrometric methods
ISO 3882 : 2024	Metallic and other inorganic coatings — Review of methods of measurement of thickness
ISO 4519 : 1980	Electrodeposited metallic coatings and related finishes — Sampling procedures for inspection by attributes
ISO 9220 : 2022	Metallic coatings — Measurement of coating thickness — Scanning electron microscope method
ISO 10289 : 1999	Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates — Rating of test specimens and manufactured articles subjected to corrosion tests
ISO 10587 : 2000	Metallic and other inorganic coatings — Test for residual embrittlement in both metallic-coated and uncoated externally-threaded articles and rods — Inclined wedge method
ISO 15724 : 2001	Metallic and other inorganic coatings — Electrochemical measurement of diffusible hydrogen in steels – Barnacle electrode method
ISO 16348 : 2003	Metallic and other inorganic coatings — Definitions and conventions concerning appearance
ISO 27831-2 : 2008	Metallic and other inorganic coatings — Cleaning and preparation of metal surfaces — Part 2: Non-ferrous metals and alloys

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

The scope of the standard is as follows:

### **SCOPE**

This International Standard specifies the method of using coating thickness instruments of the magnetic type for nondestructive measurements of the thickness of electrodeposited nickel coatings on magnetic or non-magnetic substrates.

The method may not be applicable to autocatalytic (electroless) nickel coatings depending on their chemical composition.

For the purposes of this International Standard, two types of nickel coating are distinguished:

- a) nickel coatings on magnetic substrates (type A coatings);
- b) nickel coatings on non-magnetic substrates (type B coatings).

It should not be assumed that all instruments are applicable to both types of coating. The effective measuring ranges of instruments using the principle of magnetic attraction are up to 50 µm for type A coatings, and up to 25 µm for type B coatings.

For instruments using the principle of reluctance, the effective ranges are much greater and measurements up to 1 mm, or more, can be made on both types of coating.

**The complete document/text of ISO 1456 : 2009 'Metallic and other inorganic coatings — Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium' may be made available, on request to:**

**संजीव मैनी / Sanjiv Maini**

**वरिष्ठ निदेशक, वैज्ञानिक 'एफ' एवं प्रमुख / Senior Director, Scientist 'F' & Head**

**धातुकर्म अभियांत्रिकी विभाग / Metallurgical Engg. Department**

**भारतीय मानक ब्यूरो / Bureau of Indian Standards,**

**मानक भवन, नई दिल्ली / Manak Bhavan, 9, B.S.Z. Marg,**

**New Delhi-110002**

**E-mail: mtd@bis.gov.in, mtd24@bis.gov.in**

**Tel: + 91 11 23231085**