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**Külm töödeldud elektrolüütilise kattega tinutatud plekk**

Cold-reduced electrolytic tinplate

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

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| <p>Käesolev Eesti standard EVS-ISO 11949:2004 "Külm töödeldud elektrolüütilise kattega tinutatud plekk" sisaldab rahvusvahelise standardi ISO 11949:1995 "Cold-reduced electrolytic tinplate" identset ingliskeelset teksti.</p> <p>Standard EVS-ISO 11949:2004 on kinnitatud Eesti Standardikeskuse 19.06.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Standard on kättesaadav Eesti Standardikeskusest.</p> | <p>This Estonian Standard EVS-ISO 11949:2004 consists of the identical English text of the International Standard ISO 11949:1995 "Cold-reduced electrolytic tinplate".</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 19.06.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian Centre for Standardisation.</p> |
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| <p><b>Käsitlusala</b></p> <p>Käesolev rahvusvaheline standard täpsustab nõudeid elektrolüütilise kattega ühe- ja kahekordselt külm töödeldud karastamata madalsüsinikterasest tinutatud plekile, mis on lehtede kujul või lehtedeks lõikamise eesmärgil rulli keritud kujul.</p> <p>Ühekordselt töödeldud tinutatud plekile on määratud nominaalpaksused, mis on 0,005 mm kordarvud, alates 0,17 mm kuni 0,49 mm (kaasa arvatud). Topelttöötlusega tinutatud plekile on määratud nominaalpaksused, mis on 0,005 mm kordarvud, alates 0,14 mm kuni 0,29 mm (kaasa arvatud).</p> <p>Käesolev rahvusvaheline standard kehtib rullidele ja rullidest lõigatud lehtedele nominaalse miinimumlaiusega 500 mm.</p> <p>Lisa E sisaldab nimekirja valitud toote kohta kehtivatest punktidest.</p> | <p><b>Scope</b></p> <p>This International Standard specifies requirements for single and double cold-reduced low-carbon mild steel electrolytic tinplate in the form of sheets or coils for subsequent cutting into sheets.</p> <p>Single-reduced tinplate is specified in nominal thicknesses that are multiples of 0,005 mm, from 0,17 mm up to and including 0,49 mm. Double-reduced tinplate is specified in nominal thicknesses that are multiples of 0,005 mm, from 0,14 mm up to and including 0,29 mm.</p> <p>This International Standard applies to coils and sheets cut from coils in nominal minimum widths of 500 mm.</p> <p>Annex E lists the relevant clauses for the selected product.</p> |
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## Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11949 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 9, *Tinplate and blackplate*.

It cancels and replaces ISO 1111-1:1983, ISO 1111-2:1983, ISO 4977-1:1984 and ISO 4977-2:1988.

Annexes A and B form an integral part of this International Standard. Annexes C, D and E are for information only.

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# Cold-reduced electrolytic tinplate

## 1 Scope

This International Standard specifies requirements for single and double cold-reduced low-carbon mild steel electrolytic tinplate in the form of sheets or coils for subsequent cutting into sheets.

Single-reduced tinplate is specified in nominal thicknesses that are multiples of 0,005 mm, from 0,17 mm up to and including 0,49 mm. Double-reduced tinplate is specified in nominal thicknesses that are multiples of 0,005 mm, from 0,14 mm up to and including 0,29 mm.

This International Standard applies to coils and sheets cut from coils in nominal minimum widths of 500 mm.

Annex E lists the relevant clauses for the selected product.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1024:1989, *Metallic materials — Hardness test — Rockwell superficial test (scales 15N, 30N, 45N, 15T, 30T and 45T)*.

ISO 6892:1984, *Metallic materials — Tensile testing*.

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 electrolytic tinplate:** Low-carbon mild steel sheet or coil coated on both surfaces with tin that is applied in continuous electrolytic operation.

**3.2 differentially coated electrolytic tinplate:** Cold-reduced electrolytic tinplate, one surface of which carries a heavier tin coating than the other.

**3.3 single cold-reduced:** Term used to describe those products where the steel substrate has been reduced to the desired thickness in a cold-reduction mill and subsequently annealed and temper rolled.

**3.4 double cold-reduced:** Term used to describe those products in which the steel base has had a second major reduction after annealing.

**3.5 standard grade tinplate:** Material in sheet form which is the product of line inspection. It is suitable, under normal conditions of storage, for established lacquering and printing over the entire surface of the sheet and does not contain any of the following:

- a) pinholes, i.e. any perforation through the whole thickness of the material;
- b) thickness outside the tolerance range specified in 10.3;
- c) surface defects which render the material unsuitable for the intended use;
- d) damage or shape-related defects which render the material unsuitable for the intended use.

**3.6 second grade tinplate:** Material which represents the best sheets rejected from the standard grade but may contain sheets exhibiting defects in surface appearance and shape of limited extent. Suitability for established lacquering and printing over the entire surface of the sheet is not assured.

**3.7 batch annealed; box annealed (BA):** Annealed by the process in which the cold-reduced strip is annealed in tight coil form, within a protective atmosphere, for a predetermined time-temperature cycle.