

**Rulli keeratud külmtöödeldud mustplekk tinutatud  
pleki või elektrolüütilisel teel kroomi või  
kroomoksiidiga kaetud terase tootmiseks**

Cold-reduced blackplate in coil form for the production of  
tinplate or electrolytic chromium/chromium oxide-coated  
steel

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

Käesolev Eesti standard EVS-ISO 11951:2004 "Rulli keeratud külmtöödeldud mustplekk tinutatud pleki või elektrolüütilisel teel kroomi või kroomoksiidiga kaetud terase tootmiseks" sisaldab rahvusvahelise standardi ISO 11951:1995 "Cold-reduced blackplate in coil form for the production of tinplate or electrolytic chromium/chromium oxide-coated steel" identset ingliskeelset teksti.

Standard EVS-ISO 11951:2004 on kinnitatud Eesti Standardikeskuse 19.06.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti Standardikeskusest.

This Estonian Standard EVS-ISO 11951:2004 consists of the identical English text of the International Standard ISO 11951:1995 "Cold-reduced blackplate in coil form for the production of tinplate or electrolytic chromium/chromium oxide-coated steel".

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.

The standard is available from Estonian Centre for Standardisation.

**Käsitlusala**

Käesolev rahvusvaheline standard täpsustab nõuded rulli keeratud ühe- ja kahekordselt külmtöödeldud mustplekile, mis on ette nähtud tinutatud pleki või elektrolüütilisel teel kroomi või kroomoksiidiga kaetud terase (ECCS) tootmiseks vastavalt ISO 11949 või ISO 11950 standardile.

Ühekordselt külmtöödeldud mustplekile on määratud nominaalpaksused, mis on 0,005 mm kordarvud, alates 0,17 mm kuni 0,49 mm (kaasa arvatud). Topelttöötusega mustplekile on määratud nominaalpaksused, mis on 0,005 mm kordarvud, alates 0,14 mm kuni 0,29 mm (kaasa arvatud).

Käesolev rahvusvaheline standard kehtib kas kärbitud või kärpimata servadega rullidele nominaalse miinimumlaiusega 500 mm.

**Scope**

This International Standard specifies requirements for single and double cold-reduced blackplate in the form of coils which are intended for manufacturing tinplate or electrolytic chromium/chromium oxide-coated steel (ECCS) in accordance with ISO 11949 or ISO 11950.

Single-reduced blackplate is specified in nominal thicknesses that are multiples of 0,005 mm, from 0,17 mm up to and including 0,49 mm. Doublereduced blackplate 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 in nominal minimum widths of 500 mm, with either trimmed or untrimmed edges.

**ICS 77.140.50** Lameterastooted ja -pooltooted

**Võtmesõnad:** külmtöötlemine, teras, tinutatud plekk

**Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele**

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical Standardization.

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 11951 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 9, *Tinplate and blackplate*.

Annex A forms an integral part of this International Standard. Annex B is for information only.

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## 1 Scope

This International Standard specifies requirements for single and double cold-reduced blackplate in the form of coils which are intended for manufacturing tinplate or electrolytic chromium/chromium oxide-coated steel (ECCS) in accordance with ISO 11949 or ISO 11950.

Single-reduced blackplate 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 blackplate 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 in nominal minimum widths of 500 mm, with either trimmed or untrimmed edges

## 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*.

ISO 11949:1995, *Cold-reduced electrolytic tinplate*.

ISO 11950:1995, *Cold-reduced electrolytic chromium/chromium oxide-coated steel*.

## 3 Definitions

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

**3.1 blackplate:** Cold-reduced low-carbon mild steel, normally oiled, for the production of tinplate or ECCS in accordance with ISO 11949 or ISO 11950.

**3.2 single cold-reduced:** Term used to describe blackplate which has been reduced to the desired thickness in a cold-reduction mill and subsequently annealed and temper rolled.

**3.3 double cold-reduced:** Term used to describe blackplate which has had a second major reduction after annealing.

**3.4 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.

**3.5 continuously annealed (CA):** Annealed by the process in which cold-reduced coils are unwound and annealed in strip form within a protective atmosphere.

**3.6 finish:** Appearance of the surface of blackplate, resulting from controlled preparation of the work rolls used for the final stages of rolling.

**3.6.1 shot blast finish:** Finish resulting from the use of temper-mill work rolls that have been shot blasted.

**3.6.2 smooth finish:** Finish resulting from the use of temper-mill work rolls that have been ground to a high degree of polish. This finish is used for the production of bright finish tinplate.

**3.6.3 stone finish:** Finish characterized by a directional pattern, resulting from the use of final-mill work rolls that have been ground to a lower degree of polish than those used for the smooth finish.

**3.7 coil:** Rolled flat strip product which is wound into regularly superimposed laps so as to form a coil with almost flat sides.