

Metallic and other inorganic coatings - Electropolishing
as a means of smoothing and passivating stainless steel
(ISO 15730:2000)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 15730:2016 sisaldab Euroopa standardi EN ISO 15730:2016 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 15730:2016 consists of the English text of the European standard EN ISO 15730:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

**Metallic and other inorganic coatings - Electropolishing as
a means of smoothing and passivating stainless steel
(ISO 15730:2000)**

Revêtements métalliques et autres revêtements
inorganiques - Polissage électrolytique: procédé de
brillantage (ou nivellement) et de passivation des
aciers inoxydables (ISO 15730:2000)

Metallische und andere anorganische Überzüge -
Elektropolieren als Mittel zum Glätten und Passivieren
von rostfreiem Stahl (ISO 15730:2000)

This European Standard was approved by CEN on 2 April 2016.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

The text of ISO 15730:2000 has been prepared by Technical Committee ISO/TC 107 “Metallic and other inorganic coatings” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15730:2016 by Technical Committee CEN/TC 262 “Metallic and other inorganic coatings” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 15730:2000 has been approved by CEN as EN ISO 15730:2016 without any modification.

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Introduction

Electropolishing removes a small but finite amount of metal from the surface that, in addition to smoothing and brightening, produces a hygienically clean surface desirable for use by manufacturers of food processing and medical equipment.

In addition to improved passivation, electropolishing provides many other benefits. Some examples are surface stress relief, removal of surface carbon and oxides and reduction of friction. Hydrogen embrittlement of articles is not produced during the electropolishing process, which takes minutes to perform.

The quality of passivation depends on the type of stainless steel, the formulation of the electropolishing solution and the conditions of operation. Free iron on the surface of the stainless steel is removed resulting in improved corrosion resistance. No further chemical treatment is necessary in order to passivate the stainless steel surface. Surface smoothing obtained by electropolishing also improves passivation.

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

Large quantities of hydrogen and oxygen gases are evolved at the electrodes during the electropolishing process. Proper ventilation procedures should be used to ensure their removal. Ignition of hydrogen gas can result in dangerous explosions.

1 Scope

This International Standard specifies the information to be supplied by the purchaser to the finisher, requirements and test methods for electropolishing as a means of smoothing and passivating stainless steel alloys in the S2XXXX, S3XXXX and S4XXXX series, and the precipitation hardened alloys (see ISO/TR 15510 for information on composition).

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 2064:1996, *Metallic and other inorganic coatings — Definitions and conventions concerning the measurement of thickness*.

ISO 2080:1981, *Electroplating and related processes — Vocabulary*.

ISO 4519:1980, *Electrodeposited metallic coatings and related finishes — Sampling procedures for inspection by attributes*.

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*.

ISO/TR 15510, *Stainless steels — Chemical composition*.

ISO 16348:—¹⁾, *Metallic and other inorganic coatings — Definitions and conventions concerning appearance*.

3 Terms and definitions

For the purposes of this International Standard, the definitions given in ISO 2064, ISO 2080 and ISO 4519 (some of which are repeated below for convenience) and the following apply.

1) To be published.