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Metallic and other inorganic coatings — Electropolishing as a means of smoothing and passivating stainless steel

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



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Contents

	Page
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Information to be supplied by the purchaser to the finisher	2
5 Requirements	2
6 Sampling	4
7 Test methods	4
8 Test report	5

Annex

A Typical electropolishing solution and operating conditions	7
Bibliography	8

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15730 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 8, *Chemical conversion coatings*.

Annex A of this International Standard is for information only.

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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.