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Plating and anodizing lines - Safety requirements

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Plating and anodizing lines - Safety requirements

Lignes de traitement de surface et d'anodisation - Prescriptions de sécurité

Galvanik- und Anodisieranlagen - Sicherheitsanforderungen

This European Standard was approved by CEN on 18 January 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

This document (EN 17059:2018) has been prepared by Technical Committee CEN/TC 271 “Surface treatment equipment - Safety”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

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

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard is a type C-standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

If provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards.

1 Scope

This document describes all significant hazards, hazardous situations and events relating to plating and anodizing lines, when used as intended and in compliance with the foreseeable conditions of the manufacturer. In addition, procedures for testing and measuring safety requirements, marking of equipment and minimum operation requirements are specified.

For reference to plating lines and anodizing lines the term plating line is used in this document.

This document applies to the design and construction of plating lines and anodizing lines including their transporter systems for surface treatment of industrial products by means of inorganic or organic electrolytes or by means of other process chemistries.

Plating lines and anodizing lines in terms of this standard are arrangements of process tanks for:

— electrolytic treatment of work pieces (e.g. electrocleaning, passivation, electroetching, burnishing, electrolytic polishing and brightening, drying);

— wet chemical treatment of work pieces (e.g. degreasing, passivation, chemical polishing, etching, pickling, blackening);

— electrolytic and electro-less metal deposition, even on non-metallic work pieces made electrically conductive by corresponding treatment;

— changing of substance composition on the surface of metallic work pieces e.g. burnishing, blackening, phosphatizing, chromating and;

— anodizing (anodic oxidation);

including rinsing tanks and the corresponding transporter equipment (e.g. transporter systems, handling gantry, bean, etc.), where the products are lifted in and out of tanks.

This document distinguishes between the following types of plating lines:

— Type 1: manual lines;

— Type 2: semi-automatic lines;

— Type 3: fully automatic lines.

Furthermore, it specifies equipment marking and requirements on user information.

This document does not deal with hazards resulting from plating linesparts above category 1 of PED (Pressure Equipment Directive).

This document is not applicable to:

— transporter systems of carrousel lines (see EN 618 and EN 15095);

— equipment for the preparation and treatment of water and waste water;

— machinery for dip coating and electro-deposition of organic liquid coating material (EN 12581);

— horizontal plating lines (e.g. printed circuit board, etching, reel to reel, continuous plating lines);

— machinery for surface cleaning and surface pre-treatment of industrial items using liquids or vapours (EN 12921-1, EN 12921-2, EN 12921-3, EN 12921-4).

NOTE Machinery for surface cleaning and surface pre-treatment (EN 12921 series) could be part of a plating line.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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EN 349:1993+A1:2008, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 981:1996+A1:2008, *Safety of machinery — System of auditory and visual danger and information signals*

EN 1037:1995+A1:2008, *Safety of machinery — Prevention of unexpected start-up*

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EN 1677-2:2000+A1:2008, *Components for slings — Safety — Part 2: Forged steel lifting hooks with latch, Grade 8*

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EN 13480-3:2017, *Metallic industrial piping — Part 3: Design and calculation*

EN 13480-4:2017, *Metallic industrial piping — Part 4: Fabrication and installation*

EN 13480-5:2017, *Metallic industrial piping — Part 5: Inspection and testing*

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EN 14462:2015, *Surface treatment equipment — Noise test code for surface treatment equipment including its ancillary handling equipment — Accuracy grades 2 and 3*

EN 14597:2012, *Temperature control devices and temperature limiters for heat generating systems*

EN 50110-1:2013, *Operation of electrical installations — Part 1: General requirements*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005)*

EN 61000-6-1:2017, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments (IEC 61000-6-1:2016)*

EN 61000-6-3:2007, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:2006)*

EN IEC 61000-6-4:2018, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments (IEC 61000-6-4:2018)*

EN 61496-1:2013, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2012)*

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