INTERNATIONAL STANDARD

ISO 17836

First edition
2004-11-01

Thermal spraying — Determination of the deposition efficiency for thermal spraying

Projection thermique — Détermination du rendement de dépôt en projection thermique

Reference number
ISO 17836:2004(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17836 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "...this European Standard..." to mean "...this International Standard...".

Annex ZA provides a list of corresponding International and European Standards for which equivalents are not given in the text.

Contents

Foreword

This document (EN ISO 17836:2004) has been prepared by Technical Committee CEN/TC 240 “Thermal spraying and thermally sprayed coatings”, the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 107 “Metallic and other inorganic coatings”.

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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

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

Introduction

This document includes the definitions for determining the deposition efficiency for thermal spraying. The document describes the test implementation procedure to determine the deposition efficiency for an individual spray process and a spray material when using a defined test piece.

The deposition efficiency calculated on a test piece according to this document needs not to correspond to the deposition efficiency on a component.

1 Scope

It is essential to apply this document if data concerning the deposition efficiency of a spray process in connection with a defined spray material are required.

This document defines the procedure for determining the deposition efficiency for a thermal spray process in connection with a spray material and related equipment and auxiliary materials. It is applicable for all thermal spray processes (see EN 657) and all wire, rod, cord and powder spray materials.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 657, *Thermal spraying — Terminology, classification.*

EN 1274, *Thermal spraying — Powders — Composition — Technical supply conditions.*

EN 13507, *Thermal spraying — Pre-treatment of surfaces of metallic parts and components for thermal spraying.*

EN ISO 14919, *Thermal spraying — Wires, rods and cords for flame and arc spraying — Classification — Technical supply conditions (ISO 14919:2001).*

3 Terms and definitions

For the purposes of this document, the following term and definition applies.

3.1
deposition efficiency (DE)
ratio of the mass of the spray material deposited on the test piece under standard conditions to the mass of the spray material required and fed through for this purpose in %

4 Test pieces, equipment, working and auxiliary materials

a) Test pieces can be selected from:

   1) a test pipe, dimensions according to Annex A;

   2) a test plate, dimensions according to Annex B.

b) Equipment/working materials:

   1) spray equipment;

   2) handling system (if spray process is mechanised);

   3) metering device (feeder for wire, rod, cord or powder);

   4) fuel gases/fuel/electric energy;

   5) plasma gases;

   6) spray cabin;

   7) filter/exhaust system.