



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 14921:2010

# Thermal spraying - Procedures for the application of thermally sprayed coatings for engineering components (ISO 14921:2010)

## I.S. EN ISO 14921:2010

*Incorporating amendments/corrigenda issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i> EN ISO 14921:2001	<i>This document is based on:</i> EN ISO 14921:2010	<i>Published:</i> 15 December, 2010
This document was published under the authority of the NSAI and comes into effect on: 7 January, 2011		ICS number: 25.220.20
<b>NSAI</b> 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	<b>Sales:</b> T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeáin Náisiúnta na hÉireann		

I.S. EN ISO 14921:2010

EUROPEAN STANDARD

EN ISO 14921

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2010

ICS 25.220.20

Supersedes EN ISO 14921:2001

English Version

## Thermal spraying - Procedures for the application of thermally sprayed coatings for engineering components (ISO 14921:2010)

Projection thermique - Mode opératoire d'application de revêtements obtenus par projection thermique pour les pièces mécaniques (ISO 14921:2010)

Thermisches Spritzen - Vorgehen für das Anwenden thermischer Spritzschichten für Bauteile im Maschinenbau (ISO 14921:2010)

This European Standard was approved by CEN on 10 December 2010.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

## **Contents**

Page

<b>Foreword.....</b>	<b>3</b>
----------------------	----------

## **Foreword**

This document (EN ISO 14921:2010) 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 June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

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.

This document supersedes EN ISO 14921:2001.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

*This page is intentionally left BLANK.*

I.S. EN ISO 14921:2010  
**INTERNATIONAL  
STANDARD**

**ISO  
14921**

Second edition  
2010-12-15

---

---

**Thermal spraying — Procedures for the  
application of thermally sprayed coatings  
for engineering components**

*Projection thermique — Mode opératoire d'application de revêtements  
obtenus par projection thermique pour les pièces mécaniques*



Reference number  
ISO 14921:2010(E)

© ISO 2010

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2010

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

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](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



# Contents

Page

<b>Foreword .....</b>	<b>iv</b>
<b>Introduction.....</b>	<b>v</b>
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>1</b>
<b>4 Component and coating design considerations.....</b>	<b>1</b>
4.1 General .....	1
4.2 Pre-inspection in the case of repair .....	2
4.3 Component substrate .....	2
4.4 Coating .....	2
<b>5 Preliminary machining by turning, milling, or grinding .....</b>	<b>3</b>
<b>6 Masking .....</b>	<b>3</b>
<b>7 Methods of surface preparation.....</b>	<b>3</b>
<b>8 Thermal spraying.....</b>	<b>4</b>
<b>9 Inspection after spraying.....</b>	<b>4</b>
<b>10 Sealing .....</b>	<b>4</b>
<b>11 Finishing.....</b>	<b>4</b>
<b>12 Final inspection .....</b>	<b>4</b>
<b>13 Documentation .....</b>	<b>5</b>
<b>Annex A (informative) Flow chart for assessment of suitability of thermal spraying .....</b>	<b>6</b>
<b>Annex B (informative) Check list for evaluation of the most suitable coating system for the intended purpose .....</b>	<b>7</b>
<b>Annex C (informative) Record for the applied thermal spray procedure .....</b>	<b>8</b>
<b>Bibliography.....</b>	<b>12</b>

## 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 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 14921 was prepared by Technical Committee CEN/TC 240, *Thermal spraying and thermally sprayed coatings* of the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee ISO/TC 107, *Metallic and other inorganic coatings* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 14921:2001), which has been technically revised.

## **Introduction**

Components might fail if the surface does not fulfil the physical, chemical, and/or technological requirements. For several applications, this deficiency can be avoided by a thermally sprayed coating.

Where appropriate, a coating may be applied to protect the component's surface or to improve its behaviour by increasing the resistance against wear and/or corrosion, or the electrical or thermal conductivity or insulation or by reducing the friction coefficient.

There are limits to the applicable thickness of some thermally sprayed coatings. However, several different coatings may be built up one upon another. In the case of extensive loss of material through corrosion or wear, an alternative suitable spraying material may be applied prior to the top coat or the bond and top coat.

**I.S. EN ISO 14921:2010**

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-