



NSAI
Standards

Irish Standard
I.S. EN ISO 14920:2015

Thermal spraying - Spraying and fusing of self-fluxing alloys (ISO 14920:2015)

I.S. EN ISO 14920:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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Thermal spraying - Spraying and fusing of self-fluxing alloys (ISO 14920:2015)

Projection thermique - Projection et fusion d'alliages
autofondants (ISO 14920:2015)

Thermisches Spritzen - Spritzen und Einschmelzen von
selbstfließenden Legierungen (ISO 14920:2015)

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EN ISO 14920:2015 (E)

Contents	Page
Foreword.....	3

Foreword

This document (EN ISO 14920:2015) 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of an identical text or by endorsement, at the latest by July 2015, and conflicting national standards shall be withdrawn at the latest by July 2015.

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.

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The text of ISO 14920:2015 has been approved by CEN as EN ISO 14920:2015 without any modification.

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**INTERNATIONAL
STANDARD**

**ISO
14920**

Second edition
2015-01-15

**Thermal spraying — Spraying and
fusing of self-fluxing alloys**

Projection thermique — Projection et fusion d'alliages autofondants



Reference number
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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Influence on the substrate and design	1
3.1 Substrate metal.....	1
3.2 Design.....	1
4 Spray material of the self-fluxing alloy	2
4.1 Selection.....	2
4.2 Composition.....	2
5 Preparation of the component	2
5.1 General.....	2
5.2 Methods of surface preparation.....	3
5.3 Cleanliness.....	3
6 Spray and fusion process	3
6.1 Spraying with simultaneous fusion.....	3
6.1.1 Procedure.....	3
6.1.2 Particle size and particle size range of the powder particles.....	3
6.1.3 Coating thickness.....	3
6.2 Spraying with subsequent fusion.....	4
6.2.1 Procedure.....	4
6.2.2 Particle size and particle size range of the powder particles.....	4
6.2.3 Coating thickness.....	4
6.3 Spraying technique — Procedure.....	4
6.3.1 General.....	4
6.3.2 Preheating.....	4
6.3.3 Spraying.....	4
6.3.4 Fusing the deposit.....	5
6.3.5 Cooling.....	5
7 Final machining	5
8 Hardness testing	5
8.1 General.....	5
8.2 Standard hardness test.....	6
Annex A (informative) Reference values for the expected hardness of the fused coating	7
Bibliography	8

ISO 14920:2015(E)

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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ISO 14920 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 240, *Thermal spraying and thermally sprayed coatings*, 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).

This second edition cancels and replaces the first edition (ISO 14920:1999), which has been technically revised.

Introduction

Requests for official interpretations of any aspect of this standard should be directed to the secretariat of ISO/TC 107/WG 1 via your national standards body, a complete listing which can be found at www.iso.org.

Thermal spraying — Spraying and fusing of self-fluxing alloys

1 Scope

This International standard defines the procedure for thermal spraying of self-fluxing alloys that are simultaneously or subsequently fused to create a homogeneous, diffusion bonded coating.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11124-1, *Preparation of steel substrates before application of paints and related products — Specifications for metallic blast-cleaning abrasives — Part 1: General introduction and classification*

ISO 11126-1, *Preparation of steel substrates before application of paints and related products — Specifications for non-metallic blast-cleaning abrasives — Part 1: General introduction and classification*

ISO 12679, *Thermal spraying — Recommendations for thermal spraying*

ISO 14924, *Thermal spraying — Post-treatment and finishing of thermally sprayed coatings*

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*

3 Influence on the substrate and design

3.1 Substrate metal

Due to the heat transfer into the substrate metal when fusing the coating, in order to bond the coating with the substrate metal by diffusion, the possible effects of such heating on the substrate metal shall be considered:

- a) scaling;
- b) the need to stress relieve;
- c) an irreversible transformation of the mechanical and/or metallurgical properties.

Martensitic steels are susceptible to stress cracking and alloys containing significant amounts of C, Al, Ti, Mg, S, sulfides, P, and nitrogen can create porosity in the coating and may render the substrate metal liable to stress cracking.

3.2 Design

The preparation of the component for spraying and fusing of a coating usually includes a reduction of the design dimensions, if pre-machining is applied. Consideration shall be given to the effect of such a reduction on the loading of the component, as the coating does not contribute to the strength of the component. Consideration shall be given, to the fact that the sprayed and fused coating will have differing physical properties to the substrate material.

The fatigue strength, the deformation resistance, and other properties of the component can be affected by the application of the coating.

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