
**Thermal spraying — Quality requirements
of thermally sprayed structures —**

**Part 4:
Elementary quality requirements**

*Projection thermique — Exigences qualité des constructions obtenues par
projection thermique —*

Partie 4: Exigences qualité élémentaires



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.

This document is a preview generated by EVS

© ISO 1999

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 22 734 10 79
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

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 member bodies for voting. Publication as an International Standard requires approval by at least 75 % of member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 14922 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14922-4 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 5, *Thermal spraying*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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

ISO 14922 consists of the following parts, under the general title *Thermal spraying — Quality requirements of thermally sprayed structures*:

- *Part 1: Guidance for selection and use*
- *Part 2: Comprehensive quality requirements*
- *Part 3: Standard quality requirements*
- *Part 4: Elementary quality requirements*

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

Contents

	Page
Foreword	v
1 Scope	1
2 Normative references	1
3 Definitions	2
4 Contract and design review	2
4.1 General	2
4.2 Application – Contract review	2
4.3 Application – Design review	2
5 Sub-contracting	3
6 Personnel for thermal spraying	3
6.1 General	3
6.2 Qualified thermal sprayer	3
6.3 Thermal spraying coordinator	3
7 Personnel for quality testing	3
7.1 General	3
7.2 Non-destructive testing	3
8 Equipment	3
8.1 Equipment for manufacturing	3
8.2 Health and safety and environmental aspects	4
9 Thermal spraying activities	4
10 Consumables for thermal spraying	4
11 Storage and handling of substrate materials	4
12 Thermal spraying related inspection and testing	4
12.1 Inspection and testing before thermal spraying	4
12.2 Inspection and testing after thermal spraying	4
13 Non-conformance and corrective actions	4
14 Calibration	5
15 Identification and traceability	5
16 Quality records	5
Annex ZA (informative) Bibliography	6

Foreword

The text of EN ISO 14922-4:1999 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 December 1999, and conflicting national standards shall be withdrawn at the latest by December 1999.

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

This document is a preview generated by EVS

This document is a preview generated by EVS

1 Scope

This standard specifies requirements so that:

- It is independent of the type of the thermally sprayed structure.
- It defines quality requirements for thermal spraying both in workshops and on site.
- It provides guidance for describing a manufacturer's capability to produce thermally sprayed constructions to meet specified requirements.
- It may also be used as a basis for assessing the manufacturer in respect to his thermal spraying capability.

This standard is appropriate when demonstration of a manufacturer's capability to produce thermally sprayed construction, fulfilling specified quality requirements, are specified in one or more of the following:

- a contract between involved parties;
- an application standard;
- a regulatory requirement.

The requirements contained within this standard may be adopted in full or may be selectively deleted by the manufacturer if not applicable to the construction concerned. They provide a flexible framework for the control of thermal spraying in the following cases:

- Case 1

To provide specific requirements for thermal spraying in contracts which require the manufacturer to have a quality system other than EN ISO 9001 or EN ISO 9002.

- Case 2

To provide specific requirements for thermal spraying in contracts which require the manufacturer developing a quality system.

- Case 3

To provide specific requirements for thermal spraying in application standards which uses thermal spraying as part of its requirements or in a contract between relevant parties.

2 Normative references

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 473

Non-destructive testing – Qualification and certification of personnel

EN 582

Thermal spraying – Determination of the adhesive tensile strength

EN 657

Thermal spraying – terminology – Classification

EN 1274

Thermal spraying – Powders – Composition – Technical supply conditions

EN ISO 9001

Quality systems – Model for quality assurance in design/development, production, installation and servicing (ISO 9001 : 1994)

EN ISO 9002

Quality systems – Model for quality assurance in production, installation and servicing (ISO 9002 : 1994)

prEN ISO 14919

Thermal spraying – Wires, rods and cords for flame and arc spraying – Classification – Technical supply conditions

EN ISO 14922-1

Quality requirements of thermally sprayed structures – Part 1: Guidelines for selection and use

ISO 8402 : 1994

Quality management and quality assurance – Vocabulary

3 Definitions

For the purposes of this standard definitions given in EN 657 and listed in part 1 of this standard apply.

4 Contract and design review

4.1 General

The manufacturer shall review the contractual requirements and the design data provided by the purchaser or in-house data for construction designed by the manufacturer. This is to ensure that all information necessary to carry out the fabrication operations is available prior to the commencement of the work. The manufacturer shall affirm his capability to meet all thermal spraying contract requirements and ensure adequate planning of all quality related activities.

4.2 Application – Contract review

Contractual requirements to be considered should include:

- a) the application standard to be used, together with any supplementary requirements;
- b) inspection and testing;
- c) final testing;
- d) environmental conditions relevant to thermal spraying on site;
- e) sub-contracting,
- f) handling of non-conformance.

4.3 Application – Design review

Design requirements to be considered should include:

- a) location, accessibility and sequence of all coatings;
- b) surface finish of the coating;
- c) substrate material specification and coating properties;
- d) dimensions and details of prepared substrate surfaces and sprayed coatings;
- e) quality and acceptance requirements for coatings.