

**Kuumpihustamine. Kvaliteedinõuded
kuumpihustatud struktuuridele. Osa 1:
Juhised valikuks ja kasutamiseks**

Thermal spraying - Quality requirements of thermally
sprayed structures - Part 1: Guidance for selection
and use

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 14922-1:2000 sisaldab Euroopa standardi EN ISO 14922-1:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 14922-1:2000 consists of the English text of the European standard EN ISO 14922-1:1999.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>These guidelines have been prepared to describe thermal spraying quality requirements suitable for application by the manufacturers using the thermal spraying process for coating new parts, for repair and maintenance.</p>	<p>Scope:</p> <p>These guidelines have been prepared to describe thermal spraying quality requirements suitable for application by the manufacturers using the thermal spraying process for coating new parts, for repair and maintenance.</p>
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Võtmesõnad:

English version

Thermal spraying

Quality requirements of thermally sprayed structures

Part 1: Guidance for selection and use

(ISO 14922-1 : 1999)

Projection thermique – Exigences
qualité des constructions obtenues
par projection thermique – Partie 1:
Lignes directrices pour leur sélection
et utilisation (ISO 14922-1 : 1999)

Thermisches Spritzen – Qualitäts-
anforderungen an thermisch
gespritzte Bauteile – Teil 1: Richt-
linien zur Auswahl und Verwendung
(ISO 14922-1 : 1999)

This European Standard was approved by CEN on 1999-02-19.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 14922-1 : 1999 Thermal spraying – Quality requirements of thermally sprayed structures – Part 1: Guidance for selection and use,

which was prepared by ISO/TC 107 'Metallic and other inorganic coatings' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 240 'Thermal spraying and thermally sprayed coatings', the Secretariat of which is held by DIN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by December 1999 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 14922-1 : 1999 was approved by CEN as a European Standard without any modification.

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Introduction

Thermal spraying processes are widely applied for producing industrial products. Thermal spraying has become increasingly important in parts of industrial application, manufacturing, maintenance and repair. It is applied on constructions in automotive industry, aerospace gasturbines, machinery construction, printing industry, chemical industry for anticorrosive purposes, antiwear high temperature protection and against chemical attack, to mention some of the applications.

Consequently the thermal spraying process has a great influence on the production costs and completion of the product. Therefore it is important to apply the thermal spraying process in an effective way and to carry out quality management and assurance on any point of the production.

In the standard EN ISO 9000 and series for quality management systems for instance, the processes for protecting surfaces are pointed out as special processes, because most of the processes for surface protection cannot be NDT-controlled during the production in that way to guaranty that the required standard of quality has been fulfilled.

Quality cannot be put into a product by testing afterwards, but it has to be created in it by quality assurance during its manufacturing. Even the most developed and complete nondestructive testing procedures do not improve the quality of a thermal sprayed coating afterwards, they only give records upon its quality.

To use the thermal sprayed coating adequately and to avoid severe problems during the production and during operational time, controlling and supervising are necessary including the phases of construction, the choise of material, the production and the succeeding testing procedures.

To assure perfect thermal spraying manufacturing and to recognize sources of possible problems, the manufacturer's management has to introduce an adequate quality management.

1 Scope

This standard specifies guidelines to describe thermal spraying quality requirements suitable for application by the manufacturers using the thermal spraying process for coating new parts, for repair and maintenance. They are structured in the way that they can be used for any type of construction to be sprayed. These guidelines relate only to those aspects of the quality of the final construction to be sprayed which may be influenced by thermal spraying and allied processes (pre- and posttreatment, etc.).

The guidelines define various approaches to quality requirements for thermal spray works, both in workshops and on sites and to provide guidance for describing the capability of a manufacturer on producing thermally sprayed structures of the specified quality. They also can be used by any interested party as a basis for assessing a manufacturer's thermal spraying quality arrangements.

The guidelines are intended as a guide for the preparation of regulatory or contractual requirements and for a manufacturer's management to define the thermal spraying requirements for quality system related to the type of thermally sprayed construction. The guidelines are not structured to be used in isolation as a part of any regulatory contractual or managerial requirement.

These guidelines are intended to be used for the following purposes:

- a) providing interpretation of the requirements in the EN ISO 9000 series of standards, as a guideline for specification and establishment of the part of the quality system related to control of thermal spraying as a "Special Process";
- b) providing guidelines to establish specifications and thermal spraying quality requirements, where a quality system according to EN ISO 9001 and EN ISO 9002 is not involved;
- c) assessment of the thermal spraying quality requirements mentioned in a) and b) above.

The application of this standard would typically occur in the following circumstances:

- in contractual situation: specification of thermal spraying requirements for quality systems;
- by manufacturers: establishment and maintenance of thermal spraying quality requirements;
- by committees preparing structural codes or other application standards: specification of thermal spraying requirements;
- by interested parties, e.g. third parties, customers or manufacturers management: assessment of thermal spraying requirements.

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 ISO 9000-1

Quality management and quality assurance standards – Part 1: Guidelines for selection and use (ISO 9000-1 : 1994)

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)

EN ISO 14922-2

Thermal spraying – Quality requirements of thermally sprayed structures – Part 2: Comprehensive quality requirements

EN ISO 14922-3

Thermal spraying – Quality requirements of thermally sprayed structures – Part 3: Standard quality requirements

EN ISO 14922-4

Thermal spraying – Quality requirements of thermally sprayed structures – Part 4: Elementary quality requirements

ISO 8402 : 1994

Quality management and quality assurance – Vocabulary

3 Definitions

For the purpose of this standard the following definitions shall apply:

3.1 contract (for thermal spraying): Agreed requirements for constructions to be sprayed or for the coating

ordered by the customer, or manufacturer's basic specification for constructions manufactured in series for several customers, unknown to the manufacturer at the time of design and production.

The contract is, in both cases, assumed to include reference to all relevant regulatory requirements.

NOTE: The role of an independent body is considered to be a matter which is determined by the contracting parties and/or the application standard.

3.2 special process: Processes the results of which cannot be fully verified by subsequent inspection and

testing of the product and where, for example, processing deficiencies may become apparent only after the product is in use. Accordingly, continuous monitoring and/or compliance with documented procedures is required to ensure that the specified requirements are met (see 4.9 of EN ISO 9001: 1994).

3.3 manufacturing organisation: Organization of which the thermal spraying workshops and/or sites are

under the same technical and quality management.

3.4 qualified person (for thermal spraying): A person whose competence and knowledge has been obtained by education, by training and/or relevant practical experience.

3.5 construction (for thermal spraying): Synonym for product, structure or any other thermally sprayed system.

3.6 quality management system:

According to ISO 8402.

4 Selection of quality requirements for thermal spraying

By using this standard it is possible to select the thermal spraying quality requirements, to suit the type of thermally sprayed constructions concerned, in accordance with the following parts as appropriate:

– Quality requirements of thermally sprayed structures – Part 2: Comprehensive quality requirements (EN ISO 14922-2);

– Quality requirements of thermally sprayed structures – Part 3: Standard quality requirements (EN ISO 14922-3);

– Quality requirements of thermally sprayed structures – Part 4: Elementary quality requirements (EN ISO 14922-4).