ICS 25.220.20 SLOVENSKÁ TECHNICKÁ NORMA September 2017

STN	**Žiarové striekanie Stanovenie adhéznej sily v ťahu (ISO 14916: 2017)**	**STN EN ISO 14916 03 8711**

Thermal spraying - Determination of tensile adhesive strength (ISO 14916:2017)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/17

Obsahuje: EN ISO 14916:2017, ISO 14916:2017

Oznámením tejto normy sa ruší
STN EN 582 (03 8711) z novembra 2000

125373

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 14916

March 2017

ICS 25.220.20

Supersedes EN 582:1993

English Version

Thermal spraying - Determination of tensile adhesive strength (ISO 14916:2017)

Projection thermique - Mesure de l'adhérence par essais de traction (ISO 14916:2017)

Thermisches Spritzen - Ermittlung der Haftzugfestigkeit (ISO 14916:2017)

This European Standard was approved by CEN on 8 March 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 14916:2017 E

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European foreword

This document (EN ISO 14916:2017) has been prepared by Technical Committee ISO/TC 107 "Metallic and other inorganic coatings" in collaboration with Technical Committee CEN/TC 240 “Thermal spraying and thermally sprayed coatings” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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Endorsement notice

The text of ISO 14916:2017 has been approved by CEN as EN ISO 14916:2017 without any modification.

INTERNATIONAL STANDARD

ISO 14916

Second edition
2017-03

Thermal spraying — Determination of tensile adhesive strength

Projection thermique — Mesure de l'adhérence par essais de traction

Reference number
ISO 14916:2017(E)

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Foreword

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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 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*.

This second edition cancels and replaces the first edition (ISO 14916:1999), which has been technically revised.

Introduction

The determination of the tensile adhesive strength of a thermal spray coating can play an important role in the quality control of production. Deviations from the normal and qualified procedure can be recognized when preparing and spraying a component.

If the fracture occurs cohesively in the coating when applying the tensile adhesive strength test, the coating's strength in the direction normal to the surface is supplied. Influences of variations in spray conditions can be identified via proper interpretation of tensile test results. Microscopic investigations of the fractured surface can supply further information for judging the quality of the coating's structure.

A revision of the existing document had been required as a result of the identification of significant influences on the test results caused by the tensile test bonding procedure and by the properties of the adhesive itself. These findings were not adequately covered in the previous version of this document.

INTERNATIONAL STANDARD **ISO 14916:2017(E)**

Thermal spraying — Determination of tensile adhesive strength

1 Scope

This document specifies the procedure to determine the tensile adhesive strength of thermally sprayed coatings under tension in the direction normal to the surface of the coating by applying a tensile test. By using this procedure, comparability of the test results is ensured.

The test is intended to determine the tensile adhesive strength between the thermally sprayed coating and the substrate material or between the bond and top coat and/or of the cohesive strength of the related coat of the coating system. In some cases, thermally sprayed coatings might have more than two layers. The method specified in this document applies also to determine the tensile adhesive strength between the interfaces of different layers in a coating system which consists of more than two layers.

This test is sufficient to compare coatings manufactured using same or similar feedstock materials and thermal spray processes with each other. The tensile adhesive strength test is not intended to provide absolute values for evaluation of the durability of coatings under operational use.

The test is used to assess the influence of substrate preparation, the spraying conditions and the process parameter on the tensile adhesive strength of thermally sprayed coatings. It can also be employed in order to monitor the consistency of the manufacturing and spraying processes.

NOTE This tensile test can also be applied to very thin coatings. Moreover, the infiltration of bonding agent into the thermally sprayed coatings containing a required level of porosity can be minimized using an appropriate bonding agent (foil rather than liquid). For further instructions, please refer to 6.5.3. This tensile test is inappropriate for determining the adhesive strength of fused spray coatings deposited using self-fluxing alloys due to their inherent high adhesion strength values.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 14917, *Thermal spraying — Terminology, classification*

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

