

SLOVENSKI STANDARD

SIST EN ISO 22825:2018

01-marec-2018

Nadomešča:

SIST EN ISO 22825:2012

Neporušitveno preskušanje zvarnih spojev - Ultrazvočno preskušanje - Preskušanje zvarnih spojev iz avstenitnih jekel in nikljevih zlitin (ISO 22825:2017)

Non-destructive testing of welds - Ultrasonic testing - Testing of welds in austenitic steels and nickel-based alloys (ISO 22825:2017)

Zerstörungsfreie Prüfung von Schweißverbindungen - Ultraschallprüfung - Prüfung von Schweißverbindungen in austenitischen Stählen und Nickellegierungen (ISO 22825:2017)

SIST EN ISO 22825:2018

Contrôle non destructif des assemblages soudés - Contrôle par ultrasons - Contrôle des soudures en aciers austénitiques et en alliages à base nickel (ISO 22825:2017)

Ta slovenski standard je istoveten z: EN ISO 22825:2017

ICS:

25.160.40	Varjeni spoji in vari	Welded joints and welds
77.080.20	Jekla	Steels
77.120.40	Nikelj, krom in njune zlitine	Nickel, chromium and their alloys

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en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 22825

November 2017

ICS 25.160.40

Supersedes EN ISO 22825:2012

English Version

**Non-destructive testing of welds - Ultrasonic testing -
Testing of welds in austenitic steels and nickel-based
alloys (ISO 22825:2017)**

Essais non destructif des assemblages soudés -
Contrôle par ultrasons - Contrôle des soudures en
aciers austénitiques et en alliages à base nickel (ISO
22825:2017)

Zerstörungsfreie Prüfung von Schweißverbindungen -
Ultraschallprüfung - Prüfung von
Schweißverbindungen in austenitischen Stählen und
Nickellegierungen (ISO 22825:2017)

This European Standard was approved by CEN on 26 August 2017.

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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN ISO 22825:2017) has been prepared by Technical Committee ISO/TC 44 “Welding and allied processes” in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” 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 May 2018 and conflicting national standards shall be withdrawn at the latest by May 2018.

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

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INTERNATIONAL STANDARD

**ISO
22825**

Third edition
2017-09

Non-destructive testing of welds — Ultrasonic testing — Testing of welds in austenitic steels and nickel-based alloys

*Essais non destructifs des assemblages soudés — Contrôle par
ultrasons — Contrôle des soudures en aciers austénitiques et en
alliages à base nickel*

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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 (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. (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

This third edition cancels and replaces the second edition (ISO 22825:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

- correction of an incorrect equation;
- update of the normative references and the bibliography;
- editorial modifications in the whole document;
- inclusion of the phased array technique.

Requests for official interpretations of any aspect of this document should be directed to the Secretariat of ISO/TC 44/SC 5 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

Introduction

Welds in austenitic steel components and dissimilar metal welds are widely regarded as very difficult to test by ultrasound. The problems are mainly associated with unfavourable structure and grain size, as well as with different material properties which result in inhomogeneous and anisotropic mechanical and acoustic properties that contrast with the relatively homogeneous and isotropic behaviour in low-alloy steel welds.

Austenitic weld metal and other coarse-grained, anisotropic materials can significantly affect the propagation of ultrasound. In addition, beam distortion, unexpected reflections and wave mode conversions on the fusion line and/or columnar grains can occur. Therefore it can be difficult and sometimes impossible for ultrasonic waves to penetrate the weld metal.

Ultrasonic testing of these metals may require techniques that differ from conventional testing techniques. These special techniques often include the use of dual-element probes designed for refracted compression (longitudinal) waves or creeping waves rather than for conventional shear (transverse) waves.

In addition, it is necessary to produce representative reference blocks with welds in order to develop a testing procedure, set a preliminary sensitivity level, assess the procedure and demonstrate effectiveness before a definitive procedure is written. Material, weld preparation and welding procedure, as well as the geometry and surface condition of reference blocks are the same as for the component being tested.

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