SLOVENSKI STANDARD
oSIST prEN ISO 22825:2016

01-november-2016

Neporušitveno preskušanje zvarnih spojev - Ultrazvočno preskušanje - Preskušanje zvarnih spojev iz avstenitnih jekel in nikljevih zlitin (ISO/DIS 22825:2016)

Non-destructive testing of welds - Ultrasonic testing - Testing of welds in austenitic steels and nickel-based alloys (ISO/DIS 22825:2016)

Zerstörungsfreie Prüfung von Schweißverbindungen - Ultraschallprüfung - Prüfung von Schweißverbindungen in austenitischen Stählen und Nickellegierungen (ISO/DIS 22825:2016)

Contrôle non destructif des assemblages soudés - Contrôle par ultrasons - Contrôle des soudures en aciers austénitiques et en alliages à base nickel (ISO/DIS 22825:2016)

Ta slovenski standard je istoveten z: **prEN ISO 22825**

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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DRAFT INTERNATIONAL STANDARD

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

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

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Foreword

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The committee responsible for this document is ISO/TC 44/SC 5.

ISO 22825 was prepared by the European Committee for Standardization (CEN) Technical Committee TC 121, *Welding*, Sub-committee SC 5, *Testing of welds*, in collaboration with Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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

The main changes are:

— correction of an incorrect equation;

— update of the references;

— compression wave angle-beam techniques,

— stainless steel calibration blocks for range setting;

— examples of reference blocks.

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.