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Resistance welding - Procedure for spot welding of uncoated and coated low carbon steels (ISO 14373:2024)

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. 06/24

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EN ISO 14373

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Supersedes EN ISO 14373:2015

English Version

Resistance welding - Procedure for spot welding of uncoated and coated low carbon steels (ISO 14373:2024)

Soudage par résistance - Mode opératoire pour le soudage par points des aciers à bas carbone revêtus et non revêtus (ISO 14373:2024)

Widerstandsschweißen - Verfahren zum Punktschweißen von niedriglegierten Stählen mit oder ohne metallischem Überzug (ISO 14373:2024)

This European Standard was approved by CEN on 29 December 2023.

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

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European foreword

This document (EN ISO 14373:2024) 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of an identical text or by endorsement, at the latest by July 2024, and conflicting national standards shall be withdrawn at the latest by July 2024.

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.

This document supersedes EN ISO 14373:2015.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 14373:2024 has been approved by CEN as EN ISO 14373:2024 without any modification.

International Standard

ISO 14373

Resistance welding — Procedure for spot welding of uncoated and coated low-carbon steels

Soudage par résistance — Mode opératoire pour le soudage par points des aciers à bas carbone revêtus et non revêtus

Third edition
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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 document 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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 6, *Resistance welding and allied mechanical joining*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 14373:2015), which has been technically revised.

The main changes are as follows:

— figures showing failure types and modes for tensile shear and cross tension testing removed;

— new coating types added;

— cross-tension strength (CTS) values added;

— tensile shear strength (TSS) formula removed;

— tolerance for distortions reduced.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html. Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

Introduction

Information on appropriate welding equipment is given in Annex A and information on spot-welding conditions is given in Annex B. This information is provided for guidance only.

Depending on the service conditions of the fabrication, the type of welding equipment, the characteristics of the secondary circuit, the electrode force actuation system, the electrode material and the shape, it is possible that certain modifications will be necessary. In such cases, further information can be obtained from the relevant application standard, where one exists.

International Standard **ISO 14373:2024(en)**

Resistance welding — Procedure for spot welding of uncoated and coated low-carbon steels

1 Scope

This document specifies requirements for resistance spot welding in the fabrication of assemblies of uncoated and metallic-coated or weldable non-metallic-coated low-carbon steel, comprising two or three sheets of metal, where the maximum single-sheet thickness of components to be welded is within the range 0,4 mm to 3,0 mm.

This document is applicable to welding of sheets of the same or unequal thickness, where the thickness ratio is less than or equal to 3:1.

Welding with the following types of equipment is within the scope of this document:

a) pedestal welding equipment;

b) portable welding guns;

c) automatic welding equipment where the components are fed by robots or automatic feeding equipment;

d) multi-spot-welding machines;

e) robotic welding machines.

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 10447, *Resistance welding — Testing of welds — Peel and chisel testing of resistance spot and projection welds*

ISO 15609-5, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 5: Resistance welding*

ISO 15614-12, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 12: Spot, seam and projection welding*

ISO 17677-1, *Resistance welding — Vocabulary — Part 1: Spot, projection and seam welding*