SLOVENSKI STANDARD
SIST EN ISO 13919-1:2020

01-marec-2020

Nadomešča:
SIST EN ISO 13919-1:1998

Varjenje - Zvarni spoji, zvarjeni z elektronskim snopom in laserskim žarkom - Zahteve in priporočila za stopnje sprejemljivosti nepravilnosti - 1. del: Jeklo, nikelj, titan in njihove zlitine (ISO 13919-1:2019)

Electron and laser-beam welded joints - Requirements and recommendations on quality levels for imperfections - Part 1: Steel, nickel, titanium and their alloys (ISO 13919-1:2019)

Elektronen- und Laserstrahl-Schweißverbindungen - Leitfaden für Bewertungsgruppen für Unregelmäßigkeiten - Teil 1: Stahl, Nickel, Titan und seine Legierungen (ISO 13919-1:2019)

Assemblages soudés par faisceau d'électrons et par faisceau laser - Exigences et recommandations sur les niveaux de qualité des défauts - Partie 1: Acier, nickel, titane et leurs alliages (ISO 13919-1:2019)

Ta slovenski standard je istoveten z: **EN ISO 13919-1:2019**

ICS:

25.160.40	Varjeni spoji in vari	Welded joints and welds

SIST EN ISO 13919-1:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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ICS 25.160.40

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English Version

Electron and laser-beam welded joints - Requirements and recommendations on quality levels for imperfections - Part 1: Steel, nickel, titanium and their alloys (ISO 13919-1:2019)

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This European Standard was approved by CEN on 21 October 2019.

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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

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European foreword

This document (EN ISO 13919-1:2019) 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 2020, and conflicting national standards shall be withdrawn at the latest by May 2020.

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 13919-1:1996.

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, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 13919-1:2019 has been approved by CEN as EN ISO 13919-1:2019 without any modification.

INTERNATIONAL STANDARD

ISO 13919-1

Second edition
2019-10

Electron and laser-beam welded joints — Requirements and recommendations on quality levels for imperfections —

Part 1: Steel, nickel, titanium and their alloys

Assemblages soudés par faisceau d'électrons et par faisceau laser — Exigences et recommandations sur les niveaux de qualité des défauts —

Partie 1: Acier, nickel, titane et leurs alliages

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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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 10, *Quality management in the field of welding*.

This second edition cancels and replaces the first edition (ISO 13919-1:1996) which has been technically revised.

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

— the text has been editorial revised;

— the normative references have been updated;

— reference to ISO 6520-1 has been added to bring the document in line with ISO 5817.

A list of all parts in the ISO 13919 series can be found on the ISO website.

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 TC 44 documents, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

Introduction

This document is intended to be used as a reference in drafting application codes and/or other application standards. It contains a simplified selection of laser and electron beam welding imperfections based on the designations given in ISO 6520-1.

Limits on some of the individual imperfections described in ISO 6520-1 have been prescribed directly whereas some have been grouped together. The basic numerical referencing system from ISO 6520-1 has been used.

The quality levels given in this document provide basic reference data and are not specifically related to any particular application. They refer to the types of welded joint in fabrication and not to the complete product or component itself. Therefore, it is possible that different quality levels are applied to individual welded joints in the same product or component.

It would normally be expected that, for a particular welded joint, the dimensional limits for imperfections can all be covered by specifying one quality level. In some cases, it can be necessary to specify different quality levels for different imperfections in the same welded joint.

The choice of quality level for any application is expected to take account of design considerations, subsequent processing (e.g. surfacing), mode of stressing (e.g. static, dynamic), service requirements and conditions (e.g. temperature, pressure or vacuum levels, environment) and consequences of failure. These considerations may lead to the need to include additional requirements on weld quality outside of those referred to in this document. Economic factors are also important and are intended to include not only the cost of welding, but also of inspection, test and repair.

Although this document includes types of imperfection relevant to the beam welding processes given in the scope, only those which are applicable to the process and application in question need to be considered.

Imperfections are quoted in terms of their actual dimensions, and their detection and evaluation can require the use of one or more methods of non-destructive testing. The detection and sizing of imperfections are dependent on the inspection methods and the extent of testing specified in the application standard or contract.

The values given for imperfections are for welds produced using normal welding practice. More stringent requirements as stated in quality level B can include the need for additional manufacturing processes, e.g. grinding, dressing.