

SLOVENSKI STANDARD

SIST EN ISO 13919-2:2021

01-maj-2021

Nadomešča:

SIST EN ISO 13919-2:2002

SIST EN ISO 13919-2:2002/A1:2004

Zvarni spoji, zvarjeni z elektronskim snopom in/ali laserskim žarkom - Zahteve in priporočila za stopnje sprejemljivosti nepravilnosti - 2. del: Aluminij, magnezij in njune zlitine ter čisti baker (ISO 13919-2:2021)

Electron and laser-beam welded joints - Requirements and recommendations on quality levels for imperfections - Part 2: Aluminium, magnesium and their alloys and pure copper (ISO 13919-2:2021)

[\(standards.iteh.ai\)](https://standards.iteh.ai/)

Elektronen- und Laserstrahl-Schweißverbindungen - Anforderungen und Empfehlungen für Bewertungsgruppen für Unregelmäßigkeiten - Teil 2: Aluminium, Magnesium und ihre Legierungen und reines Kupfer (ISO 13919-2:2021)

Assemblages soudés par faisceau d'électrons et par faisceau laser - Exigences et recommandations sur les niveaux de qualité des défauts - Partie 2: Aluminium, magnésium et leurs alliages et cuivre pur (ISO 13919-2:2021)

Ta slovenski standard je istoveten z: EN ISO 13919-2:2021

ICS:

25.160.40	Varjeni spoji in vari	Welded joints and welds
77.120.01	Neželezne kovine na splošno	Non-ferrous metals in general

SIST EN ISO 13919-2:2021

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 13919-2:2021](#)

<https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021>

EUROPEAN STANDARD

EN ISO 13919-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2021

ICS 25.160.40

Supersedes EN ISO 13919-2:2001

English Version

Electron and laser-beam welded joints - Requirements and recommendations on quality levels for imperfections - Part 2: Aluminium, magnesium and their alloys and pure copper (ISO 13919-2:2021)

Assemblages soudés par faisceau d'électrons et par faisceau laser - Exigences et recommandations sur les niveaux de qualité des défauts - Partie 2: Aluminium, magnésium et leurs alliages et cuivre pur (ISO 13919-2:2021)

Elektronen- und Laserstrahl-Schweißverbindungen - Anforderungen und Empfehlungen für Bewertungsgruppen für Unregelmäßigkeiten - Teil 2: Aluminium, Magnesium und ihre Legierungen und reines Kupfer (ISO 13919-2:2021)

This European Standard was approved by CEN on 9 February 2021.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 13919-2:2021
<https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021>

European foreword

This document (EN ISO 13919-2:2021) 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 August 2021, and conflicting national standards shall be withdrawn at the latest by August 2021.

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 13919-2:2001.

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.

iTeh STANDARD PREVIEW
Endorsement notice
(standards.iteh.ai)

The text of ISO 13919-2:2021 has been approved by CEN as EN ISO 13919-2:2021 without any modification.

<https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 13919-2:2021](#)

<https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021>

INTERNATIONAL
STANDARDISO
13919-2Second edition
2021-01

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

Part 2:

**Aluminium, magnesium and their
alloys and pure copper**
*iTeh STANDARD PREVIEW
(standards.iteh.ai)**Assemblages soudés par faisceau d'électrons et par faisceau laser —
Exigences et recommandations sur les niveaux de qualité des
défauts —*<https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021>*Partie 2: Aluminium, magnésium et leurs alliages et cuivre pur*Reference number
ISO 13919-2:2021(E)

© ISO 2021

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 13919-2:2021](https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021)

<https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents		Page
Foreword		iv
Introduction		v
1 Scope		1
2 Normative references		1
3 Terms and definitions		2
4 Symbols and abbreviated terms		2
5 Evaluation of welds		2
Annex A (informative) Examples of determination of percentage (%) porosity		12
Annex B (informative) Additional information for the use of this document		14
Bibliography		15

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 13919-2:2021](https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021)

<https://standards.iteh.ai/catalog/standards/sist/c418b79f-30f4-4c12-a1b9-8dbb878b43c4/sist-en-iso-13919-2-2021>

ISO 13919-2:2021(E)

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 13919-2:2001), which has been technically revised.

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

- [Clause 2](#) has 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 ISO/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.

Some imperfections described in ISO 6520-1 have been used directly and some have been grouped together. The basic numerical referencing system from ISO 6520-1 has been used.

The purpose of this document is to define the dimensions of typical imperfections which can be expected in normal fabrication. It can be used within a quality system for the production of welded joints. It provides three sets of dimensional values from which a selection can be made for a particular application. The quality level necessary in each case is defined by the application standard or the responsible designer in conjunction with the manufacturer, user and/or other parties concerned. The quality level is expected to be prescribed prior to the start of production, preferably at the enquiry or order stage. For special purposes, additional details can be prescribed.

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 conditions (e.g. temperature, environment) and consequences of failure. 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.

This document does not address the methods used for the detection of imperfections.

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