SLOVENSKI STANDARD
SIST EN ISO 2553:2019

01-september-2019

Nadomešča:
SIST EN ISO 2553:2014

Varjenje in sorodni postopki - Prikazovanje s simboli na risbah - Varjeni spoji (ISO 2553:2019)

Welding and allied processes - Symbolic representation on drawings - Welded joints (ISO 2553:2019)

Schweißen und verwandte Prozesse - Symbolische Darstellung in Zeichnungen - Schweißverbindungen (ISO 2553:2019)

Soudage et techniques connexes - Représentations symboliques sur les dessins - Joints soudés (ISO 2553:2019)

Ta slovenski standard je istoveten z: **EN ISO 2553:2019**

ICS:

01.100.20	Konstrukcijske risbe	Mechanical engineering drawings
25.160.40	Varjeni spoji in vari	Welded joints and welds

SIST EN ISO 2553:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 2553

April 2019

ICS 01.100.20; 25.160.40

Supersedes EN ISO 2553:2013

English Version

Welding and allied processes - Symbolic representation on drawings - Welded joints (ISO 2553:2019)

Soudage et techniques connexes - Représentations symboliques sur les dessins - Assemblages soudés (ISO 2553:2019)

Schweißen und verwandte Prozesse - Symbolische Darstellung in Zeichnungen - Schweißverbindungen (ISO 2553:2019)

This European Standard was approved by CEN on 22 March 2019.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, 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

Ref. No. EN ISO 2553:2019 E

Contents

Page

European foreword

This document (EN ISO 2553:2019) 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 October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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 2553:2013.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 2553:2019 has been approved by CEN as EN ISO 2553:2019 without any modification.

INTERNATIONAL STANDARD

ISO 2553

Fifth edition
2019-03

Welding and allied processes — Symbolic representation on drawings — Welded joints

Soudage et techniques connexes — Représentations symboliques sur les dessins — Assemblages soudés

Reference number
ISO 2553:2019(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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 7, *Representation and terms*.

Any feedback, question or request for official interpretation related to any aspect of this document should be directed to the Secretariat of ISO/TC 44/SC 7 via your national standards body. A complete listing of these bodies can be found at www.iso.org/members.html. Official interpretations, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

This fifth edition cancels and replaces the fourth edition (ISO 2553:2013), which has been technically revised. The main changes compared to the previous edition are as follows:

— editorial corrections especially to align with other ISO/TC 44 standards and terminology;

— figures updated to more accurately reflect welds illustrated;

— plug welds in circular and elongated holes (slots) — clarification especially as it relates to slot welds;

— old Figure 5 is now shown as Table 5 for clarity;

— Clause 6 has been revised to reflect Pacific Rim practices.

Introduction

The symbols given in this document can be used on technical drawings for welded components. Design-related specifications, such as type, thickness, and length of weld, weld quality, surface treatment, filler material and testing specifications, can be indicated directly at the weld by means of the symbols. The principals of this document can be applied to brazed and soldered joints.

Clarity can be improved by references to collective information in the drawings or references to additional design-related documents.

Preparation for production can require detailed welding-related planning. The type of representation described in this document can be used for this purpose and complemented by additional production-related information (e.g. welding position, welding process, WPS, joint preparation, preheating). This information is often given in production-related documents, such as work schedules or welding procedure specifications (WPS).

Technical drawings are intended to clearly and understandably illustrate design-related specifications. Welding-related drawings are prepared and checked by specially trained personnel (see ISO 14731).

This document recognizes that there are two different approaches in the global market to designate the arrow side and other side on drawings, and allows for either to be used in isolation, to suit a particular market need. Application of either approach identifies a welding symbol in accordance with this document. The approach in accordance with system A is based on ISO 2553:1992[1)]. The approach in accordance with system B is based upon standards used by Pacific Rim countries.

1) Withdrawn.

Welding and allied processes — Symbolic representation on drawings — Welded joints

1 Scope

This document defines the rules to be applied for symbolic representation of welded joints on technical drawings. This can include information about the geometry, manufacture, quality and testing of the welds. The principles of this document can also be applied to soldered and brazed joints.

It is recognized that there are two different approaches in the global market to designate the arrow side and other side on drawings. In this document:

— clauses, tables and figures which carry the suffix letter "A" are applicable only to the symbolic representation system based on a dual reference line;

— clauses, tables and figures which carry the suffix letter "B" are applicable only to the symbolic representation system based on a single reference line;

— clauses, tables and figures which do not have the suffix letter "A" or "B" are applicable to both systems.

The symbols shown in this document can be combined with other symbols used on technical drawings, for example to show surface finish requirements.

An alternative designation method is presented which can be used to represent welded joints on drawings by specifying essential design information such as weld dimensions, quality level, etc. The joint preparation and welding process(es) are then determined by the production unit in order to meet the specified requirements.

NOTE Examples given in this document, including dimensions, are illustrative only and are intended to demonstrate the proper application of principles.

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 128 (all parts), *Technical drawings — General principles of presentation*

ISO 129-1, *Technical product documentation (TPD) — Presentation of dimensions and tolerances — Part 1: General principles*

ISO 3098-2, *Technical product documentation — Lettering — Part 2: Latin alphabet, numerals and marks*

ISO 4063, *Welding and allied processes — Nomenclature of processes and reference numbers*

ISO/TR 25901 (all parts), *Welding and related processes — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 25901 (all parts) and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
welding symbol
symbol consisting of an *arrow line* (3.3)and a *reference line* (3.4) and which can also include *elementary symbols* (3.8) and *supplementary symbols* (3.9), dimensions and/or tail, used on technical drawings

Note 1 to entry: See Clause 4.

3.2
basic welding symbol
symbol consisting of an *arrow line* (3.3), *reference line* (3.4) and tail used when the joint is not specified and only to indicate that a welded joint is to be made

Note 1 to entry: See 4.2.

3.3
arrow line
leader line used to indicate that the joint is to be welded generally drawn at 135° to the *reference line* (3.4)

Note 1 to entry: See 4.6.

3.4
reference line
part of the *welding symbol* (3.1) on which the *elementary symbol* (3.8) is located, generally drawn parallel to the bottom edge of the drawing

Note 1 to entry: See 4.7.

3.5
tail
V-shaped element added to the end of the continuous *reference line* (3.4) away from the *arrow line* (3.3)

Note 1 to entry: See 4.8.

3.6
arrow side
side of the joint to which the *arrow line* (3.3) is pointing

Note 1 to entry: See 4.7.2.1.

3.7
other side
opposite side of the joint to the *arrow side* (3.6)

Note 1 to entry: See 4.7.2.1.

3.8
elementary symbol
symbol forming part of the *welding symbol* (3.1) and drawn on the *reference line* (3.4) to indicate the type of weld and joint preparation

Note 1 to entry: See 4.4.

3.9
supplementary symbol
symbol used in conjunction with *elementary symbols* (3.8) to convey additional information about the joint

Note 1 to entry: See 4.5.

3.10
complementary information
non-symbolic information, relevant to the welds being made, which may be included in the *tail* (3.5) of the *welding symbol* (3.1)

Note 1 to entry: See 4.8.

3.11
intermittent weld
series of weld elements made at intervals along a joint

[SOURCE: ISO/TR 25901-1:2016, 2.1.6.15]

Note 1 to entry: See 5.3.2.

3.11.1
chain intermittent weld
intermittent weld (3.11) on each side of a joint arranged so that the weld elements lie opposite one another along the joint

Note 1 to entry: These are usually fillet welds in T-joints and lap joints.

Note 2 to entry: See 5.3.2.2.

[SOURCE: ISO/TR 25901-1:2016, 2.1.6.17, modified — Note 2 to entry has been adapted.]

3.11.2
staggered intermittent weld
intermittent weld (3.11) on each side of a joint arranged so that the weld elements on one side lie opposite the spaces on the *other side* (3.7) along the joint

Note 1 to entry: These are usually fillet welds in T-joints and lap joints.

Note 2 to entry: See 5.3.2.3.

[SOURCE: ISO/TR 25901-1:2016, 2.1.6.16, modified — Note 2 to entry has been adapted.]

3.12
offset
distance between the start of welding on one side of a *staggered intermittent weld* (3.11.2) and the start of welding on the *other side* (3.7)

Note 1 to entry: See 5.3.2.3, C.2.3, Table C.1, No. 3, C.3.3 and Table C.2, No. 3.

3.13
back run
DEPRECATED: sealing run
final run deposited on the root side of a fusion weld

[SOURCE: ISO/TR 25901-1:2016, 2.1.8.21]

3.14
backing weld
backing in the form of a weld

3.15
nominal weld length
design length of a weld

Note 1 to entry: Nominal weld length is the length where the weld has its full size.