

**KEEVITUS JA KÜLGNEVAD PROTSESSID. KEEVISLIIDETE  
TÄHISTAMINE TINGMÄRKIDEGA JOONISTEL**

**Welding and allied processes - Symbolic representation  
on drawings - Welded joints (ISO 2553:2013)**

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

See Eesti standard EVS-EN ISO 2553:2014 sisaldab Euroopa standardi EN ISO 2553:2013 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 2553:2014 consists of the English text of the European standard EN ISO 2553:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.12.2013.	Date of Availability of the European standard is 18.12.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 01.100.20, 25.160.40

**Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele**

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Aru 10, 10317 Tallinn, Eesti; koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

**The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation**

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

**Welding and allied processes - Symbolic representation on  
drawings - Welded joints (ISO 2553:2013)**

Soudage et techniques connexes - Représentations  
symboliques sur les dessins - Joints soudés (ISO  
2553:2013)

Schweißen und verwandte Prozesse - Symbolische  
Darstellung in Zeichnungen - Schweiß- und  
Lötverbindungen (ISO 2553:2013)

This European Standard was approved by CEN on 20 December 2013.

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, 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: Avenue Marnix 17, B-1000 Brussels**

## Foreword

This document (EN ISO 2553:2013) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding", 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 June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 22553:1994.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 2553:2013 has been approved by CEN as EN ISO 2553:2013 without any modification.

# Contents

Page

<b>Foreword</b>	<b>iv</b>
<b>Introduction</b>	<b>v</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 Terms and definitions</b>	<b>1</b>
<b>4 Welding symbol</b>	<b>4</b>
4.1 General	4
4.2 Basic welding symbol	4
4.3 Welding symbol systems	5
4.4 Elementary symbols	5
4.5 Supplementary symbols	9
4.6 Arrow line	14
4.7 Reference line and weld location	16
4.8 Tail	19
<b>5 Dimensioning of welds</b>	<b>19</b>
5.1 General	19
5.2 Cross-sectional dimensions	19
5.3 Length dimensions	19
5.4 Butt welds	20
5.5 Fillet welds	21
5.6 Plug welds in circular holes	21
5.7 Plug welds in slots	21
5.8 Spot welds	22
5.9 Seam welds	22
5.10 Edge welds	22
5.11 Stud welds	22
5.12 Overlay welds	22
<b>6 Dimensioning of joint preparations</b>	<b>34</b>
6.1 General	34
6.2 Root gap	34
6.3 Included angle	34
6.4 Radii and root faces — U and J butt joints	35
6.5 Depth of joint preparation	35
6.6 Countersink angle for plug and slot welds	37
<b>7 Alternative butt weld symbol with required weld quality</b>	<b>38</b>
7.1 General	38
7.2 Example	38
<b>Annex A (informative) Examples of the use of welding symbols</b>	<b>39</b>
<b>Annex B (informative) Tolerances and transition points for weld types<sup>[9]</sup></b>	<b>50</b>
<b>Annex C (informative) Alternative methods for designating intermittent butt and fillet welds</b>	<b>51</b>
<b>Bibliography</b>	<b>54</b>

## Introduction

The symbols given in this standard 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 given in this standard. The principals of this standard can be applied to brazed and soldered joints.

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

Preparation for production may require detailed welding-related planning. The type of representation described in this standard can be used for this purpose and complemented by additional production-related information (e.g. welding position, welding process, WPS, weld 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 should be prepared and checked by specially trained personnel (see ISO 14731).

This edition of ISO 2553 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 International Standard. The approach in accordance with system A is based on ISO 2553:1992. The approach in accordance with system B is based upon standards used by Pacific Rim countries.

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

## 1 Scope

This International Standard defines the rules to be applied for symbolic representation of welded joints on technical drawings. This may include information about the geometry, manufacture, quality and testing of the welds. The principles of this standard may 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 International Standard:

- 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 International Standard may be combined with other symbols used on technical drawings, for example to show surface finish requirements.

An alternative designation method is presented which may 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 International Standard, including dimensions, are illustrative only and are intended to demonstrate the proper application of principles. They are not intended to represent good design practices, or to replace code or specification requirements.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 drawings — Indication of dimensions and tolerances — Part 1: General principles*

ISO 1302, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

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 25901:2007, *Welding and related processes — Vocabulary*

## 3 Terms and definitions

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