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Welding - Friction welding of metallic materials (ISO 15620:2019)

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. 09/19

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English Version

**Welding - Friction welding of metallic materials (ISO  
15620:2019)**Soudage - Soudage par friction des matériaux  
métalliques (ISO 15620:2019)Schweißen - Reibschweißen von metallischen  
Werkstoffen (ISO 15620:2019)

This European Standard was approved by CEN on 30 May 2019.

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EUROPÄISCHES KOMITEE FÜR NORMUNG**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN ISO 15620:2019 (E)**

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## **European foreword**

This document (EN ISO 15620:2019) 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of an identical text or by endorsement, at the latest by December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.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 15620:2000.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZA, which is an integral part of this document.

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 15620:2019 has been approved by CEN as EN ISO 15620:2019 without any modification.

## Annex ZA (informative)

### Relationship between this European Standard and the essential requirements of EU Directive 2014/68/EU (PED) aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/071 "Mandate to CEN for standardization in the field of pressure equipment" to provide one voluntary means of conforming to essential requirements of Directive 2014/68/EU (PED) on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Annex I of the Directive 2014/68/EU (PED)**

Essential Requirements of Directive 2014/68/EU (PED)	Clauses of this EN	Remarks/Notes
Annex I, 3.1	Clause 4	Welding procedures
Annex I, 3.1.1	Sub-clauses 5.1, 5.2, 5.4	Welding components quality and preparation
Annex I, 3.1.4	Sub-clause 5.3	Heat treatment
Annex I, 3.1.2 – paragraphs 1,2,3	Clauses 6, 7, 8	Welding procedure specification and approval, welding personnel

**WARNING 1** — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

**WARNING 2** — Other Union legislation may be applicable to the product(s) and services falling within the scope of this standard.

**INTERNATIONAL  
STANDARD**

**ISO  
15620**

Second edition  
2019-05

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**Welding — Friction welding of  
metallic materials**

*Soudage — Soudage par friction des matériaux métalliques*



Reference number  
ISO 15620:2019(E)

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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](http://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](http://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](http://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*.

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 10 via your national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://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 second edition cancels and replaces the first edition (ISO 15620:2000), which has been technically revised.

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

- Clause 2 has been updated;
- in Clause 3, terms not used in the text have been deleted;
- in [Annex B](#) of 4 processes based on friction have been added;
- the recommended test to perform on test weld has been clarified (addition of [Table 4](#)).

**ISO 15620:2019(E)****Introduction**

Friction welding is a method for making welds in the solid phase in which one component is moved relative to and in pressure contact with the mating component to produce heat at the faying surfaces, the weld being completed by the application of a force during or after the cessation of relative motion. There are several forms of supplying energy and various forms of relative movements.

The generation of friction heating results in a comparatively low joining temperature at the interface. This is largely the reason why friction welding is suitable for materials and material combinations which are otherwise difficult to weld. The weld region is generally narrow and normally has a refined microstructure.

While the friction welding process deals primarily with components of circular cross-section it does not preclude the joining of other component shapes.

# **Welding — Friction welding of metallic materials**

## **1 Scope**

This document specifies requirements for the friction welding of components manufactured from metals.

It specifies requirements particular to rotational friction welding related to welding knowledge, quality requirements, welding procedure specification, welding procedure approval and welding personnel.

This document is appropriate where a contract, an application standard or a regulatory requirement requires the demonstration of the manufacturer's capability to produce welded constructions of a specified quality. It has been prepared in a comprehensive manner to be used as a reference in contracts. The requirements given can be adopted in full or some can be deleted, if not relevant to the construction concerned.

## **2 Normative references**

There are no normative references in this document.

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**