BS EN ISO 9606-1:2017

BSI Standards Publication

Qualification testing of welders — Fusion welding

Part 1: Steels

National foreword

This British Standard is the UK implementation of EN ISO 9606-1:2017. It is identical to ISO 9606-1:2012, incorporating corrigendum September 2012. It supersedes BS EN ISO 9606-1:2013, which is withdrawn.

Please note that ISO corrigendum 2:2013 only affects the French edition and has therefore not been incorporated in this version.

During the development of this standard a new option (option c) was introduced to clause 9.3 to revalidate a welder's qualification. It is the opinion of the UK committee that options a) and b) are the preferred methods for the periodic verification of a welder's ability/skill to reproduce and meet the acceptance levels of the original test conditions.

Attention is drawn to clause 9.3 and which option/s may or may not be relevant or allowed in application standards or specific contract requirements. For the relationship with EU directives 2014/68/EU (PED) and 2014/29/EU (SPVD), see informative Annex ZA and ZB, respectively.

The UK participation in its preparation was entrusted to Technical Committee WEE/36, Qualification of welding personnel and welding procedures.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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English Version

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Prüfung von Schweißern - Schmelzschweißen - Teil 1: Stähle (ISO 9606-1:2012, einschließlich Cor 1:2012 und Cor 2:2013)

This European Standard was approved by CEN on 16 July 2017.

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Ref. No. EN ISO 9606-1:2017 E

European foreword

The text of ISO 9606-1:2012 including Cor 1:2012 and Cor 2:2013 has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 9606-1:2017 by 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 February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

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 9606-1:2013.

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 Directives 2014/68/EU and 2014/29/EU.

For relationship with EU Directives, see informative Annex ZA and ZB, 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, 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 9606-1:2012 including Cor.1:2012 and Cor 2:2013 has been approved by CEN as EN ISO 9606-1:2017 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of EU Directive 2014/68/EU [2014 OJ L 189] (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 [2014 OJ L 189].

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 Directive 2014/68/EU (PED) [2014 OJ L 189]

Essential Requirements of Directive 2014/68/EU (PED)	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex I, 3.1.2	Clauses 5, 6.2 to 6.6, 7, 8, 10, 11	Qualification testing
	Clauses 6.1, 9.1, 9.3 a), 9.3 b)	For pressure equipment in categories II, III and IV the examiner/examining body (according to 3.3 and 3.4) is a competent third party – a notified body or a recognized third party organization.
	Clause 9.3 c)	Not permitted for categories II, III and IV products.

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.

Annex ZB
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2014/29/EU (SPVD) [2014 OJ L96]

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 2014/29/EU (SPVD) on the harmonisation of the laws of the Member States relating to the making available on the market of simple pressure vessels [2014 OJ L96].

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 ZB.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 ZB.1 — Correspondence between this European Standard and Directive 2014/29/EU (SPVD) [2014 OJ L96]

Essential Requirements of Directive 2014/29/EU (SPVD)	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex I, 3.2	Clauses 5, 6, 7, 8, 9.1, 9.3 a), 9.3 b), 10, 11	For welds on pressurised parts of simple pressure vessels the examiner/examining body (according to 3.3 and 3.4) is a notified body.

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.

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 9606-1 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 11, *Qualification requirements for welding and allied processes personnel*.

This second edition cancels and replaces the first edition (ISO 9606-1:1994), which has been technically revised. It also incorporates the Amendment ISO 9606-1:1994/Amd.1:1998.

ISO 9606 consists of the following parts, under the general title *Qualification testing of welders — Fusion welding*:

— *Part 1: Steels*

— *Part 2: Aluminium and aluminium alloys*

— *Part 3: Copper and copper alloys*

— *Part 4: Nickel and nickel alloys*

— *Part 5: Titanium and titanium alloys, zirconium and zirconium alloys*

Requests for official interpretations of any aspect of this part of ISO 9606 should be directed to the Secretariat of ISO/TC 44/SC 11 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

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Introduction

The ability of a welder to follow verbal or written instructions and verification of a person's skills are important factors in ensuring the quality of the welded product.

The testing of a welder's skill in accordance with this International Standard depends on the welding techniques and conditions used, in which uniform rules are complied with and standard test pieces are used.

The principle of this International Standard is that a qualification test qualifies a welder not only for the conditions used in the test, but also for all other conditions which are considered easier to weld in accordance with this International Standard. It is presumed that the welder has received training and/or has industrial practice within the range of qualification.

The qualification test can be used to qualify a welding procedure and a welder provided that all the relevant requirements, e.g. test piece dimensions and testing requirements are satisfied (see ISO 15614-1[11]).

All new qualifications shall be in accordance with each part of this International Standard from its date of issue.

At the end of its period of validity, existing qualification tests of welders in accordance with the requirement of a national standard may be revalidated according to this International Standard. This is providing that the technical intent of this International Standard is satisfied. It is necessary for the new range of qualification to be interpreted in accordance with the requirements of this International Standard.

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INTERNATIONAL STANDARD **ISO 9606-1:2012(E)**

Qualification testing of welders — Fusion welding —

Part 1:
Steels

1 Scope

This part of ISO 9606 specifies the requirements for qualification testing of welders for fusion welding of steels.

It provides a set of technical rules for a systematic qualification test of the welder, and enables such qualifications to be uniformly accepted independently of the type of product, location and examiner or examining body.

When qualifying welders, the emphasis is placed on the welder's ability manually to manipulate the electrode, welding torch or welding blowpipe, thereby producing a weld of acceptable quality.

The welding processes referred to in this part of ISO 9606 include those fusion-welding processes which are designated as manual or partly mechanized welding. It does not cover fully mechanized and automated welding processes.

NOTE For such processes, see ISO 14732[10].

2 Normative references

The following referenced documents are indispensable for the application 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 857-1, *Welding and allied processes — Vocabulary — Part 1: Metal welding processes*

ISO 3834-2, *Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements*

ISO 3834-3, *Quality requirements for fusion welding of metallic materials — Part 3: Standard quality requirements*

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

ISO 5173, *Destructive tests on welds in metallic materials — Bend tests*

ISO 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections*

ISO 6947, *Welding and allied processes — Welding positions*

ISO 9017, *Destructive tests on welds in metallic materials — Fracture test*

ISO/TR 15608, *Welding — Guidelines for a metallic material grouping system*

ISO 15609-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding*

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