



**International
Standard**

ISO 15613

**Specification and qualification of
welding procedures for metallic
materials — Qualification based on
a pre-production welding test**

*Descriptif et qualification d'un mode opératoire de soudage
pour les matériaux métalliques — Qualification sur la base d'un
assemblage soudé de préproduction*

**Second edition
2025-08**

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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 document 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).

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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 and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 15613:2004), which has been technically revised.

The main changes are as follows:

- the normative references have been updated and extensively revised;
- all parts of the document related to the changes in normative references have been updated accordingly;
- Tables have been added to [Clause 4](#) and [5](#) to give the relevant standards for each welding process;
- [Clause 5](#) has been revised to clarify the intent;
- the text of [Clause 7](#) has been revised and refers to the standards in [Table 2](#). All testing information has been deleted to avoid conflict with the relevant parts of the ISO 15614 series;
- the title of [7.2.1](#) has been updated to reflect the title of ISO 15614-12;
- [Clauses 8](#) and [10](#) have been revised.

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

One of the methods for welding procedure qualification is based on a pre-production welding test as given in ISO 15607.

Qualification based on a pre-production welding test can be used where the shape and dimensions of the standard test pieces do not adequately represent the joint to be welded.

In such cases, one or more special test pieces can be made to simulate the production joint in all essential features, for example dimensions, restraint, heat sink effects and limited access.

This document is one of a number of standards dealing with specification and qualification of welding procedures. Details are given in ISO 15607.

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Specification and qualification of welding procedures for metallic materials — Qualification based on a pre-production welding test

1 Scope

This document specifies how a preliminary welding procedure specification is qualified based on a pre-production welding test.

This document is applicable to arc welding, gas welding, beam welding, resistance welding, stud welding and friction welding of metallic materials.

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 15607, *Specification and qualification of welding procedures for metallic materials — General rules*

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

ISO 15609-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 2: Gas welding*

ISO 15609-3, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 3: Electron beam welding*

ISO 15609-4, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 4: Laser beam welding*

ISO 15609-5, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 5: Resistance welding*

ISO 15609-6, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 6: Laser-arc hybrid welding*

ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*

ISO 15614-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 2: Arc welding of aluminium and its alloys*

ISO 15614-3, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 3: Fusion welding of non-alloyed and low-alloyed cast irons*

ISO 15614-5, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 5: Arc welding of titanium, zirconium and their alloys*

ISO 15614-6, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 6: Arc and gas welding of copper and its alloys*

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ISO 15614-8, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 8: Welding of tubes to tube-plate joints*

ISO 15614-10, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 10: Hyperbaric dry welding*

ISO 15614-11, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 11: Electron and laser beam welding*

ISO 15614-12, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 12: Spot, seam and projection welding*

ISO 15614-13, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 13: Upset (resistance butt) and flash welding*

ISO 15614-14, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 14: Laser-arc hybrid welding of steels, nickel and nickel alloys*

ISO 25901 (all parts), *Welding and allied processes — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15607 and the ISO 25901 series apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Preliminary welding procedure specification (pWPS)

A preliminary welding procedure specification shall be prepared in accordance with the appropriate standard given in [Table 1](#):

Table 1 — Welding procedure specification standards

ISO standard	Welding process
ISO 15609-1	Arc welding
ISO 15609-2	Gas welding
ISO 15609-3	Electron beam welding
ISO 15609-4	Laser beam welding
ISO 15609-5	Resistance welding
ISO 15609-6	Laser-arc hybrid welding

5 Qualification of the welding procedure

Qualification of the welding procedure shall be carried out by an examiner or examining body in accordance with the relevant standard given in [Table 2](#).