



**International
Standard**

ISO 15611

**Specification and qualification of
welding procedures for metallic
materials — Qualification based on
previous welding experience**

*Descriptif et qualification d'un mode opératoire de soudage
pour les matériaux métalliques — Qualification sur la base de
l'expérience en soudage*

**Second edition
2024-01**

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Foreword

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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).

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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 15611:2003), which has been technically revised.

The main changes are as follows:

- normative references have been updated;
- [Clause 5](#) and [Clause 7](#) have been revised;
- [Clause 8](#) has been deleted;
- the bibliography has been deleted.

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

In ISO 15607, one of the methods of welding procedure qualification is by relating to previous welding experience. Many manufacturers have considerable experience in fabricating welded structures. Welded components and structures may have been supplied to end users/clients for a variety of applications and have performed satisfactorily over a period of time in service. If this experience is traceable and documented, this document provides a route to welding procedure qualification based on this experience.

This document is a part of a series of standards, details of this series are given in ISO 15607:2019, Annex A.

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Specification and qualification of welding procedures for metallic materials — Qualification based on previous welding experience

1 Scope

This document gives the necessary information to explain the requirements referenced in ISO 15607 about the qualification of welding procedures based on previous welding experience.

In addition, it gives the range of qualification.

The use of this document can be restricted by an application standard or a specification.

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 14555, *Welding — Arc stud welding of metallic materials*

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

ISO 15609 (all parts), *Specification and qualification of welding procedures for metallic materials — Welding procedure specification*

ISO 15614 (all parts), *Specification and qualification of welding procedures for metallic materials — Welding procedure test*

ISO 15620, *Welding — Friction welding of metallic materials*

ISO 18785-4, *Friction stir spot welding — Aluminium — Part 4: Specification and qualification of welding procedures*

ISO 25239-4, *Friction stir welding — Aluminium — Part 4: Specification and qualification of welding procedures*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15607 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 specifications (pWPS)

The qualification of a welding procedure related to previous welding experience shall be based on a pWPS according to ISO 14555, the relevant part of the ISO 15609 series, ISO 15620, ISO 18785-4 or ISO 25239-4. This pWPS shall specify the range for all the relevant parameters.

5 Qualification of the welding procedure

For the qualification of the welding procedure, the following items shall be considered:

- pWPS according to ISO 14555;
- pWPS according to the relevant part of the ISO 15609 series;
- pWPS according to ISO 15620;
- pWPS according to ISO 18785-4;
- pWPS according to ISO 25239-4;
- documentation of the existing previous welding experience (see [Clause 6](#)).

6 Existing previous welding experience

Previous welding experience shall be demonstrated by documented examination and/or test data and either a summary of welding manufacturing or satisfactory service performance.

This shall involve satisfactory documentation covering the essential properties of the product of weld tests (e.g. non-destructive, destructive, leak or pressure tests) in all cases; and either

- a) a summary of welding manufacturing of at least one year during an appropriate period; or
- b) suitability of welds in service for an appropriate period.

A period of five years is considered as an appropriate period unless otherwise specified.

7 Range of qualification

The range of qualification given to a welding procedure qualified in accordance with this document shall be as given:

- in the relevant part of the ISO 15614 series for fusion welding;
- in ISO 14555 for arc stud welding of metallic materials;
- in ISO 15620 for friction welding of metallic materials;
- in ISO 25239-4 for friction stir welding of aluminium;
- in ISO 18785-4 for friction stir spot welding of aluminium.

8 Welding procedure qualification record (WPQR)

- a) The WPQR shall consist of documentation of existing previous welding experience (see [Clause 6](#)).
- b) The relevant items listed for the WPS in ISO 14555, in the relevant part of the ISO 15609 series, or in ISO 15620 shall be included.
- c) The WPQR shall be signed and dated by the examiner or examining body.