
**Specification and qualification of welding
procedures for metallic materials —
Qualification by adoption of a standard
welding procedure**

*Descriptif et qualification d'un mode opératoire de soudage pour les
matériaux métalliques — Qualification par référence à un mode
opératoire de soudage standard*

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Foreword

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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 15612 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Unification of requirements in the field of metal welding*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition of ISO 15612 cancels and replaces ISO 9956-7:1995, of which it constitutes a technical revision.

Throughout the text of this document, read "...this European Standard..." to mean "...this International Standard...".

Annex ZA provides a list of corresponding International and European Standards for which equivalents are not given in the text.

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Foreword

This document (EN ISO 15612:2004) has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

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of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

This document supersedes EN 288-7:1995.

Normative references to International Standards are listed in annex ZA.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Introduction

In EN ISO 15607, one of the methods of welding procedure qualification is by adoption of a standard welding procedure.

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1 Scope

This standard gives the necessary information to explain the requirements referenced in EN ISO 15607 about the qualification by adoption of a standard welding procedure, and establishes the conditions, limits and ranges of qualification necessary for the use of a standard welding procedure.

This standard gives the manufacturer the possibility to use welding procedures based on welding procedure tests performed by other organisations.

This standard is a part of a series of standards, details of this series are given in EN ISO 15607:2003, annex A.

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

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.

EN 287-1, *Qualification test of welders - Fusion welding - Part 1: Steels.*

EN 287-2, *Approval testing of welders — Fusion welding — Part 2 : Aluminium and aluminium alloys.*

EN 719, *Welding coordination — Tasks and responsibilities.*

EN 729-1, *Quality requirements for welding — Fusion welding of metallic materials — Part 1: Guidelines for selection and use.*

EN 729-2, *Quality requirements for welding — Fusion welding of metallic materials — Part 2: Comprehensive quality requirements.*

EN 729-3, *Quality requirements for welding — Fusion welding of metallic materials — Part 3: Standard quality requirements.*

EN 729-4, *Quality requirements for welding — Fusion welding of metallic materials — Part 4: Elementary quality requirements.*

EN 1418, *Welding personnel — Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials.*

EN ISO 9606-3, *Approval testing of welders — Fusion welding — Part 3: Copper and copper alloys (ISO 9606-3:1999)*

EN ISO 9606-4, *Approval testing of welders — Fusion welding — Part 4: Nickel and nickel alloys. (ISO 9606-4:1999)*

EN ISO 9606-5, *Approval testing of welders — Fusion welding — Part 5: Titanium and titanium alloys, zirconium and zirconium alloys (ISO 9606-5:2000)*

EN ISO 15607:2003, *Specification and qualification of welding procedures for metallic materials — General rules. (ISO 15607:2003)*

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EN ISO 15609-1, *Specification and approval of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding. (ISO 15609-1:2004)*

EN ISO 15609-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 2: Gas welding. (ISO 15609-2:2001)*

EN ISO 15609-3, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 3: Electron beam welding. (ISO 15609-3:2004)*

EN ISO 15609-4, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 4: Laser beam welding. (ISO 15609-4:2004)*

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

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN ISO 15607:2003 apply.

4 Preliminary welding procedure specification (pWPS)

The qualification by adoption of a standard welding procedure shall be based on a pWPS according to the appropriate part of EN ISO 15609. This pWPS shall specify the range for all the relevant parameters.

5 Qualification by adoption of the standard welding procedure

5.1 General

The qualification of the welding procedure shall be carried out by an examiner or an examiner body according to EN ISO 15607. It shall be verified that examination and testing have been carried out in accordance with the appropriate part of EN ISO 15614.

After qualification, the preliminary welding procedure specification will be considered as a standard welding procedure specification.

Changes outside the range of qualification given in the appropriate part of EN ISO 15614 as modified in 5.2 shall require a new qualification welding procedure.

The welding procedure shall be qualified by the manufacturer and if applicable, verified by an examiner or examining body in accordance with EN ISO 15607.

5.2 Parent metal

This standard is applicable for parent material groups defined in Table 1.

Table 1 — Applicable parent material groups

Parent material groups used for the qualification of the welding procedure	Range of qualification
1-1	1-1
1- 11	1 - 1 1 - 11 11 – 11
8 ^a	8–8
21	21 –21
22.1 - 22.2	22.1 - 22.1 22.2 - 22.2 22.1 - 22.2
31 through 38 ^a	each group welded with compatible filler material
41 through 47 ^a	each group welded with compatible filler material
^a excluding those alloys which are extremely sensitive to hot cracking.	

6 Use of a standard welding procedure

6.1 General

A standard welding procedure prepared and documented in accordance with clause 8 can be used without further tests providing the following requirements and limitations are observed.

6.2 Related to the user of a standard welding procedure

The user of a standard welding procedure is responsible for the appropriate selection and application of the standard welding procedure.

The use of a standard welding procedure requires welding coordination in accordance with EN 719 and that the user fulfils quality requirements in accordance with the appropriate part of EN 729.

6.3 Related to the welding equipment

The standard welding procedure is qualified for use in production with welding power sources and welding equipment having electrical and mechanical characteristics which are capable of achieving those used in preparing the test weld for qualification of the standard welding procedure as specified in the welding procedure specification WPS.

The equipment used during production shall permit control of all essential welding parameters.

6.4 Related to the personnel

A standard welding procedure shall only be used by welders or welding operators for mechanized equipment qualified in accordance with the relevant part of EN 287 or EN ISO 9606 or EN 1418.

7 Validity

A standard welding procedure remains valid until it is withdrawn or revised.

8 Preparation and documentation

The standard welding procedure shall be issued as a specification covering ranges for all relevant parameters. Any restrictions, e.g. equipment performance or environmental conditions, shall be stated, as appropriate. The specification shall be in the format of a welding procedure qualification record WPQR according to the relevant part of prEN ISO 15614.

The new WPS shall be signed and dated by the manufacturer and, if applicable, verified by an examiner or examining body. Any amendments or revisions shall be re-qualified. All records on which the qualification is based shall be traceable to the original source during the entire period of its use.

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Annex ZA (normative)

Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 9606-1		Approval testing of welders — Fusion welding — Part 1: Steels	EN 287-1	
ISO 14731		Welding coordination — Tasks and responsibilities	EN 719	
ISO 3834-1		Quality requirements for welding - Fusion welding of metallic materials — Part 1: Guidelines for selection and use	EN 729-1	
ISO 3834-2		Quality requirements for welding - Fusion welding of metallic materials — Part 2: Comprehensive quality requirements	EN 729-2	
ISO 3834-3		Quality requirements for welding - Fusion welding of metallic materials — Part 3: Standards quality requirements	EN 729-3	
ISO 3834-4		Quality requirements for welding - Fusion welding of metallic materials — Part 4: Elementary quality requirements	EN 729-4	
ISO 14732		Welding personnel — Approval testing of welding operators for fusion welding and of resistance weld setters for fully mechanized and automatic welding of metallic materials	EN 1418	