SLOVENSKI STANDARD
oSIST prEN ISO 15607:2018

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Specifikacija in kvalifikacija varilnih postopkov za kovinske materiale - Splošna pravila (ISO/DIS 15607:2018)

Specification and qualification of welding procedures for metallic materials - General rules (ISO/DIS 15607:2018)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe - Allgemeine Regeln (ISO/DIS 15607:2018)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Règles générales (ISO/DIS 15607:2018)

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

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques — Règles générales

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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).

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).

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.

This document was prepared by Technical Committee Technical Committee ISO/TC 44, Welding and allied processes, Subcommittee SC 10, Quality management in the field of welding..

This second edition cancels and replaces the first edition (ISO 15607:2003), which has been technically revised.

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

— xxx xxxxxxx xxx xxxx TO BE COMPLETED ONLY AFTER DIS BALLOT

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. Official interpretations, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

Introduction

Welding procedure specifications (WPSs) are needed in order to provide a well defined basis for planning of the welding operations and for quality control during welding. Welding is considered a special process in the terminology of standards for quality systems. Standards for quality systems usually require that special processes be carried out in accordance with written procedure specifications.

Preparation of a welding procedure specification provides the necessary basis for, but does not in itself ensure that the welds fulfil the requirements. Some deviations, notably imperfections and distortions, can be evaluated by non-destructive methods on the finished product.

Metallurgical deviations constitute a special problem, however, because non-destructive evaluation of the mechanical properties is impossible at the present level of non-destructive technology, this has resulted in the establishment of a set of rules for qualification of the welding procedure prior to the release of the specification to actual production. This document defines these rules

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

1 Scope

This document is part of a series of standards dealing with specification and qualification of welding procedures. Annex A gives details of this series of standard, annex B gives a flowchart for the use of these standards and Annex C gives a flow diagram for the development and qualification of a WPS.

This document defines general rules for the specification and qualification of welding procedures for metallic materials. This standard also refers to several other standards as regards detailed rules for specific applications.

This document is applicable to manual, partly mechanized, fully mechanized and automatic welding.

Welding procedures are qualified by conforming to one or more welding procedure qualification records (WPQR). The use of a particular method of qualification is often a requirement of an application standard.

Qualification of pWPS by more than one method is not recommended. It is assumed that welding procedure specifications are used in production by competent welders, qualified in accordance with the relevant part of ISO 9606 or by competent operators qualified in accordance with ISO 14732.

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

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

ISO 15610, *Specification and qualification of welding procedures for metallic materials — Qualification based on tested welding consumables*

ISO 15611, *Specification and qualification of welding procedures for metallic materials — Qualification based on previous welding experience*

ISO 15612, *Specification and qualification of welding procedures for metallic materials — Qualification by adoption of a standard welding procedure specification*

ISO 15613, *Specification and qualification of welding procedures for metallic materials — Qualification based on pre-production welding test*

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/TR 25901-1, *Welding and allied processes — Vocabulary — Part 1: General terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 25901-1 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

Note 1 to entry to entry: ISO 6520-1 and ISO 6520-2 contain comprehensive lists of imperfections.

3.1
manufacturer
<welding> person or organization responsible for the welding production

4 Welding procedure specification format

ISO 15609 (all parts) provide the technical content that shall be included in welding procedure specifications for the following welding processes:

— arc welding;

— gas welding;

— electron beam welding;

— laser beam welding;

— laser-arc hybrid welding;

— resistance welding.

WPS for other welding processes and for special applications may be covered by specific standards, for example:

— for stud welding, see ISO 14555;

— for friction welding, see ISO 15620.

A WPS shall be classified as a pWPS until qualified using an appropriate method in accordance with clause 5.

5 Development and qualification of welding procedures

5.1 General

Qualification of welding procedures shall be performed prior to actual welding in production.

The manufacturer shall prepare a pWPS and shall ensure that it is applicable for the actual production, using experience from previous productions and the general fund of knowledge of welding technology.

Each pWPS shall be used as a basis for establishment of WPQR qualified according to one of the methods listed in Table 1.

If the qualification involves welding of test pieces, then the test pieces shall be welded in accordance with the pWPS.