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Popis in kvalifikacija varilnih postopkov za kovinske materiale - Popis varilnega postopka – 1. del: Obločno varjenje (ISO/DIS 15609-1:2018)

Specification and qualification of welding procedures for metallic materials - Welding procedure specification - Part 1: Arc welding (ISO/DIS 15609-1:2018)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe - Schweißanweisung - Teil 1: Lichtbogenschweißen (ISO/DIS 15609-1:2018)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Descriptif d'un mode opératoire de soudage - Partie 1: Soudage à l'arc (ISO/DIS 15609-1:2018)

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Specification and qualification of welding procedures for metallic materials — Welding procedure specification —

Part 1: Arc welding

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

Partie 1: Soudage à l'arc

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Contents

Page

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 on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee [or Project Committee] ISO/TC [or ISO/PC] ###, *[name of committee]*, Subcommittee SC ##, *[name of subcommittee]*.

This second/third/... edition cancels and replaces the first/second/... edition (ISO #####:####), which has been technically revised.

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

— xxx xxxxxxx xxx xxxx

A list of all parts in the ISO 15609- series can be found on the ISO website.

ISO 15609 consists of the following parts, under the general title *Specification and qualification of welding procedures for metallic material — Welding procedure specification*:

— *Part 1: Arc welding;*

— *Par 2: Gas welding;*

— *Par 3: Electron beam welding;*

— *Par 4: Laser beam welding;*

— *Par 5: Resistance welding;*

— *Par 6: Laser-arc hybrid welding.*

Introduction

All new welding procedure specifications require to be prepared in accordance with this standard from the date of its issue. However, this International Standard does not invalidate previous welding procedure specifications made to former national standards or specifications or previous issues of this standard.

Requests for official interpretations of technical aspects of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 10 via your national standards body; a listing of these bodies can be found at www.iso.org.

Specification and qualification of welding procedures for metallic materials — Welding procedure specification —

Part 1: Arc welding

1 Scope

This standard specifies requirements for the content of welding procedure specifications for arc welding processes.

This standard is part of a series of standards, details of this series are given in ISO 15607:2003, Annex A. The variables listed in this standard are those influencing the quality of the welded joint.

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

ISO 6848, *Arc welding and cutting — Nonconsumable tungsten electrodes — Classification*

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

ISO 13916, *Welding — Measurement of preheating temperature, interpass temperature and preheat maintenance temperature*

ISO 14175, *Welding consumables — Gases and gas mixtures for fusion welding and allied processes*

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

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

ISO/TR 18491, *Welding and allied processes — Guidelines for measurement of welding energies*

ISO/TR 20172, *Welding — Grouping systems for materials — European materials*

ISO/TR 20173, *Welding — Grouping systems for materials — American materials*

ISO/TR 20174, *Welding — Grouping systems for materials — Japanese materials*

ISO/TR 25901 (all parts), *Welding and related processes — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15607 and ISO/TR 25901 (all parts) apply.

No terms and definitions are listed in this document.

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

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

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

4 Technical content of welding procedure specification (WPS)

4.1 General

A preliminary Welding Procedure Specification/Welding Procedure Specification (pWPS/WPS) shall provide all the necessary information required to make a weld. The information required in a pWPS/WPS is given in 4.2 to 4.5.

NOTE For some applications it may be necessary to supplement or reduce the list.

Welding procedure specifications cover all certain range of necessary information to make a weld. Some manufacturers prefer additionally to prepare work instructions for each specific job as part of detailed production planning.

Ranges and tolerances, according to the relevant standard of the series (see ISO 15607:2003) and to the manufacturer's experience, shall be specified where appropriate.

An example of the WPS-format is shown in Annex A.

4.2 Related to the manufacturer

— Identification of the manufacturer.

— Identification of the WPS.

— Reference to the Welding Procedure Qualification Record (WPQR) or other documents as required (see ISO 15607:2003, Annex C).

4.3 Related to the parent material

4.3.1 Parent material type

— Designation of the material(s), and reference standard(s).

— Number(s) of the group(s) as given in ISO/TR 20172, ISO/TR 20173 or ISO/TR 2074. If the material is not assigned in those, ISO/TR 15608 shall be used. A WPS may cover a group of materials.

4.3.2 Material dimensions

— Thickness ranges of the materials.

— Outside diameter ranges for pipes.

4.4 Common to all welding procedures

4.4.1 Welding process

Welding process(es) used in accordance with ISO 4063.

4.4.2 Joint design

— A sketch of the joint design/configuration and dimensions or reference which provide such information.

— Weld run sequence given on the sketch if essential for the properties of the weld.

