

norm**NEN-EN-ISO 15614-1**

Het beschrijven en kwalificeren van lasprocedures voor metallische materialen - Lasmethodebeproeving - Deel 1: Booglassen en autogeëlassen van staal en booglassen van nikkel en nikkellegeringen

(ISO/DIS 15614-1:2000, IDT)

Specification and approval 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/DIS 15614-1:2000, IDT)

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Voorbeeld
Preview

April 2000

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Will supersede EN 288-3:1992

English version

Specification and approval 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/DIS 15614-1:2000)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Epreuve de qualification d'un mode opératoire de soudage - Partie 1: Soudage à l'arc et aux gaz des aciers et soudage à l'arc des nickels et alliages de nickel (ISO/DIS 15614-1:2000)

Anforderung und Anerkennung von Schweißverfahren für metallische Werkstoffe - Schweißverfahrensprüfung - Teil 1: Lichtbogen- und Gasschweißen von Stählen und Lichtbogenschweißen von Nickel und Nickellegierungen (ISO/DIS 15614-1:2000)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 121.

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Foreword

The text of prEN ISO 15614-1:2000 has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DS, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

This document is currently submitted to the parallel Enquiry.

This European Standard supersedes EN 288-3:1992.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

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Preview

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Introduction

All new welding procedure approvals are to be in accordance with this standard from the date of its issue.

However, this standard does not invalidate previous welding procedure approvals made to former national standards or specifications or previous issues of this specification providing the intent of the technical requirements is satisfied and the previous procedure approvals are relevant to the application and production work on which they are to be employed.

NOTE The intent of the technical requirements is satisfied when the same generic tests have been carried out and specified mechanical properties/joint integrity have been demonstrated, e.g. at least one tensile or bend test has been carried out when such tests are requirements of this standard.

Also, where additional tests have to be carried out to make the approval technically equivalent, it is only necessary to do the additional tests on a test piece which should be made in accordance with this standard.

Consideration of previous procedure approvals to former national standards or specifications should be at the time of the enquiry or contract stage and agreed between the contracting parties.

Preview

1 Scope

This standard specifies how a welding procedure specification is approved by welding procedure tests.

This standard is part of a series of standards. Annex B gives details of this series of standards.

It defines the conditions for the execution of welding procedure approval tests and the limits of validity of an approved welding procedure for all practical welding operations within the range of variables listed in clause 8.

Tests shall be carried out in accordance with this standard unless additional tests are specified by the relevant application standard or contract when these shall apply.

Arc and gas welding are covered by the following processes in accordance with prEN ISO 4063 :

- 111 - manual metal arc welding (metal-arc welding with covered electrode) ;
- 114 - self-shielded tubular-cored arc welding;
- 121 - submerged arc welding with one wire electrode ;
- 122 - submerged arc welding with strip electrode ;
- 131 - metal inert gas welding, MIG welding ;
- 135 - metal active gas welding, MAG welding ;
- 136 - tubular-cored metal arc welding with active gas shield ;
- 137 - tubular-cored metal arc welding with inert gas shield ;
- 141 - tungsten inert gas arc welding; TIG welding ;
- 15 - plasma arc welding.
- 311 - oxy-acetylene welding

This standard applies to the arc and gas welding of steels in all product forms and the arc welding of nickel and nickel alloys in all product forms. The principles of this standard may be applied to other fusion welding processes subject to agreement between the contracting parties.

2 Normative references

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.

EN 287-1, *Approval testing of welders – Fusion welding – Part 1 : Steels.*

EN 439, *Welding consumables – Shielding gases for arc welding and cutting.*

EN 571-1, *Non destructive testing – Penetrant testing – Part 1 : General principles.*

EN 875, *Destructive tests on welds in metallic materials – Impact tests – Test specimen location, notch orientation and examination.*

EN 895, *Destructive tests on welds in metallic materials – Transverse tensile test.*

EN 910, *Destructive tests on welds in metallic materials – Bend tests.*

EN 970, *Non destructive examination of welds – Visual examination.*

EN 1043-1, *Destructive tests on welds in metallic materials – Hardness testing – Part 1 : Hardness test on arc welded joints.*

EN 1290, *Non destructive examination of welds – Magnetic particle testing of welds.*

EN 1321, *Destructive tests on welds – Microscopic and macroscopic examination of welds.*

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

EN 1435, *Non destructive examination of welds – Radiographic examination of welded joints.*

EN 1714, *Non destructive examination of welds – Ultrasonic examination of welded joints.*

prEN ISO 4063, *Welding and allied processes – Nomenclature of processes and reference numbers. (ISO 4063:1998)*

EN ISO 6947:1997, *Welds – Working positions – Definitions of angles of slope and rotation. (ISO 6947:1993)*

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

EN 12062, *Non-destructive examination of welds - General rules for metallic material.*

prEN ISO 15607, *Specification and approval of welding procedures for metallic materials – General rules. (ISO/DIS 15607:1999)*

CR ISO/TR 15608, *Welding – Guidelines for a metallic material grouping system.*

prEN ISO 15609-1, *Specification and approval of welding procedure for metallic materials – Welding procedure specification – Part 1 : Arc welding. (ISO/DIS 15609-1:1999)*

prEN ISO 15609-2, *Specification and approval of welding procedure for metallic materials – Welding procedure specification – Part 2 : Gas welding. (ISO/DIS 15609-2:1997)*

EN 25817, *Arc-welded joints in steel – Guidance on quality levels for imperfections. (ISO 5817:1992)*

3 Terms and definitions

For the purposes of this European standard, the terms and definitions given in prEN ISO 15607 apply.

4 Preliminary welding procedure specification (pWPS)

The preliminary welding procedure specification shall be prepared in accordance with prEN ISO 15609-1 or prEN ISO 15609-2. It shall specify the tolerance for all the relevant parameters.

5 Welding procedure test

The making and testing of test pieces shall be in accordance with clauses 6 and 7 of this standard.

The welder or welding operator who undertakes the welding procedure test satisfactorily in accordance with this standard is approved for the appropriate range of approval according to EN 287-1 or EN ISO 9606-4 or EN 1418.

NOTE In some cases this will result in a different range of approval for the welder who performs the procedure approval and the procedure approval itself

6 Test piece

6.1 General

The welded joint to which the welding procedure will relate in production shall be represented by making a standardized test piece or pieces, as specified in 6.2.

6.2 Shape and dimensions of test pieces

The test pieces shall be of a sufficient size to ensure a reasonable heat distribution.

For all test pieces except branch connections (Figure 4) and fillet welds (Figure 5) the parent metal thickness, t , shall be the same for both plates/pipes to be welded.

The length or number of test pieces shall be sufficient to allow all required tests to be carried out.

NOTE For approval of welded joints of widely differing thickness the use of prEN ISO 15613 may be required.

If $t > 100$ mm test piece dimensions a and b may be reduced by agreement.

Additional test pieces, or longer test pieces than the minimum size, may be prepared in order to allow for extra and/or for re-testing specimens (see 7.5).

If required by the application standard, the direction of plate rolling shall be marked on the test piece when impact tests are required to be taken in the Heat Affected Zone (HAZ).

The thickness and/or pipe outside diameter of the test pieces shall be selected in accordance with 8.3.2.1 to 8.3.2.4.

Unless otherwise specified, the shape and minimum dimensions of the test piece shall be as follows :

6.2.1 Butt joint in plate with full penetration

The test piece shall be in accordance with Figure 1.

6.2.2 Butt joint in pipe with full penetration

The test piece shall be in accordance with Figure 2.

NOTE The word "pipe", alone or in combination, is used to mean "pipe", "tube" or "hollow section".

6.2.3 T-joint with full penetration

The test piece shall be in accordance with Figure 3.

Bestelformulier

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