

norm

NEN-EN-ISO 15614-2

Het beschrijven en kwalificeren van lasprocedures voor metallische materialen - Lasmethodebeproeving - Deel 2: Booglassen van aluminium en zijn legeringen (ISO/DIS 15614-2:2000,IDT)

Publicatie uitsluitend voor commentaar

Specification and approval of welding procedures for metallic materials - Welding procedure test - Part 2: Arc welding of aluminium and its alloys (ISO/DIS 15614-2:2000,IDT)

juni 2000
ICS 25.160.10

Commentaar voor 2001-03-15

Als Europees normontwerp is gepubliceerd: prEN ISO 15614-2:2000,IDT

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Foreword

The text of prEN ISO 15614-2:2000 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 288-4:1992.

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.

Preview

Introduction

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

However, this standard does not invalidate previous welding procedure approvals made to former national standards or specifications 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.

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.

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Preview

1 Scope

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

This standard is a 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 they shall be applied.

This standard applies to the arc welding of wrought and cast aluminium and its alloys. In this standard the term aluminium stands for aluminium and for aluminium alloys.

This standard does not apply to finishing welding of aluminium castings which is dealt by prEN ISO 15614-4.

The principles of this standard may be applied to other fusion welding processes or other welding applications if required by the design specification.

Arc welding is covered by the following processes in accordance with prEN ISO 4063 :

- 131 : metal inert gas welding (MIG welding) ;
- 141 : tungsten inert gas welding (TIG welding) ;
- 15 : plasma arc welding.

NOTE Specific service, material or manufacturing conditions may require more comprehensive testing than is specified by this standard (see Annex D).

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

EN 515, *Aluminium and aluminium alloys — Wrought products — Temper designation.*

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

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

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

EN 970, *Non-destructive examination of fusion welds — Visual examination.*

EN 1011-1, *Welding — Recommendations for welding of metallic materials — Part 1 : General guidance for arc welding.*

prEN 1011-4, *Welding — Recommendations for welding of metallic materials — Part 4 : Arc welding of aluminium and aluminium alloys.*

EN 1320, *Destructive tests on welds in metallic materials — Fracture test.*

EN 1321, *Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds.*

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 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 6520-1, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 1 : Fusion welding (ISO 6520-1:1998).*

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

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 15614-4, *Specification and approval of welding procedures for metallic materials — Welding procedure tests — Part 4 : Finishing welding of aluminium castings (ISO/FDIS 15614-4:2000)*

EN 30042, *Arc-welded joints in aluminium and its weldable alloys — Fusion welding — Guidance on quality levels for imperfections (ISO 10042:1992).*

3 Terms and definitions

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

3.1 finishing welding

welding carried out in order to remove casting defects and core openings to ensure the agreed quality of castings

4 Preliminary welding procedure specification (pWPS)

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

Guidance for the welding of aluminium is given in EN 1011-1 and prEN 1011-4.

5 Welding procedure test

The making and testing of test pieces representing the type of welding used in production 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 given in EN 287-2 or EN 1418. In this case the requirements of EN 287-2 or EN 1418 have to be fulfilled.

6 Test piece

6.1 General

The welded assembly 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.

In Figures 1 to 4, " t " is the thickness of the component part.

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 7.6).

If required by the application standard, the direction of working, e.g. extrusion, should be marked on the test piece.

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 agreed, the shape and minimum dimensions of the test piece shall be as follows.

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