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Specifikation för och godkännande av svetsprocedurer för svetsning vid tillverkning av gjutstål (ISO 11970:2016)

Specification and qualification of welding procedures for production welding of steel castings (ISO 11970:2016)

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Denna standard ersätter SS-EN ISO 11970:2007, utgåva 1.

The European Standard EN ISO 11970:2016 has the status of a Swedish Standard. This document contains the official English version of EN ISO 11970:2016.

This standard supersedes the Swedish Standard SS-EN ISO 11970:2007, edition 1.

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EUROPEAN STANDARD

EN ISO 11970

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 25.160.10; 77.140.80

Supersedes EN ISO 11970:2007

English Version

Specification and qualification of welding procedures for production welding of steel castings (ISO 11970:2016)

Descriptif et qualification de modes opératoires de
soudage pour le soudage de production des aciers
moulés (ISO 11970:2016)

Anforderungen und Anerkennung von
Schweißverfahren für das Produktionsschweißen von
Stahlguss (ISO 11970:2016)

This European Standard was approved by CEN on 10 January 2016.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN ISO 11970:2016) has been prepared by Technical Committee ISO/TC 17 "Steel" in collaboration with Technical Committee ECISS/TC 111 "Steel castings and forgings" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 11970:2007.

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Endorsement notice

The text of ISO 11970:2016 has been approved by CEN as EN ISO 11970:2016 without any modification.

Introduction

All welding procedure qualifications for production welding of steel castings are intended to be in accordance with this International Standard.

Previous procedure qualifications that conform to the range of qualification of [Clause 8](#) are valid under this International Standard.

Where additional tests have to be carried out to complete the qualification, it is only necessary to perform the additional tests to the requirements of [Clauses 6](#) and [7](#).

Specification and qualification of welding procedures for production welding of steel castings

1 Scope

This International Standard specifies how a welding procedure specification (WPS) for production welding of steel castings is qualified.

It defines the conditions for the execution of welding procedure qualification tests and the limits of validity of a qualified welding procedure for all practical welding operations within the range of essential variables.

Tests are intended to be carried out in accordance with this International Standard unless additional tests are specified by the purchaser or by agreement between the contracting parties.

This International Standard applies to the arc welding of steel castings. The principles of this International Standard can be applied to other fusion welding processes subject to agreement between the contracting parties.

In the case of specific service, material or manufacturing conditions, tests more comprehensive than those specified by this International Standard can be specified by the purchaser, in order to gain more information, e.g. longitudinal weld tensile tests, bend tests, chemical analyses, ferrite determination in austenitic stainless steels, elongation, Charpy “V” impact tests, and radiography.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable to its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

ISO 857-1, *Welding and allied processes — Vocabulary — Part 1: Metal welding processes*

ISO 4136, *Destructive tests on welds in metallic materials — Transverse tensile test*

ISO 4969, *Steel — Macroscopic examination by etching with strong mineral acids*

ISO 4986, *Steel castings — Magnetic particle inspection*

ISO 4987, *Steel castings — Liquid penetrant inspection*

ISO 4992-1, *Steel castings — Ultrasonic examination — Part 1: Steel castings for general purposes*

ISO 4992-2, *Steel castings — Ultrasonic examination — Part 2: Steel castings for highly stressed components*

ISO 4993, *Steel and iron castings – Radiographic inspection*

ISO 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6892-1, *Metallic materials – Tensile testing – Part 1: Method of test at room temperature*

ISO 9016, *Destructive tests on welds in metallic materials — Impact tests — Test specimen location, notch orientation and examination*