Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 3: Fusion welding of non-alloyed and low-alloyed cast irons

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 15614-3:2008 sisaldab Euroopa standardi EN ISO 15614-3:2008 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 15614-3:2008 consists of the English text of the European standard EN ISO 15614-3:2008.
Standard on kinnitatud Eesti Standardikeskuse 19.05.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 19.05.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.03.2008.	Date of Availability of the European standard text 15.03.2008.
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Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 3: Fusion welding of non-alloyed and low-alloyed cast irons (ISO 15614-3:2008)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Épreuve de qualification d'un mode opératoire de soudage - Partie 3: Soudage par fusion des fontes non alliées et faiblement alliées (ISO 15614-3:2008)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe - Schweißverfahrensprüfung - Teil 3: Schmelzschweißen von unlegierten und niedriglegierten Gusseisen (ISO 15614-3:2008)

This European Standard was approved by CEN on 7 March 2008.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 15614-3:2008) has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

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.

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Details of International Standards dealing with specification and qualification of welding procedures are given in ISO 15607:2003, Annex A.

Welding procedure tests for flash welding are presented in ISO 15614-13 and for friction welding in ISO 15620.

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

Part 3: Fusion welding of non-alloyed and low-alloyed cast irons

1 Scope

This part of ISO 15614 specifies how a preliminary welding procedure specification (pWPS) for production and repair welding of non-alloyed and low-alloyed cast irons is qualified by fusion welding procedure tests.

This part of ISO 15614 defines the conditions for execution of the welding procedure tests and the range of qualification for welding procedures for all practical welding operations within the range of a defined list of variables.

This part of ISO 15614 is applicable to all new welding procedures. However, it does not invalidate previous welding procedure tests made to former national standards or specifications. Where additional tests have to be carried out to make the qualification technically equivalent, it is only necessary to do the additional tests on a test piece made in accordance with this part of ISO 15614.

Additional tests may be required by application standards.

This part of ISO 15614 is applicable to welding non-alloyed and low-alloyed grey cast iron castings according to: EN 1561; EN 1562; EN 1563; and EN 1564.

The principles of this part of ISO 15614 are also applicable for welding cast iron to steel or to other unalloyed and low-alloyed cast iron materials.

2 Normative references

The following referenced documents are indispensable for the application 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 783, *Metallic materials — Tensile testing at elevated temperature*

ISO 6947, *Welds — Working positions — Definitions of angles of slope and rotation*

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 15609-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding*

ISO 15609-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 2: Gas welding*

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

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

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

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*

EN 1011-8:2004, *Welding — Recommendations for welding of metallic materials — Part 8: Welding of cast irons*

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

EN 1561, *Founding — Grey cast irons*

EN 1562, *Founding — Malleable cast irons*

EN 1563, *Founding — Spheroidal graphite cast irons*

EN 1564, *Founding — Austempered ductile cast irons*

EN 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

3 Terms and definitions

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

3.1
production welding
any welding carried out during manufacture before final delivery to the end user

3.2
joint welding
production welding used to join components together

3.3
finishing welding
production welding carried out in order to remove casting defects to ensure the required quality of castings

3.4
repair welding
any welding carried out after delivery to the end user, i.e. after the product has been in service