Qualification test of welders –
Fusion welding –
Part 1: Steels
English translation of DIN EN 287-1:2011-11
A comma is used as the decimal marker.

National foreword

This standard has been prepared by Technical Committee CEN/TC 121 “Welding” (Secretariat: DIN, Germany), Subcommittee SC 4 “Quality management in the field of welding” (Secretariat: DIN, Germany).

The responsible German body involved in its preparation was the Normenausschuss Schweißtechnik (Welding Standards Committee), Working Committee NA 092-00-02 AA Qualifizierung von Personal für das Schweißen und verwandte Verfahren (DVS AG Q 5).

The aim of this standard is to ensure that the qualification testing of welders is performed under the same conditions and using the same types of test piece, irrespective of where such tests are held. By passing the test as specified here, a welder demonstrates that he is adequately qualified to be employed for the fusion welding of steel in industry within the scope specified in this standard.

The standard thus provides a basis for mutual recognition of welder qualification test certificates by the bodies responsible for the various fields of application.

Examiners and examining bodies

This standard does not provide information on examiners and examining bodies involved in the qualification testing of welders since these are indicated in the relevant legal regulations, specialized standards, codes of practice, or technical delivery conditions.

Test certificates

This standard does not invalidate existing qualification test certificates issued on the basis of DIN EN 287-1:2006-06. On the expiry of these certificates new certificates have to be issued, which may involve the welding of further test pieces by the welder concerned (since the scope of the new certificates differs somewhat from those issued hitherto on the basis of DIN EN 287-1:2006-06).

Job knowledge test

Welders who apply for approval in Germany are required to take the job knowledge test detailed in Annex C. Welders who are employed in Germany and have not passed such a test will be at least required to demonstrate that they have some knowledge in occupational safety and accident prevention as well as knowledge of how imperfections in welds occur and how they can be prevented.

When a welding certificate is to be renewed in Germany, the job knowledge test must be repeated, regardless of whether this involves welding a test piece or the renewal is awarded on the basis of test records of destructive or non-destructive testing.

DIN EN 287 consists of the following parts, under the general title Qualification test of welders — Fusion welding:

— Part 1: Steels
— Part 6: Cast iron
The European Standards referred to in this document have been published as the corresponding DIN EN or DIN EN ISO Standards. The DIN Standards corresponding to the International Standards referred to in this document are as follows:

<table>
<thead>
<tr>
<th>CEN ISO/TR 15608</th>
<th>DIN-Fachbericht CEN/ISO TR 15608</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEN ISO/TR 20172</td>
<td>DIN SPEC 1097 DIN-Fachbericht CEN ISO/TR 20172</td>
</tr>
<tr>
<td>CEN ISO/TR 20173</td>
<td>DIN SPEC 1116 DIN-Fachbericht ISO/TR 20173</td>
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<td>CEN ISO/TR 20174</td>
<td>DIN-Fachbericht CEN ISO/TR 20174</td>
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<tr>
<td>ISO/TR 25901</td>
<td>DIN-Fachbericht ISO/TR 25901</td>
</tr>
<tr>
<td>ISO 857-1</td>
<td>DIN ISO 857-1</td>
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</table>

### Amendments

This standard differs from DIN EN 287-1:2006-06 as follows:

a) an information relating to the period of validity of welder qualifications in accordance with the requirements of the previous edition is given in the Introduction;

b) normative references in Clause 2 and in the Bibliography have been updated;

c) Clause 3 “Terms and definitions” has been revised; new terms have been added: manufacturer, fillet weld, layer, leftward welding, rightward welding, branch connection, filler material and verification;

d) in Clause 4, the reference numbers of the individual welding processes have been brought in line with DIN EN ISO 4063 and the leg length of fillet weld (z) has been deleted;

e) in Subclause 5.4, the text of item b) has been changed to read: “but welds do not qualify fillet welds or vice versa”;

f) in Subclause 5.4, item c), it has been specified that a welder qualified by butt weld test, may weld a supplementary fillet weld test piece to become qualified for all fillet welds as given for the butt weld qualifications;

g) in Subclause 5.5 “Material groups”, a NOTE referring to CEN ISO/TR 20172, CEN ISO/TR 20173 and CEN ISO/TR 20174 has been included;

h) the former Table 3 “Range of qualification for welding consumables” has been subdivided into 2 tables;

i) in Subclause 5.8 “Welding positions”, two welding positions, PH and PJ, have been added;

j) in Clause 7 “Acceptance requirements for test pieces”, the sentence referring to angular misalignment has been deleted;

k) in Subclause 9.2 “Confirmation of the validity”, it has been specified that an electronic signature may be used to confirm the validity of the welder's qualification test certificate;

l) Annex B “Designation examples” has been revised;

m) the former Annex D (informative) “Variables to be confirmed and traceable for prolongation” has been deleted without replacement.

### Previous editions

- DIN 8560-1: 1959-01
- DIN 8560: 1968-08, 1978-01, 1982-05
National Annex NA
(informative)

Bibliography

DIN SPEC 1097 DIN-Fachbericht CEN ISO/TR 20172, Welding — Grouping systems for materials — European materials

DIN SPEC 1116 DIN-Fachbericht ISO/TR 20173, Welding — Grouping systems for materials — American materials

DIN-Fachbericht CEN ISO/TR 15608, Welding — Guidelines for a metallic materials grouping system


DIN-Fachbericht ISO/TR 25901, Welding and related processes — Vocabulary

DIN ISO 857-1, Welding and allied processes — Vocabulary — Part 1: Metal welding processes
Qualification test of welders - Fusion welding - Part 1: Steels

Epreuve de qualification des soudeurs - Soudage par fusion - Partie 1: Aciers

Prüfung von Schweißern - Schmelzschweißen - Teil 1: Stähle

This European Standard was approved by CEN on 16 June 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.
Contents

Foreword ........................................................................................................................................... 4
Introduction ........................................................................................................................................ 5
1 Scope ................................................................................................................................................ 6
2 Normative references ..................................................................................................................... 6
3 Terms and definitions ..................................................................................................................... 6
4 Reference numbers, symbols and abbreviated terms ....................................................................... 8
4.1 General ............................................................................................................................................ 8
4.2 Reference numbers of welding processes .................................................................................... 8
4.3 Symbols and abbreviations ........................................................................................................... 9
4.3.1 For test pieces ......................................................................................................................... 9
4.3.2 For consumables ...................................................................................................................... 9
4.3.3 For other weld details .............................................................................................................. 10
4.3.4 For bend tests ......................................................................................................................... 10
5 Essential variables and range of qualification ................................................................................ 11
5.1 General .......................................................................................................................................... 11
5.2 Welding processes ........................................................................................................................ 11
5.3 Product type ................................................................................................................................ 12
5.4 Type of weld .................................................................................................................................. 12
5.5 Material groups ............................................................................................................................ 13
5.5.1 Steel groups of parent material .............................................................................................. 13
5.5.2 Range of qualification ............................................................................................................. 13
5.6 Filler materials ............................................................................................................................. 14
5.7 Dimensions .................................................................................................................................... 15
5.8 Welding positions ........................................................................................................................ 16
5.9 Weld details ................................................................................................................................... 17
6 Examination and testing .................................................................................................................. 18
6.1 Examination .................................................................................................................................. 18
6.2 Test pieces .................................................................................................................................... 18
6.3 Welding conditions ........................................................................................................................ 21
6.4 Test methods ................................................................................................................................ 21
6.5 Test piece and test specimen ........................................................................................................ 22
6.5.1 General ...................................................................................................................................... 22
6.5.2 Butt weld in plate and pipe ..................................................................................................... 22
6.5.3 Fillet weld on plate ................................................................................................................... 23
6.5.4 Fillet weld on pipe .................................................................................................................... 26
6.6 Test record ..................................................................................................................................... 26
7 Acceptance requirements for test pieces .......................................................................................... 27
8 Re-tests .............................................................................................................................................. 27
9 Period of validity ............................................................................................................................. 27
9.1 Initial qualification ......................................................................................................................... 27
9.2 Confirmation of the validity .......................................................................................................... 27
9.3 Prolongation of qualification ........................................................................................................ 28
10 Certificate ......................................................................................................................................... 28
11 Designation ..................................................................................................................................... 28
Annex A (informative) Welder’s qualification test certificate ............................................................... 30
Annex B (informative) Designation examples ..................................................................................... 31
Foreword

This document (EN 287-1:2011) has been prepared by Technical Committee CEN/TC 121 “Welding”, the secretariat of which is held by DIN.

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 January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

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 287-1:2004.

This document 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 document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.
Introduction

The ability of a welder to follow verbal or written instructions and verification of a person’s skills is an important factor in ensuring the quality of the welded product.

The testing of a welder's skill in accordance with this standard depends on welding techniques and conditions used in which uniform rules are complied with and standard test pieces are used.

The principle of this standard is that a qualification test qualifies the welder not only for the conditions used in the test, but also for all joints which are considered easier to weld on the presumption that the welder has received a specific training and/or has industrial practice within the range of qualification.

The qualification test can be used to qualify a welding procedure and a welder provided that all the relevant requirements, e.g. test piece dimensions and testing requirements are satisfied (see EN ISO 15614-1).

At the end of its period of validity, the existing and valid qualification testing of welders in accordance with the requirements of the previous edition of this standard may be revalidated according to the previous edition. Alternatively, the range of qualification may be updated in accordance with this edition. All new qualifications and re-qualifications shall be in accordance with this edition.
1 Scope

This European Standard defines the qualification testing of welders for the fusion welding of steels. It provides a set of technical rules for a systematic qualification test of the welder, and enables such qualifications to be uniformly accepted independently of the type of product, location and examiner/examining body.

When qualifying welders, the emphasis is placed on the welder’s ability to manually manipulate the electrode / welding torch / welding blowpipe and thereby producing a weld of acceptable quality.

The welding processes referred to in this standard include those fusion-welding processes which are designated as manual or partly mechanized welding. It does not cover fully mechanized and automated welding processes (see EN 1418).

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.

EN 1320:1996, Destructive tests on welds in metallic materials — Fracture test
EN 1435:1997, Non-destructive examination of welds — Radiographic examination of welded joints
EN ISO 6947, Welding and allied processes — Welding positions (ISO 6947:2011)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 welder
person who holds and manipulates the electrode holder, welding torch or blowpipe by hand