Specification and approval of welding procedures for metallic materials

Part 7. Approval by a standard welding procedure for arc welding

The European Standard EN 288-7 : 1995 has the status of a British Standard
Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee WEE/36, Approval testing of welding procedures and welding, upon which the following bodies were represented:

AEA Technology
Aluminium Federation
Associated Offices Technical Committee
Association of Consulting Scientists
British Constructional Steelwork Association Ltd.
British Nuclear Fuels plc
British Railways Board
British Stainless Steel Association
Castings Technology International
Electricity Association
General Municipal Boilermaker and Allied Trades Union
Health and Safety Executive
Lloyd's Register of Shipping
Ministry of Defence
Power Generation Contractors' Association (PGCA (BEAMA Ltd.))
Process Plant Association
Railway Industry Association
TWI
Welding Manufacturers' Association (BEAMA Ltd.)
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National foreword

This British Standard has been prepared by Technical Committee WEE/36 and is the English language version of EN 288-7:1994 Specification and approval of welding procedures for metallic materials — Part 7: Approval by a standard welding procedure for arc welding, published by the European Committee for Standardization (CEN).

EN 288-7 was produced as a result of international discussions in which the United Kingdom took an active part.

There has previously been no direct British Standard equivalent to this standard.

It is envisaged that this method of approval will not be included in application standards for products where weld integrity is critical for safety reasons and it is not intended for use as a direct alternative to BS EN 288-3 or BS EN 288-4.

It is assumed that the execution of the provisions of this document is entrusted to suitably qualified and experienced persons.

Cross-references

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Compliance with a British Standard does not of itself confer immunity from legal obligations.
Specification and approval of welding procedures for metallic materials — Part 7: Approval by a standard welding procedure for arc welding

This European Standard was approved by CEN on 1995-04-07. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions. CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.
Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 121, Welding, of which the secretariat is held by DS.

This standard consists of the following Parts with the following title, Specification and approval of welding procedures for metallic materials:

Part 1: General rules for fusion welding;
Part 2: Welding procedure specification for arc welding;
Part 3: Welding procedure tests for the arc welding of steels;
Part 4: Welding procedure tests for the arc welding of aluminium and its alloys;
Part 5: Approval by using approved welding consumables for arc welding;
Part 6: Approval related to previous experience;
Part 7: Approval by a standard welding procedure for arc welding;
Part 8: Approval by a pre-production welding test.

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 November 1995, and conflicting national standards shall be withdrawn at the latest by November 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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0 Introduction
In EN 288-1, one of the methods of welding procedure approval is by using an approved standard welding procedure.

1 Scope
This standard defines the conditions for the approval of a standard welding procedure and establishes the conditions, limits and ranges of approval necessary for the use of standard welding procedures.

The use of a standard welding procedure can be restricted by an application standard or at the enquiry/order stage by 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 287-2 Approval testing of welders — Fusion welding — Part 2: Aluminium and aluminium alloys
EN 288-1 Specification and approval of welding procedures for metallic materials — Part 1: General rules for fusion welding
EN 288-2 Specification and approval of welding procedures for metallic materials — Part 2: Welding procedure specification for arc welding
EN 288-3 Specification and approval of welding procedures for metallic materials — Part 3: Welding procedure tests for the arc welding of steels
EN 288-4 Specification and approval of welding procedures for metallic materials — Part 4: Welding procedure tests for the arc welding of aluminium and its alloys.
EN 719 Welding coordination — Tasks and responsibilities
EN 729-1 Quality requirements for welding — Fusion welding of metallic materials — Part 1: Guidelines for selection and use
EN 729-2 Quality requirements for welding — Fusion welding of metallic materials — Part 2: Comprehensive quality requirements
EN 729-3 Quality requirements for welding — Fusion welding of metallic materials — Part 3: Standard quality requirements
EN 729-4 Quality requirements for welding — Fusion welding of metallic materials — Part 4: Elementary quality requirements

3 Definitions
For the purposes of this standard, the definitions listed in EN 288-1 apply.

4 Preliminary welding procedure specification (pWPS)
The approval of a welding procedure based on standard welding procedure shall be based on a pWPS according to EN 288-2, or a standard similar to EN 288-2. This pWPS shall specify the range for all the relevant parameters.
5 Approval of the standard welding procedure

5.1 General
The approval of the welding procedure shall be carried out by an examiner or an examining body according to EN 288-1. The examination and testing shall be carried out in accordance with the relevant Part of EN 288 for welding procedure testing.

After approval the preliminary welding procedure specification will be classified as a welding procedure specification and may be used as a standard welding procedure in accordance with the relevant application standards or contract.

Changes outside the range of approval given in the relevant Part of EN 288 for welding procedure testing, as modified in 5.2 to 5.7, shall require a new approval welding procedure.

5.2 Parent metal
This standard is applicable for groups of materials defined in table 1.

5.3 Consumables
The approval is limited to homogenous welded assemblies.

5.4 Parent metal thickness
A standard welding procedure shall not be used for thicknesses below 3 mm or above 40 mm.

5.5 Fillet weld throat thickness
A standard welding procedure shall not be used for fillet weld throat thickness below 3 mm.

5.6 Diameter of pipes
Standard welding procedures are only valid for pipes with outside diameters greater than 25 mm.

5.7 Branch connection
For thickness: see 5.4.
For diameter: see 5.6

6 Use of a standard welding procedure

6.1 General
A standard welding procedure prepared and documented in accordance with clause 8 can be used without further tests providing the following requirements and limitations are observed.

6.2 Related to the user of standard welding procedure
The user of a standard welding procedure is responsible for the appropriate selection and application of the standard welding procedure.

The use of a standard welding procedure requires welding coordination in accordance with EN 719 and that the user fulfils quality requirements in accordance with the appropriate Part of EN 729.

6.3 Related to welding equipment
The standard welding procedure is approved for use in production with welding power sources and welding equipment having electrical and mechanical characteristics which are capable of achieving those used in preparing the test weld for approval of standard welding procedure as specified in the welding procedure specification WPS.

The equipment used during production shall permit control of all essential welding parameters.

6.4 Related to the personnel
A standard welding procedure shall only be used by welders or welding operators for mechanized equipment approved in accordance with the relevant Part of EN 287.

6.5 Related to the environmental conditions
The standard welding procedure shall specify the necessary limits on the environmental conditions (e.g. temperature, climate, pressure ...) and be valid when used only within these limits.

Table 1. Applicable groups of materials

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<th>Range of approval</th>
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<tr>
<td></td>
<td>Group 22a welded with group 22b</td>
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</table>

1Materials of group 9 excluding those which are sensitive to hot cracking.
2A list of the accepted materials will be added when relevant EN is available.
3Including castings, forged and wrought material with a similar chemical composition.
7 Validity
A standard welding procedure remains valid indefinitely unless otherwise agreed between the contracting parties at the time of issue.

8 Preparation and documentation
The standard welding procedure shall be issued as a specification covering ranges for all relevant parameters. Any restrictions e.g. equipment performance or environmental conditions shall be stated, as appropriate. The specification shall be in the format of either a WPS or a welding procedure approval record WPAR according to the relevant Part of EN 288.

The specification shall be signed and dated by the examiner or test body and then it becomes a standard welding procedure. Issue and amendment shall only be via the examiner or examining body.

All records on which the approval is based shall be kept on file during the entire period of validity of the standard welding procedure.

The standard welding procedure shall be kept on file by the user during the entire period of use.
List of references

See national foreword.
BSI — British Standards Institution

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