

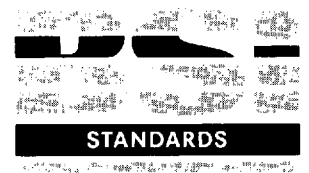
Specification and approval of welding procedures for metallic materials

Part 8. Approval by a pre-production welding test

The European Standard EN 288-8: 1995 has the status of a
British Standard

ICS 25.160.10

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STANDARDS

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 welders, 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.)

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 November 1995

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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 288-8 : 1994 *Specification and approval of welding procedures for metallic materials — Part 8 : Approval by a pre-production welding test*, published by the European Committee for Standardization (CEN).

EN 288-8 : 1994 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 assumed that the execution of the provisions of this document is entrusted to suitably qualified and experienced persons.

Cross-references

Publication referred to	Corresponding British Standard
EN 287-1 : 1992	BS EN 287 <i>Approval testing of welders for fusion welding</i> Part 1 : 1992 <i>Steels</i>
EN 287-2 : 1992	Part 2 : 1992 <i>Aluminium and aluminium alloys</i>
EN 288-1 : 1992	BS EN 288 <i>Specification and approval of welding</i> <i>procedures for metallic materials</i> Part 1 : 1992 <i>General rules for fusion welding</i>
EN 288-2 : 1992	Part 2 : 1992 <i>Welding procedures specification for arc</i> <i>welding</i>
EN 288-3 : 1992	Part 3 : 1992 <i>Welding procedure tests to the arc welding</i> <i>of steels</i>
EN 288-4 : 1992	Part 4 : 1992 <i>Welding procedure tests for the arc welding</i> <i>of aluminium and its alloys</i>
EN 288-5 : 1994	Part 5 : 1995 <i>Approval by using approved welding</i> <i>consumables for arc welding</i>
EN 288-6 : 1994	Part 6 : 1995 <i>Approval related to previous experience</i>
EN 288-7 : 1995	Part 7 : 1995 <i>Approval by a standard welding procedure</i> <i>for arc welding</i>

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EUROPEAN STANDARD

EN 288-8

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 1995

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English version

Specification and approval of welding procedures for metallic materials — Part 8: Approval by a pre-production welding test

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques — Partie 8: Epreuve de qualification par exécution d'un assemblage soudé particulier préalable à la production

Anforderung und Anerkennung von Schweißverfahren für metallische Werkstoffe — Teil 8: Anerkennung durch eine Schweißprüfung vor Fertigungsbeginn

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Ref. No. EN 288-8 : 1995 E

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 a pre-production welding test.

Approval by a pre-production welding test can be used where the shape and dimensions of the standard test pieces (e.g. those of EN 288-3) do not adequately represent the joint to be welded, e.g. attachment weld to thin pipe.

In such cases, one or more special test pieces can be made to simulate the production joint in all essential features, e.g. dimensions, restraint, heat sink effects, limited access.

1 Scope

This standard specifies the conditions for approval of welding procedure based on pre-production welding tests in accordance with EN 288-1. In addition it gives the range of approval and the validity.

This standard is applicable to fusion welding of metallic materials. Any other welding processes can be accepted by agreement between the contracting parties.

The use of this standard 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 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 288-5 *Specification and approval of welding procedures for metallic materials — Part 5: Approval by using approved welding consumables for arc welding*

EN 288-6 *Specification and approval of welding procedures for metallic materials — Part 6: Approval related to previous experience*

EN 288-7 *Specification and approval of welding procedures for metallic materials — Part 7: Approval by a standard welding procedure for arc welding*

3 Definitions

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

4 Preliminary welding procedure specifications (pWPS)

The approval of a welding procedure based on pre-production welding tests shall be based on a pWPS according to EN 288-2. This pWPS shall specify the range for all relevant parameters.

5 Approval of the welding procedure

The approval of the welding procedure shall be carried out by an examiner or examining body in accordance with the relevant part of EN 288 for procedure testing as modified by this standard.

6 Welding of test pieces

Special test pieces to be welded shall be in accordance with the relevant application standard or shall be agreed between the contracting parties.

Preparation and welding of the pre-production weld test piece shall be carried out under the general conditions of production welding which they shall represent with shapes and dimensions of the test piece simulating the actual welding conditions of the structure. This includes welding positions and other essential items, e.g. stress conditions, heating effects, limited access.

Jigs and fixtures shall be similar to those used in production.

Tacks welds to be incorporated in the final joint should be made from the side to be welded and their location should be identifiable after the test weld has been completed.

7 Testing

The testing of the pre-production test pieces shall as far as possible relate to the relevant part of EN 288 for procedure testing.

If a pre-production test relates to EN 288-3 or EN 288-4, all types of test according to table 1 of EN 288-3 or EN 288-4 shall be carried out as far as possible. In general, the following tests are to be performed at least:

- a) visual inspection (100%);
- b) surface crack detection (for non-magnetic material dye penetrant only);
- c) hardness tests (not required for parent metals of ferritic steels with $R_m < 420 \text{ N/mm}^2$ or $R_e < 275 \text{ N/mm}^2$ or for steels according to group 9 or aluminium alloys in accordance with groups 21 and 22);
- d) macrographic examination (number depends on the geometry of the structure).

8 Range of approval

8.1 General

Any approval issued under this standard is limited to the type of joint used in the pre-production test.

The range of approval is generally in accordance with the relevant parts of EN 288 for welding procedure tests. However the range of approval for thickness can be applied to each component in the joint, as well as weld thickness.

8.2 Related to the manufacturer

An approval of welding procedure specification WPS obtained by a manufacturer is valid for welding in workshops or sites under the same technical and quality control of that manufacturer.

9 Validity

An approved welding procedure based on pre-production welding test is valid indefinitely unless otherwise agreed between the contracting parties at the time of issue.

10 Welding procedure approval record (WPAR)

The welding procedure approval record (WPAR) is a statement of the results of assessing each test piece including retests. The WPAR format according to EN 288-3 or EN 288-4 shall be used as far as possible.

List of references

See national foreword.

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