INTERNATIONAL STANDARD

ISO 9956-7

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Specification and approval of welding procedures for metallic materials —

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

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques —

Partie 7: Qualification par référence à un mode opératoire de soudage standard pour le soudage à l'arc

Reference number
ISO 9956-7:1995(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9956-7 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Unification of requirements in the field of metal welding.*

This part of ISO 9956 is the equivalent of European Standard EN 288-7.

ISO 9956 consists of the following parts, under the general 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*

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— *Part 8: Approval by a pre-production welding test*

— *Part 10: Welding procedure specification for electron beam welding*

— *Part 11: Welding procedure specification for laser beam welding*

— *Part 12: Welding procedure tests for arc welding of cast steels*

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Specification and approval of welding procedures for metallic materials —

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

1 Scope

This part of ISO 9956 defines the conditions for the approval of a standard welding procedure for arc welding and establishes the conditions, limits and ranges of approval necessary for the use of standard welding procedures for arc welding.

The use of this part of ISO 9956 can be restricted by an application standard or at the enquiry or order stage by contracting parties.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9956. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9956 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3834-1:1994, *Quality requirements for welding — Fusion welding of metallic materials — Part 1: Guidelines for selection and use.*

ISO 3834-2:1994, *Quality requirements for welding — Fusion welding of metallic materials — Part 2: Comprehensive quality requirements.*

ISO 3834-3:1994, *Quality requirements for welding — Fusion welding of metallic materials — Part 3: Standards quality requirements.*

ISO 3834-4:1994, *Quality requirements for welding — Fusion welding of metallic materials — Part 4: Elementary quality requirements.*

ISO 9606-1:1994, *Approval testing of welders — Fusion welding — Part 1: Steels.*

ISO 9606-2:1994, *Approval testing of welders — Fusion welding — Part 2: Aluminium and aluminium alloys.*

ISO 9956-1:1995, *Specification and approval of welding procedures for metallic materials — Part 1: General rules for fusion welding.*

ISO 9956-2:1995, *Specification and approval of welding procedures for metallic materials — Part 2: Welding procedure specification for arc welding.*

ISO 9956-3:1995, *Specification and approval of welding procedures for metallic materials — Part 3: Welding procedure tests for the arc welding of steels.*

ISO 9956-4:1995, *Specification and approval of welding procedures for metallic materials — Part 4: Welding procedure tests for the arc welding of aluminium and its alloys.*

EN 719:1994, *Welding coordination — Tasks and responsibilities.*

3 Definitions

For the purposes of this part of ISO 9956, the definitions given in ISO 9956-1 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 ISO 9956-2 or a standard similar to

ISO 9956-2. This pWPS shall specify the range for all 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 test body according to ISO 9956-1. The examination and testing shall be carried out in accordance with the relevant part of ISO 9956 for welding procedure testing.

After approval, the preliminary welding procedure specification shall 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 ISO 9956 for welding procedure testing as modified in 5.2 to 5.7 shall require a new approval welding procedure.

5.2 Parent metal

This part of ISO 9956 is applicable for groups of materials given in table 1.

Table 1 — Applicable groups of materials

Materials used for the approval of the welding procedure	Range of approval
Steel (ISO 9956-3)[1)]	
group 1	group 1 welded with group 1
group 9[2)3)]	group 9 welded with group 9
Aluminium and its alloys (ISO 9956-4)[1)]	
group 21	group 21 welded with group 21
groups 22a and 22b	group 22a welded with group 22a group 22b welded with group 22b group 22a welded with group 22b

1) Including castings, forged and wrought material with a similar chemical composition.
2) Materials of group 9 excluding those which are sensitive to hot cracking.
3) A list of the accepted materials will be added when the relevant International Standard is available.

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 thicknesses 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 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 be 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 ISO 3834.

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.