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Submerged arc-welded steel tubes for pressure purposes — Radiographic testing of the weld seam for the detection of imperfections

*Tubes en acier soudés à l'arc immergé pour service sous pression —
Contrôle radiographique du cordon de soudure pour la détection des
imperfections*



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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 12096 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 19, *Technical delivery conditions for steel tubes for pressure purposes*.

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Submerged arc-welded steel tubes for pressure purposes — Radiographic testing of the weld seam for the detection of imperfections

1 Scope

This International Standard specifies requirements for radiographic testing of the longitudinal or spiral weld seam of submerged arc-welded steel tubes for the detection of imperfections using the X-ray film technique.

One set of acceptance criteria is considered, together with two image quality classes R1 and R2.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 1027:1983, *Radiographic image quality indicators for non-destructive testing — Principles and identification*.

ISO 2504:1973, *Radiography of welds and viewing conditions for films — Utilization of recommended patterns of image quality indicators (I.Q.I.)*.

ISO 5576:—¹⁾, *Non-destructive testing — Industrial radiology — Vocabulary*.

1) To be published.

ISO 5579:1985, *Non-destructive testing — Radiographic examination of metallic materials by X- and gamma rays — Basic rules*.

ISO 7004:1987, *Photography — Industrial radiographic film — Determination of ISO speed and average gradient when exposed to X- and gamma-radiation*.

ISO 11484:1994, *Steel tubes for pressure purposes — Qualification and certification of non-destructive testing (NDT) personnel*.

3 General requirements

3.1 For the purpose of this International Standard, the definitions given in ISO 5576 shall apply.

3.2 The radiographic inspection covered by this International Standard is usually carried out on tubes after completion of all the primary production process operations.

These activities shall be carried out by NDT personnel trained and qualified in accordance with ISO 11484, as nominated by the manufacturer. In the case of third-party inspection, this shall be agreed between the purchaser and manufacturer.

3.3 The tubes to be tested shall be sufficiently straight to ensure the validity of the test. The surfaces of the weld seam and adjacent parent metal shall be sufficiently free from foreign matter and surface irregularities which could interfere with the interpretation of the radiographs.