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Filler materials for manual welding — Size requirements

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Reference number
ISO 544 : 1989 (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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 544 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*.

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This second edition cancels and replaces the first edition (ISO 544 : 1975), as well as ISO 545 : 1975, ISO 546 : 1975 and ISO 547 : 1975, which have been technically revised.

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Filler materials for manual welding — Size requirements

1 Scope

This International Standard specifies the size requirements (diameters, lengths and tolerances) for the following filler materials for manual welding:

- covered electrodes;
- drawn or extruded filler materials supplied in straight lengths;
- filler materials, other than drawn or extruded, supplied in straight lengths.

NOTE — Flux cored or solid bare wires are not taken into consideration in this International Standard. They are dealt with in ISO 864.

2 Size requirements

2.1 Covered electrodes

2.1.1 Diameters and tolerance

The core wire diameters shall have the following values, expressed in millimetres:

1,6 — 2,0 — 2,5 — 3,2 — 4,0 — 5,0 — 6,0 — 8,0.

If other values of diameters are necessary, they shall be chosen from the Renard series of preferred numbers.

The tolerance shall be $\pm 3\%$ of the diameter, with a maximum of $\pm 0,1$ mm.

2.1.2 Lengths and tolerance

Depending on the diameters, the electrode lengths shall have the values shown in table 1.

Table 1

Dimensions in millimetres

Diameter	Length
1,6	150 — 200 — 225 — 250
2,0	225 — 250 — 300 — 350
2,5	250 — 300 — 350
3,2	300 — 350 400 — 450
4,0 and above	350 — 400 450 — (500 — 550 — 600 — 700 — 900) ¹⁾

1) Lengths greater than 450 mm are mainly used for the gravity welding process.

The tolerance shall be ± 3 mm.

2.2 Drawn or extruded filler materials supplied in straight lengths

2.2.1 Diameters and tolerance

The diameters shall have the following values, expressed in millimetres:

0,8 — 0,9 — 1,0 — 1,2 — 1,6 — 2,0 — 2,5 — 3,2 — 4,0 — 5,0 — 6,0 — 8,0.

If other values of diameters are necessary, they shall be chosen from the Renard series of preferred numbers.

The tolerance shall be $\pm 3\%$ of the diameter, with a maximum of $\pm 0,1$ mm.

2.2.2 Lengths and tolerance

Drawn or extruded filler materials, supplied in straight lengths, shall preferably have the following lengths, expressed in millimetres:

250 — 350 — 450 — 500 — 600 — 750 — 900 — 1 000.

The tolerance shall be ± 5 mm.

2.3 Filler materials, other than drawn or extruded, supplied in straight lengths

2.3.1 Non-circular section filler materials

These usually concern moulded filler materials, the wide variety of shapes and dimensions of which do not always make it

possible to conform to constant dimensions. The surface of a section cut at right angles to the length shall have the following dimensions (expressed in square millimetres, preceded by "S"):

1,0 — 1,6 — 2,5 — 3,2 — 4,0 — 6,3 — 10,0 — 16,0 —
25,0 — 40,0 — 63,0 — 100,0.

The tolerance shall be ± 10 %.

2.3.2 Lengths and tolerance

The lengths of these filler materials shall preferably have the following values, expressed in millimetres:

250 — 350 — 450 — 500 — 600 — 750 — 900 — 1 000.

The tolerance shall be ± 5 mm.

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