
International Standard



6847

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Covered electrodes for manual metal arc welding — Deposition of a weld metal pad for chemical analysis

Électrodes enrobées pour soudage manuel à l'arc — Exécution d'un dépôt de métal fondu en vue de l'analyse chimique

First edition — 1985-11-01

ITeH STANDARD PREVIEW
(standards.iteh.ai)

[ISO 6847:1985](https://standards.iteh.ai/catalog/standards/sist/6bcd24f-f45b-486c-be9c-c963ef4cbb47/iso-6847-1985)

<https://standards.iteh.ai/catalog/standards/sist/6bcd24f-f45b-486c-be9c-c963ef4cbb47/iso-6847-1985>

UDC 621.791.042.4 : 543.05

Ref. No. ISO 6847-1985 (E)

Descriptors : welding, electric welding, arc welding, covered electrodes, weld metal, chemical analysis.

Price based on 2 pages

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.

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 6847 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

STANDARD PREVIEW
(standards.ten.ai)

ISO 6847:1985
<http://www.international-standards.org/dfs/f45b-486c-be9c-c963e4cbb47/iso-6847-1985>

Covered electrodes for manual metal arc welding — Deposition of a weld metal pad for chemical analysis

1 Scope and field of application

This International Standard defines the procedure to be used for depositing weld metal by fusing covered metal electrodes with diameters ranging from 1,6 to 6,3 mm, and specifies the procedure for the chemical analysis of the weld pad thus obtained, whatever the nature of the deposited metal.

This analysis may be carried out either on chips taken by milling or using spectrographic methods.

The method of deposition specified in this International Standard shall be referred to in case of dispute.

NOTE — It may possibly be extended to electrodes with diameters greater than 6,3 mm.

2 Backing plate

2.1 Nature

The backing plate shall be made from steel having a composition similar to that of the deposited metal or from a weldable carbon-manganese structural steel with a carbon content of less than 0,20 % (*m/m*).

2.2 Dimensions

The minimum dimensions of the backing plate are given in table 1.

Table 1

Electrode diameter mm	Plate size (min.) mm
1,6 — 2 — 2,5 — 3,2 — 4 — 5	55 × 55 × 10
6,3	65 × 65 × 10

2.3 Surface condition

The surface of the backing plate onto which the weld metal is to be deposited shall be previously cleaned by grinding in order to remove any remaining rust, scale, grease or paint.

3 Conditions of deposition

3.1 Type of current and polarity

The weld metal shall be deposited using the type of current (and, if appropriate, the polarity) indicated by the manufacturer for the electrodes concerned.

If the manufacturer leaves the choice between alternating current (a.c.) and direct current (d.c.), alternating current shall be chosen.

3.2 Welding position

The weld metal shall be deposited in the flat position.

3.3 Welding equipment

The welding equipment shall have characteristics in conformity with the instructions for use of the electrodes. The open-circuit voltage of a.c. welding equipment shall not be less than that specified by the manufacturer when the electrodes are used on a.c.

3.4 Electrode melting

If the electrodes have to be dried, baking shall be carried out in accordance with the method specified by the manufacturer.

The electrode shall be entirely melted except for the usual stub of 40 to 50 mm, including the bare section.

The arc length shall always be maintained as short as possible inasmuch as it remains stable without visible extinguishing. The width of each bead shall range from 1,5 to 2,5 times the diameter of the electrode core. It shall be obtained without weaving, at normal welding speed.

The current intensity shall be equal to the mean value recommended for welding in the flat position or, if not specified, it shall correspond to 70 % of the maximum current value indicated by the manufacturer.

3.5 Deposition of weld metal

After each pass, the deposited metal shall be cooled by immersion in 10 l of water for about 30 s, the depth of immersion being at least 10 cm.

The slag shall be removed after the execution of each pass.

The following layer shall be deposited after drying. After each cooling operation, the test piece shall be placed in front of the welder in the opposite direction so as to make the end of deposition of the previous layer coincide with the beginning of deposition of the following layer.

The metal shall be deposited in successive layers by juxtaposing rectilinear layers, the width and length of which are defined in this International Standard.

The building-up shall continue until the weld pad size indicated in clause 4 is obtained.

4 Weld pad size

The minimum dimensions of the weld pad, made up of at least eight layers, are given in table 2.

Table 2

Electrode diameter mm	Weld pad minimum dimensions mm
1,6 — 2 and 2,5	30 × 30 × 13
3,2 — 4 and 5	40 × 40 × 16
6,3	55 × 55 × 20

5 Sampling

The surface oxide film shall be removed by grinding or milling the sampling zone.

The minimum milling distance (dimension *A* in the figure or at least four layers) from the plate surface, as a function of the diameter of the electrode core, shall be in accordance with the values indicated in table 3.

Table 3

Electrode diameter mm	Minimum milling distance <i>A</i> from the plate surface mm
1,6 — 2 and 2,5	8
3,2 — 4 and 5	10
6,3	12

6 Analysis of weld pad

6.1 The chip sampling for the analysis shall be carried out by dry milling slantwise in relation to the plate surface, so as to obtain, in a minimum time, a sampling of all the upper layers of the weld pad over their whole length.

6.2 If spectral methods are used for analyses, the plane obtained by machining the weld pad shall be used, in accordance with the specifications laid down in clause 5. At least three impacts shall be performed, distributed on a diagonal of the inclined plane. The results shall correspond to the averaged value of the three impact readings.

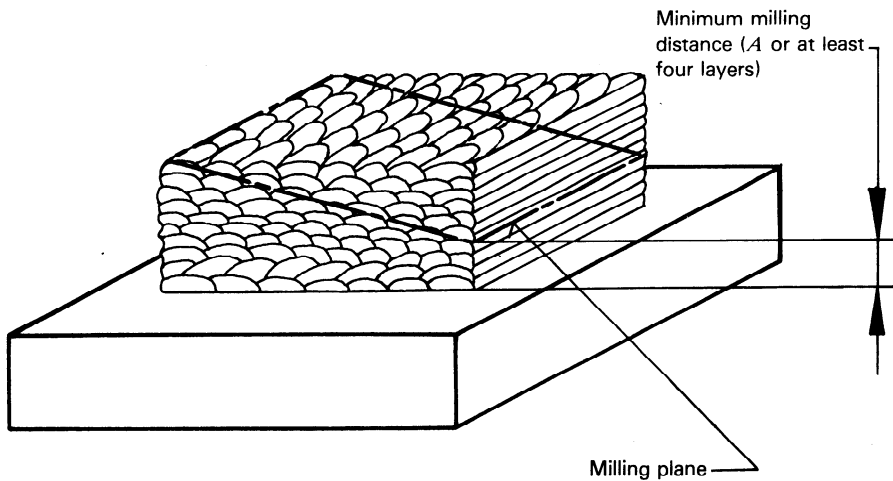


Figure — Sampling method