



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 6847:2019**  
**01-december-2019**

---

**[Not translated]**

Welding consumables - Deposition of a weld metal pad for chemical analysis (ISO/DIS 6847:2019)

Schweißzusätze - Auftragung von Schweißgut zur Bestimmung der chemischen Zusammensetzung (ISO/DIS 6847:2019)

Produits consommables pour le soudage - Exécution d'un dépôt de métal fondu pour l'analyse chimique (ISO/DIS 6847:2019)

Ta slovenski standard je istoveten z: **prEN ISO 6847**

---

**ICS:**

25.160.20      Potrošni material pri varjenju      Welding consumables

**oSIST prEN ISO 6847:2019**

**en,fr,de**



# DRAFT INTERNATIONAL STANDARD

## ISO/DIS 6847

IIW

Secretariat: ISO secretariat

Voting begins on:  
2019-10-23Voting terminates on:  
2020-01-15

## Welding consumables — Deposition of a weld metal pad for chemical analysis

*Produits consommables pour le soudage — Exécution d'un dépôt de métal fondu pour l'analyse chimique*

ICS: 25.160.20

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN ISO 6847:2020

<https://standards.iteh.ai/catalog/standards/sist/5c0efb6c-b624-4a08-a793-887fbe8d4a71/sist-en-iso-6847-2020>

Member bodies are requested to consult relevant national interests in ISO/TC 44/SC 3 before casting their ballot to the e-Balloting application.

This document is circulated as received from the committee secretariat.

### ISO/CEN PARALLEL PROCESSING

This draft International Standard is submitted to all ISO member bodies for voting, as a standard prepared by an international standardizing body in accordance with Council Resolution 42/1999. The proposer, the International Institute of Welding (IIW), has been recognized by the ISO Council as an international standardizing body for the purpose of Council Resolution 42/1999.

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.



Reference number  
ISO/DIS 6847:2019(E)

© ISO 2019

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN ISO 6847:2020

<https://standards.iteh.ai/catalog/standards/sist/5c0efb6c-b624-4a08-a793-887fbe8d4a71/sist-en-iso-6847-2020>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Base metal</b> .....	<b>1</b>
4.1 Type.....	1
4.2 Dimensions.....	1
4.3 Surface condition.....	1
<b>5 Method for preparing the weld metal pad</b> .....	<b>2</b>
5.1 Drying of the welding consumables.....	2
5.2 Welding position.....	2
5.3 Type of current.....	2
5.4 Welding conditions.....	2
5.5 Welding method.....	2
5.5.1 General.....	2
5.5.2 Covered electrodes.....	3
5.5.3 Solid wires and rods, strips, and tubular cored wires and rods.....	3
<b>6 Weld metal pad size</b> .....	<b>4</b>
<b>7 Sampling</b> .....	<b>4</b>

SIST EN ISO 6847:2020

<https://standards.iteh.ai/catalog/standards/sist/5c0efb6c-b624-4a08-a793-887fbe8d4a71/sist-en-iso-6847-2020>

## ISO/DIS 6847:2019(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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by IIW, *International Institute of Welding*, Commission II, *Arc welding and Filler Metals*.

Any feedback, question or request for official interpretation related to any aspect of this document should be directed to IIW via your national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

This fourth edition cancels and replaces the third edition (ISO 6847:2013), which has been technically revised.

The main changes compared to the previous edition are as follows:

- Provisions for strip-flux combinations have been added for use with cladding with the submerged arc welding and electroslag welding processes.

## Introduction

The first edition of this document, ISO 6847:1985, addressed only the deposition of a weld metal pad for chemical analysis using covered electrodes for manual arc welding. This pad preparation was expensive to execute. IIW Commission II conducted testing of several methods of weld pad preparation that were less costly to execute than that of ISO 6847:1985 and yet produced equivalent results. Further, these methods were applicable to solid wires for gas shielded welding, to tubular cored wires for arc welding with or without gas shielding, and to wires and fluxes for submerged arc welding, as well as being applicable to covered electrodes. Accordingly, subsequent revisions (ISO 6847:2000 and ISO 6847:2013) simplified weld pad preparation and broadened the range of welding processes and filler metals. This current revision (ISO 6847:2019) adds the use of strip with the submerged arc welding and electroslag welding processes.

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

[SIST EN ISO 6847:2020](https://standards.iteh.ai/catalog/standards/sist/5c0efb6c-b624-4a08-a793-887fbe8d4a71/sist-en-iso-6847-2020)

<https://standards.iteh.ai/catalog/standards/sist/5c0efb6c-b624-4a08-a793-887fbe8d4a71/sist-en-iso-6847-2020>





# Welding consumables — Deposition of a weld metal pad for chemical analysis

## 1 Scope

This document specifies the procedure to be used for deposition of a weld metal pad for chemical analysis. This document applies to deposition of a weld metal pad by use of covered electrodes, wire electrodes for gas shielded metal arc welding, tubular cored electrodes for gas shielded metal arc welding and for non-gas shielded metal arc welding, solid rods and tubular cored rods for gas tungsten arc welding, and wire-flux and strip-flux combinations for submerged arc welding or electroslag welding. This document is applicable to welding consumables for non-alloy and fine grain steels, high strength steels, creep-resisting steels, stainless and heat-resisting steels, nickel and nickel alloys, and copper and copper alloys.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6947, *Welding and allied processes — Welding positions*

ISO 14175, *Welding consumables — Gases and gas mixtures for fusion welding and allied processes*

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

## 4 Base metal

### 4.1 Type

The base metal shall have a composition similar to that of the deposited metal or be a weldable carbon manganese structural steel with a carbon content of less than 0,2 %.

### 4.2 Dimensions

The minimum dimensions of the base metal are given in [Table 1](#).

### 4.3 Surface condition

The surface of the base metal on to which the weld metal is to be deposited shall be cleaned by grinding or other means in order to remove any rust, scale, grease, or paint.

**Table 1 — Minimum dimensions of the base metal**

Dimensions in millimetres

Welding consumables	Size of welding consumables	Plate size <sup>a</sup>	
		Length	Thickness
Covered electrodes; solid rods and tubular cored rods for gas tungsten arc welding	≥1,6 but ≤4 >4 but ≤8	55 65	10
Wire electrodes for gas shielded arc welding	≥0,6 but ≤2,5	100	10
Tubular cored electrodes for gas shielded or non-gas shielded arc welding	≥0,6 but ≤4	100	10
Wire-flux combinations for submerged arc welding	≥1,2 but ≤4 >4 but ≤6,4	200 300	15
Cladding (both strip-flux and wire-flux for submerged arc and electroslag processes)	≥15	300	25

<sup>a</sup> Plate width should be appropriate for the pass sequence method chosen (see [Figure 1](#)).

## 5 Method for preparing the weld metal pad

### 5.1 Drying of the welding consumables

Drying of the welding consumables (covered electrodes, fluxes for submerged arc welding or electroslag welding) shall be performed using conditions indicated by the manufacturer. Tubular cored electrodes on metal supports may be dried in accordance with the manufacturer's recommendations.

### 5.2 Welding position

The weld metal pad shall be welded in the flat position (PA position in ISO 6947).

### 5.3 Type of current

The weld metal shall be deposited using the type of current (and, if appropriate, the polarity) indicated by the manufacturer. However, if both DC operation and AC operation are claimed, then the test shall be performed using AC.

### 5.4 Welding conditions

The welding conditions used, such as current, voltage, welding speed, etc., shall be in accordance with the limits specified in the relevant standard. If the welding conditions are not specified in the relevant standard, each pass shall be welded with a welding current of 70 % to 90 % of the maximum current indicated by the manufacturer. The welding conditions used to produce the weld metal pad shall be reported.

### 5.5 Welding method

#### 5.5.1 General

Various methods for building up a weld metal pad have been shown to be acceptable and the weld metal pad shall be prepared using one of the methods shown in [Figure 1](#). After the welding of each pass, the test piece may be cooled in water for about 30 s, then dried sufficiently before proceeding with the next pass. The slag shall be removed from each pass. The welding shall be performed by alternating the direction of welding for each layer.