

## International **Standard**

## **ISO 11970**

Specification and qualification of welding procedures for production welding of steel and nickel-base castings iTeh Standards

Third edition 2025-11

Descriptif et qualification de modes opératoires de soudage pour le soudage de production des pièces moulées en acier et à base de nickel **Document Preview** 

https://standards.iteh.ai/catalog/standards/iso/c9d19216-09e2-49b1-8852-77c4e4cce3ff/iso-11970-2025

# iTeh Standards (https://standards.iteh.ai) Document Preview

<u> ISO 11970:2025</u>

https://standards.iteh.ai/catalog/standards/iso/c9d19216-09e2-49b1-8852-77c4e4cce3ff/iso-11970-2025



#### COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

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 Email: copyright@iso.org

Website: <u>www.iso.org</u> Published in Switzerland

## ISO 11970:2025(en)

Contents			Page
Fore	word		iv
Intro	oductio	011	<b>v</b>
1		D <b>e</b>	
_	-		
2		native references	
3		ns, definitions and symbols	
	3.1	Terms and definitions	
4	Prel	iminary welding procedure specification (pWPS)	2
5	Weld	ling procedure qualification	2
6	Test	piece	2
	6.1	General	
	6.2	Shape and dimensions of test piece	
	6.3	Welding of the test piece	3
7	Exar	nination and testing	4
	7.1	Extent of testing	
	7.2	Location and cutting of test specimens	
	7.3	Non-destructive testing	
	7.4	Destructive test	
		7.4.1 Transverse (to weld groove) tensile test	
		7.4.3 Micro examination Standard Research Standard Research Resear	6
		7.4.5 Hardness test	7
	7.5	Qualification and retesting	7
	7.6	Welder qualification  ge of qualification  general Preview	8
8	Rans	ge of qualification Document Preview	8
	8.1	General	8
	8.2	Related to the manufacturer	8
	8.3	nd Related to the material dands is 0/09419216-0902-4911-8852-770404000316/iso-11970-20	0258
		8.3.1 Parent metal — Grouping system for cast steel grades	8
	0.4	8.3.2 Parent metal thickness	
	8.4	Common to all welding procedures 8.4.1 Welding process	
		8.4.2 Welding positions	
		8.4.3 Type of joint	
		8.4.4 Filler metal	
		8.4.5 Type of current	
		8.4.6 Heat input	
		8.4.7 Preheat temperature	
		8.4.8 Interpass temperature	
	0.5	8.4.9 Post-weld heat treatment	
	8.5	Specific to process	
9		ding procedure qualification record (WPQR)	
Ann	<b>ex A</b> (in	formative) Record form (WPQR) welding procedure qualification — Test certificate	13
Ann	ex B (no	ormative) Details of weld testing	14
Rihli	iogranl	hv.	17

#### ISO 11970:2025(en)

#### 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 document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="https://www.iso.org/directives">www.iso.org/directives</a>).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <a href="https://www.iso.org/patents">www.iso.org/patents</a>. ISO shall not be held responsible for identifying any or all such patent rights.

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 <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 11, *Steel castings*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 459/SC 11, *Steel castings and forgings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 11970:2016), which has been technically revised. ISO 11970:2025

https://standards.iteh.ai/catalog/standards/iso/c9d19216-09e2-49b1-8852-77c4e4cce3ff/iso-11970-2025 The main changes are as follows:

- appropriate reference standards have been added;
- minor grammatical changes were made.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <a href="https://www.iso.org/members.html">www.iso.org/members.html</a>.