
**Welding — Recommendations for welding
of metallic materials —**

Part 3:
Arc welding of stainless steels

*Soudage — Recommandations pour le soudage des matériaux
métalliques —*

Partie 3: Soudage à l'arc des aciers inoxydables



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Printed in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. 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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this part of ISO/TR 17671 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 17671-3 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Unification of requirements in the field of metal welding*.

ISO/TR 17671 consists of the following parts, under the general title *Welding — Recommendations for welding of metallic materials*:

- *Part 1: General guidance for arc welding*
- *Part 2: Arc welding of ferritic steels*
- *Part 3: Arc welding of stainless steels*
- *Part 4: Arc welding of aluminium and aluminium alloys*

Introduction

This part of ISO/TR 17671 is being issued with several annexes in order that it may be extended to cover the different types of steel which will be produced to all the International steel standards for stainless steels.

When this part of ISO/TR 17671 is referenced for contractual purposes, the ordering authority should state the need for compliance with the document and such other annexes as are appropriate.

This part of ISO/TR 17671 gives general guidance for the satisfactory production and control of welding and details the possible detrimental phenomena that may occur with advice on methods by which they may be avoided. It is generally applicable to all stainless steels and is appropriate regardless of the type of fabrication involved, although the application standard may have additional requirements. Permissible design stresses in welds, methods of testing and acceptance levels are not included because they depend on the service conditions of fabrication. These details should be obtained from the design specification.

This part of ISO/TR 17671 contains additional details for fusion welding of stainless steels and should be read in conjunction with the general recommendations in ISO/TR 17671-1.

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Welding — Recommendations for welding of metallic materials —

Part 3:

Arc welding of stainless steels

1 Scope

This part of ISO/TR 17671 gives general recommendations for the fusion welding of stainless steels. Specific details relevant to austenitic, austenitic-ferritic, ferritic and martensitic stainless steels are given in annexes A to D.

2 References

ISO 3581, *Welding consumables — Covered electrodes for manual metal arc welding of stainless and heat-resisting steels — Classification*

ISO 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections*

ISO 8249, *Welding — Determination of Ferrite Number (FN) in austenitic and duplex ferritic-austenitic Cr-Ni stainless steel weld metals*

ISO 9692-1, *Welding and allied processes — Recommendations for joint preparation — Part 1: Manual metal-arc welding, gas-shielded metal-arc welding and gas welding of steels*

ISO 9956-2, *Specification and approval of welding procedures for metallic materials — Part 2: Welding procedure specification for arc welding*

ISO 14175, *Welding consumables — Shielding gases for arc welding and cutting*

ISO 14343, *Welding consumables — Wire electrodes, wires and rods for arc welding of stainless and heat resisting steels — Classification*

ISO/TR 15608:2000, *Welding — Guidelines for a metallic materials grouping system*

ISO/TR 17671-1, *Welding — Recommendations for welding of metallic materials — Part 1: General guidance for arc welding*

EN 10088-1:1995, *Stainless steels — Part 1: List of stainless steels*

EN 12073, *Welding consumables — Tubular cored electrodes for metal arc welding with or without a gas shield of stainless and heat resisting steels — Classification*