
**Resistance welding — Procedures for
determining the weldability lobe for
resistance spot, projection and seam
welding**

*Soudage par résistance — Modes opératoires pour la détermination du
domaine de soudabilité pour le soudage par résistance par points, par
bossages et à la molette*



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

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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.

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.

ISO 14327 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Unification of requirements in the field of metal welding*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read “this European Standard...” to mean “...this International Standard...”.

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Foreword

This document (EN ISO 14327:2004) has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2004, and conflicting national standards shall be withdrawn at the latest by October 2004.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard enables the weldability lobe to be determined for resistance spot, projection and seam welding. This standard does not invalidate procedures for the determination of the weldability lobe or their approval documents in current use which complied with the national or International Standards or regulations existing at that time, provided the intent of the technical requirement is satisfied and the specified application, its performance and equipment with which it is performed remain unchanged.

When this standard is referenced for contractual purposes, all questions relating to the specification and implementation of welding procedures should be agreed between the contacting parties at the time of enquiry or at the contract stage.

It has been assumed in this standard that the execution of its provisions is entrusted to appropriately trained, skilled and experienced personnel.

For the quality of welded structures the relevant part of EN ISO 14554 should be applicable. The specification of procedures should follow guidelines as in EN ISO 15609-5.

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1 Scope

This European Standard specifies procedures for determining the weldability lobe for producing quality welds. The tests are used in particular to determine the weldability lobe for coated/uncoated steels, stainless steels and aluminium and its alloys but may also be used for other metallic materials.

The aim of this procedure is to allow determination of the range of welding parameters which give rise to an acceptable weld quality as defined within precise limits. The procedure can be used to determine:

- a) The influence of electrode material, electrode shape and dimensions on the available welding range for a particular material and welding machine.
- b) The influence of material type and thickness on the available welding range when using a particular combination of welding electrodes and welding machine.
- c) The influence of welding machine type, or electrode cooling on the available welding range for a particular material using a particular electrode shape.
- d) The available welding range in a production situation.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 14329:2003, *Resistance welding — Destructive tests of welds — Failure types and geometric measurements for resistance spot, seam and projection welds* (ISO 14329:2003).

EN ISO 15609-5:2004, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 5: Resistance welding* (ISO 15609-5:2004).

ISO 669:2000, *Resistance welding — Resistance welding equipment — Mechanical and electrical requirements*.

ISO 693, *Dimensions of seam welding wheel blanks*.

ISO 5182, *Welding — Materials for resistance welding electrodes and ancillary equipment*.

EN 25184, *Straight resistance spot welding electrodes* (ISO 5184:1979).

EN 25821, *Resistance spot welding electrode caps* (ISO 5821:1979).

ISO 5830, *Resistance spot welding — Male electrode caps*.

EN 28167, *Projections for resistance welding* (ISO 8167:1989).

ISO/DIS 14373, *Resistance welding — Procedure for spot welding of uncoated and coated low carbon steels*.