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I.S. EN ISO 5821:2009

# Resistance welding - Spot welding electrode caps (ISO 5821:2009)

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**NSAI**  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E [standards@nsai.ie](mailto:standards@nsai.ie)  
W [NSAI.ie](http://NSAI.ie)

**Sales:**  
T +353 1 857 6730  
F +353 1 857 6729  
W [standards.ie](http://standards.ie)

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**EN ISO 5821**

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English Version

## Resistance welding - Spot welding electrode caps (ISO 5821:2009)

Soudage par résistance - Embouts amovibles de pointes  
d'électrodes pour soudage par points (ISO 5821:2009)

Widerstandsschweißen - Punktschweiß-Elektrodenkappen  
(ISO 5821:2009)

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## **Foreword**

The text of ISO 5821:2009 has been prepared by Technical Committee ISO/TC 44 “Welding and allied processes” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 5821:2009 by Technical Committee CEN/TC 121 “Welding” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

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### **Endorsement notice**

The text of ISO 5821:2009 has been approved by CEN as a EN ISO 5821:2009 without any modification.

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STANDARD**

**ISO  
5821**

Second edition  
2009-02-01

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**Resistance welding — Spot welding  
electrode caps**

*Soudage par résistance — Embouts amovibles de pointes d'électrodes  
pour soudage par points*



Reference number  
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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 2.

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 5821 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 6, *Resistance welding and allied mechanical joining*.

This second edition cancels and replaces the first edition (ISO 5821:1979) which has been technically revised.

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 6 via your national standards body, a complete listing of which can be found at [www.iso.org](http://www.iso.org).



# Resistance welding — Spot welding electrode caps

## 1 Scope

This International Standard specifies the dimensions and tolerances of resistance spot welding electrode caps, where a female taper (see ISO 1089) is used to fix the cap to an electrode adaptor (see ISO 5183-1 and ISO 5183-2).

It applies only to electrode caps for which the electrode force,  $F_E$ , given for diameter  $d_1$  in Table 2 and Table A.2 is not exceeded.

## 2 Normative references

The following referenced documents are indispensable for the application 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 1089, *Electrode taper fits for spot welding equipment — Dimensions*

ISO 5182, *Resistance welding — Materials for electrodes and ancillary equipment*

ISO 5183-1, *Resistance welding equipment — Electrode adaptors, male taper 1:10 — Part 1: Conical fixing, taper 1:10*

ISO 5183-2, *Resistance welding equipment — Electrode adaptors, male taper 1:10 — Part 2: Parallel shank fixing for end-thrust electrodes*

ISO 17677-1, *Resistance welding — Vocabulary — Part 1: Spot, projection and seam welding*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17677-1 apply.

## 4 Dimensions and tolerances

The dimensions shall be as given in Table 1 and Figure 1 for taper 1:10 and as given in Annex A for taper 1:9,6. ISO 1089 shall be used to provide the taper dimensions. Tolerances shall be as given in Table 3.

To enlarge the application potential of this International Standard, common variations of the base types are specified in Table 1. Preferred values are printed in bold-face.

Depending on the working stroke of the guns, two additional lengths,  $l_1$ , are offered to allow optimized lifetimes of the caps using tip dressers.

$D_2$  and  $R_1$  allow options to adapt the contact areas to different electrode indentations and nugget sizes.

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