



SLOVENSKI STANDARD
oSIST prEN ISO 1089:2021
01-marec-2021

Uporovno varjenje - Nasedi elektrod pri napravah za elektrouporovno točkovno varjenje - Mere (ISO/DIS 1089:2021)

Resistance welding equipment - Electrode taper fits for spot welding equipment - Dimensions (ISO/DIS 1089:2021)

Widerstandsschweißeinrichtungen - Elektrodensitze für Punktschweißeinrichtungen - Maße (ISO/DIS 1089:2021)

Emmanchements coniques d'électrodes pour machines à souder par points - Dimensions (ISO/DIS 1089:2021)

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Ta slovenski standard je istoveten z: prEN ISO 1089

ICS:

25.160.30 Varilna oprema Welding equipment

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DRAFT INTERNATIONAL STANDARD

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Resistance welding equipment — Electrode taper fits for spot welding equipment – Dimensions

ICS: 25.160.30

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ISO/CEN PARALLEL PROCESSING



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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Dimensions	1
5 Designation	1
6 Marking	2

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ISO/DIS 1089:2021(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).

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).

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.

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

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 www.iso.org/members.html.

Official interpretations of TC 44 documents, where they exist, are available from this page: <https://committee.iso.org/sites/tc44/home/interpretation.html>.

This second edition cancels and replaces the first edition (ISO 1089:1980) which has been technically revised.

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

- this document has been updated to the latest ISO format and style
- this document contains multiple editorial improvements
- a new Table 4 has been added giving taper dimension tolerances for type C tapers

Resistance welding equipment — Electrode taper fits for spot welding equipment – Dimensions

1 Scope

This document specifies the taper dimensions and tolerances of electrode taper fits for spot welding electrode caps, electrode adaptors, electrode holders and similar parts, where the electrode force F_{\max} given for diameter d_1 in Tables 1, 2 and 3 is not exceeded.

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

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

3 Terms and definitions

No terms and definitions are listed in this document.

The list below is always included after each option:

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 Dimensions

The dimensions shall be in accordance with Figure 1 and Tables 1, 2 and 3. Taper dimension tolerances for type C are given in Table 4.

5 Designation

The designation for electrode taper fits that comply with the requirements of ISO 5183-1 or ISO 5183-2 and shall comprise the following information in the order given:

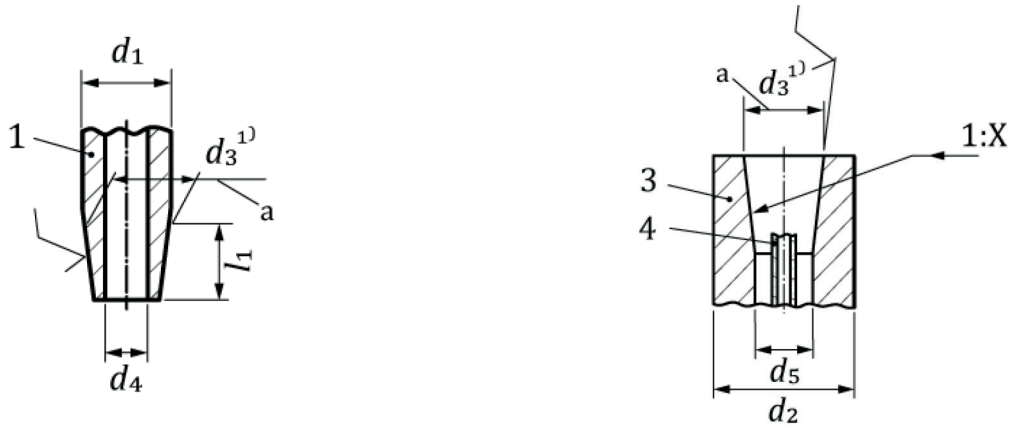
- The number of this document (ISO 1089)
- Type of electrode taper fit, A, B or C (see Figure 1 and Tables 1, 2 and 3)
- Dimension, d_1

Example 1 designation of an electrode taper fit type A and $d_1 = 16$ mm :

ISO 1089 - A 16

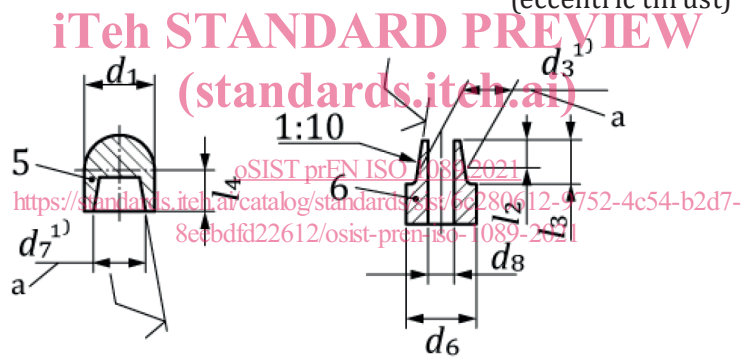
6 Marking

Electrode holders with an electrode taper fit in accordance with this document shall be marked with the designation (without the number of this document), for example A16.



a) Type A – for spot welding electrodes (straight thrust)

b) Type B – for spot welding electrodes (eccentric thrust)



c) Type C – for electrode caps

Key

- | | | | |
|---|---------------------------------------|---|-------------------|
| 1 | spot welding electrode | 4 | cooling pipe |
| 2 | gauge | 5 | electrode cap |
| 3 | electrode adaptor or electrode holder | 6 | electrode adaptor |

NOTE 1 d_3 and d_7 are gauge dimensions at the datum line of the taper.

NOTE 2 The size of the cooling pipe should be such that the cross-sectional area of its bore is approximately equal to the area of the annulus formed between its outside circumference and the cooling hole in the electrode.

Figure 1 — Taper types

Table 1 — Dimensions for type A

Dimensions in millimetres

Electrode fit	Taper 1 : x	d_1	d_2	d_3	d_4	d_5	$l_1 \pm 0,5$	Electrode force ^a F_{\max} kN
						straight thrust		
A 10	1 : 10	10	16 20 25	9,8	5,5	8,5	13	2,5
A 13		13	20 25 31,5 40	12,7	7,5	11	16	4
A 16		16	25 31,5 40	15,5	8,5	13,5	20	6,3
A 20		20	31,5 40	19	10,5	16,5	25	10
A 25		25	40	24,5	13,5	21,5	31,5	16
A 32	1 : 5	32	50	31	14	23	40	25
A 40		40	63	39	16	29	50	40

^a for information only

Table 2 — Dimensions for type B

Dimensions in millimetres

Electrode fit	Taper 1 : x	d_1	d_2	d_3	d_4	d_5	$l_1 \pm 0,5$	Electrode force ^a F_{\max} N
						eccentric loading		
B 10	1 : 10	10	16 20 25	9,8	5,5	–	–	2,5
B 13		13	20 31,5 40	12,7	7,5	10	25	4
B 16		16	25 31,5 40	15,5	8,5	12,5	31,5	6,3
B 20		20	31,5 40	19	10,5	15	40	10
B 25		25	40	24,5	13,5	19,5	50	16
B 32	1 : 5	32	50	31	14	–	–	25
B 40		40	63	39	16	–	–	40

^a for information only

Table 3 — Dimensions for type C

Dimensions in millimetres

Electrode fit	d_1	d_6	d_7	d_8	$l_2 \pm 0,5$	l_3 $l_4 + 0,5$ 0		Electrode force ^a F_{max} kN
						straight thrust		
C 13	13	13	10	6,5	6,5	10	8	2,5
C 16	16	16	12	8	8	13	9,5	4
C 20	20	20	15	10,5	10	15	11,5	6,3

^a for information only

Table 4 — Taper Dimension Tolerances for type C

Electrode fit	Taper Angle	Angle Tolerance	Taper Gauge Diameter	Diameter Tolerance
	d°m's"	d°m's"	mm	mm
C 13	1:10 / 2°51'45"	+0 / -0°6'0"	10	+0 / -0.1
C 16	1:10 / 2°51'45"	+0 / -0°6'0"	12	+0 / -0.1
C 20	1:10 / 2°51'45"	+0 / -0°6'0"	15	+0 / -0.1

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