SLOVENSKI STANDARD
SIST EN ISO 19285:2018

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Neporušitveno preskušanje zvarnih spojev - Ultrazvočno preskušanje s faznim krmiljenjem (PAUT) - Stopnje sprejemljivosti (ISO 19285:2017)

Non-destructive testing of welds - Phased array ultrasonic testing (PAUT) - Acceptance levels (ISO 19285:2017)

Zerstörungsfreie Prüfung von Schweißverbindungen - Ultraschallprüfungen mit Phased-Arrays (PAUT) - Zulässigkeitsgrenzen (ISO 19285:2017)

Essais non destructifs des assemblages soudés - Technique ultrasons multi-éléments (PAUT) - Niveaux d'acceptation (ISO 19285:2017)

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25.160.40	Varjeni spoji in vari	Welded joints and welds

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English Version

Non-destructive testing of welds - Phased array ultrasonic testing (PAUT) - Acceptance levels (ISO 19285:2017)

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European foreword

This document (EN ISO 19285:2017) has been prepared by Technical Committee ISO/TC 44 “Welding and allied processes” in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” 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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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The text of ISO 19285:2017 has been approved by CEN as EN ISO 19285:2017 without any modification.

INTERNATIONAL STANDARD

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Non-destructive testing of welds — Phased array ultrasonic testing (PAUT) — Acceptance levels

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Foreword

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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).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

Requests for official interpretations of any aspect of this document should be directed to the Secretariat of ISO/TC 44/SC 5 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

Non-destructive testing of welds — Phased array ultrasonic testing (PAUT) — Acceptance levels

1 Scope

This document specifies acceptance levels for the phased array ultrasonic testing technique (PAUT) of full penetration welds in ferritic steels of minimum thickness of 6 mm which correspond to the quality levels of ISO 5817.

These acceptance levels are applicable to indications classified in accordance with ISO 13588.

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 5577, *Non-destructive testing — Ultrasonic testing — Vocabulary*

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

ISO 11666, *Non-destructive testing of welds — Ultrasonic testing — Acceptance levels*

ISO 13588, *Non-destructive testing of welds — Ultrasonic testing — Use of automated phased array technology*

ISO 15626, *Non-destructive testing of welds — Time-of-flight diffraction technique (TOFD) — Acceptance levels*

ISO 17640, *Non-destructive testing of welds — Ultrasonic testing — Techniques, testing levels, and assessment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5577 and ISO 13588 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Symbols

h	height
h_g	sum of the heights of the individual indications plus the distance between them
l	length
l_g	sum of the lengths of the individual indications plus the distance between them
t	thickness

5 Acceptance levels

For the evaluation, three different acceptance levels are defined. The relation between these acceptance levels and the quality levels as mentioned in ISO 5817 are given in Table 1.

Table 1 — Related levels for phased array ultrasonic testing

Quality level according to ISO 5817	Testing level according to ISO 13588	Acceptance level according to this document
C, D	A	3
B	B	2
By agreement	C	1
Special application	D	By agreement
NOTE Acceptance criteria for acceptance level 1 are only specified for evaluation based on length and height.		

6 Evaluation of indications

Indications detected when applying ISO 13588 shall be evaluated as specified in the test procedure either by:

a) length and height, then Clause 7 and Clause 9 shall be applied;

b) or by length and maximum amplitude, then Clause 8 and Clause 10 shall be applied.

7 Determination of length and height

7.1 General

The size of a discontinuity is determined by its length and height.

7.2 Determination of length

The length of an indication shall be measured as described in ISO 11666, using the focal law which provides the maximum amplitude.

If TOFD is used, the length of an indication shall be measured as described in ISO 15626.

In any other case, testing level D of Table 1 is applicable.

7.3 Determination of height

7.3.1 General

For indications displaying varying height along their length, the height shall be determined at the scan position of maximum extent.

7.3.2 Using diffracted signals

If diffracted signals are observed, they shall be used to determine height. The height is determined using either:

— two diffracted signals observed from the same discontinuity (upper and lower tip);

— one diffracted signal and a surface signal observed from the same discontinuity;

— one diffracted signal and the known wall thickness for root connected discontinuities;

