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Non-destructive testing of welds – Time-of-flight diffraction technique (TOFD) – Acceptance levels (ISO 15626:2018)



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Denna standard ersätter SS-EN ISO 15626:2013, utgåva 1

The European Standard EN ISO 15626:2018 has the status of a Swedish Standard. This document contains the official version of EN ISO 15626:2018.

This standard supersedes the SS-EN ISO 15626:2013, edition 1

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EUROPEAN STANDARD

EN ISO 15626

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2018

ICS 25.160.40

Supersedes EN ISO 15626:2013

English Version

**Non-destructive testing of welds - Time-of-flight
diffraction technique (TOFD) - Acceptance levels
(ISO 15626:2018)**

Essais non destructifs des assemblages soudés -
Technique de diffraction des temps de vol (méthode
TOFD) - Niveaux d'acceptation (ISO 15626:2018)

Zerstörungsfreie Prüfung von Schweißverbindungen
- Beugungslaufzeittechnik (TOFD) -
Zulässigkeitsgrenzen (ISO 15626:2018)

This European Standard was approved by CEN on 14 July 2018.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (EN ISO 15626:2018) 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of an identical text or by endorsement, at the latest by February 2019, and conflicting national standards shall be withdrawn at the latest by February 2019.

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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Endorsement notice

The text of ISO 15626:2018 has been approved by CEN as EN ISO 15626:2018 without any modification.

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

1 Scope

This document specifies acceptance levels for the time-of-flight diffraction technique (TOFD) of full penetration welds in ferritic steels from 6 mm up to 300 mm thickness which correspond to the quality levels of ISO 5817.

These acceptance levels are applicable to indications classified in accordance with ISO 10863.

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*

3 Terms and definitions

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

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 <https://www.electropedia.org/>

3.1

embedded discontinuity

discontinuity within the volume of the material, separated from the surfaces

3.2

surface-breaking discontinuity

discontinuity connected to the near (scanning) surface or far (opposite) surface

4 Symbols

h height of an indication

l length of an indication

t nominal wall thickness in accordance with construction drawing or dimension table

5 Relation between quality levels and acceptance levels

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 — Acceptance levels

Quality level according to ISO 5817	Examination level according to ISO 10863	Acceptance level
B (Stringent)	C	1
C (Intermediate)	at least B	2
D (Moderate)	at least A	3

6 Definition and determination of length and height

6.1 General

The size of a discontinuity is described by the length and height of its indication.

Length is defined by the difference of the *x*-coordinates of the indication.

The height is defined as the maximum difference of the *z*-coordinates at any given *x*-position.

6.2 Determination of length

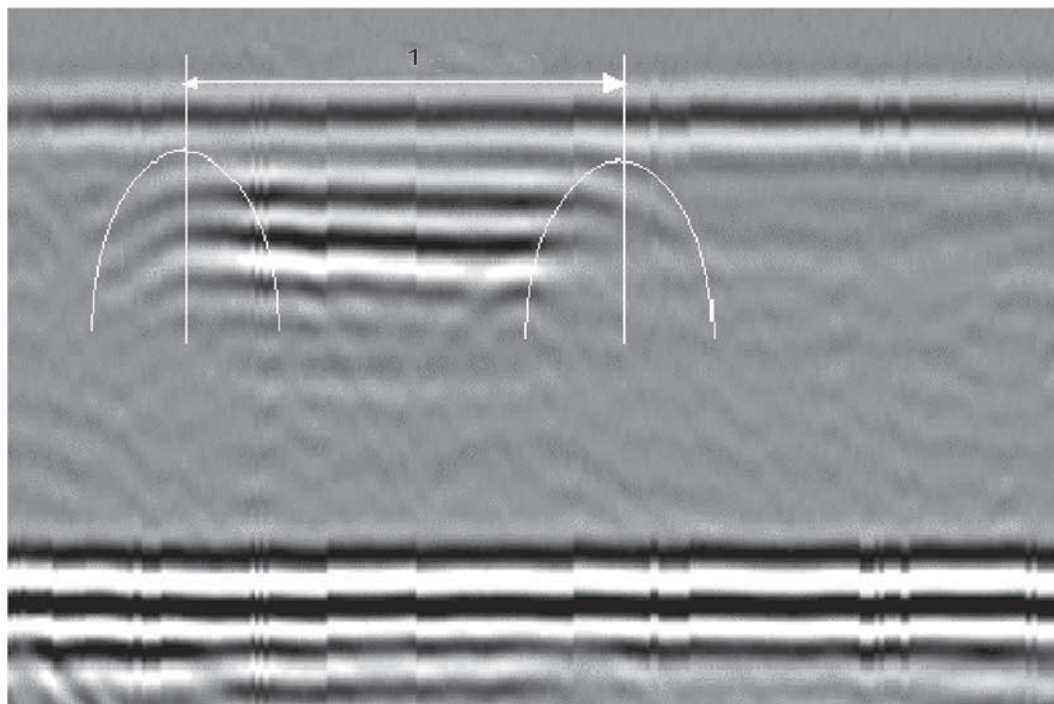
6.2.1 General

Depending on the type of indication, one of the techniques for length sizing according to [6.2.2](#) or [6.2.3](#) shall be applied.

6.2.2 Length sizing of elongated straight indications

This type of indication does not change significantly in the through-wall direction.

A hyperbolic cursor is fitted to the indication. Assuming the discontinuity is elongated and has a finite length, this is only possible at each end. The distance moved between acceptable fits at each end of the indication is taken to represent the length of the discontinuity (see [Figure 1](#)).

**Key**

1 length of indication

Figure 1 — Length sizing by fitting arc-shaped cursors

6.2.3 Length sizing of elongated curved indications

This type of indication does change significantly in the through-wall direction.

A hyperbolic cursor is positioned at either end of the indication at a time delay of one third of the indication penetration. The distance moved between the cursor positions at each end of the indication is taken to represent the length of the discontinuity (see [Figure 2](#)).