
**Titanium pipes and tubes —
Non-destructive testing —**

**Part 2:
Ultrasonic testing for the detection of
longitudinal imperfections**

Canalisations et tubes en titane — Essai non destructif —

*Partie 2: Contrôle par ultrason pour la détection des défauts
longitudinaux*



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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 25902-2 was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 11, *Titanium*.

ISO 25902 consists of the following parts, under the general title *Titanium pipes and tubes — Non-destructive testing*:

- Part 1: *Eddy-current examination*
- Part 2: *Ultrasonic testing for the detection of longitudinal imperfections*

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Titanium pipes and tubes — Non-destructive testing —

Part 2:

Ultrasonic testing for the detection of longitudinal imperfections

1 Scope

This part of ISO 25902 specifies an ultrasonic testing method for detecting longitudinal imperfections in titanium seamless tubes or welded tubes.

This part of ISO 25902 also applies to titanium alloy tubes.

In this part of ISO 25902

- a) the minimum wall thickness is 0,3 mm,
- b) only rectangular notches are permitted as reference reflectors, and
- c) the minimum notch depth is 0,08 mm.

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 9712, *Non-destructive testing — Qualification and certification of personnel*

ISO 10375, *Non-destructive testing — Ultrasonic inspection — Characterization of search unit and sound field*

ISO 18175, *Non-destructive testing — Evaluating performance characteristics of ultrasonic pulse-echo testing systems without the use of electronic measurement instruments*

3 General

3.1 Applicable dimension range

The range of the applicable dimensions of a tube shall be 10 mm to 150 mm outside diameter and 0,3 mm to 10 mm thickness. The ratio of thickness to outside diameter shall be less than or equal to 0,2 (20 %).

3.2 Testing technique

The test shall be carried out using an ultrasonic angle beam technique, effected by rotating the ultrasonic transducer or the tube.

The ultrasonic testing system shall be an immersion technique (including a local immersion technique).