
**Destructive tests on welds in metallic
materials — Hot cracking tests for
weldments — Arc welding processes —**

**Part 3:
Externally loaded tests**

*Essais destructifs des soudures sur matériaux métalliques — Essais de
fissuration à chaud des assemblages soudés — Procédés de soudage
à l'arc —*

Partie 3: Essais sur éprouvette soumise à une charge extérieure



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Foreword

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ISO/TR 17641-3 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "...this CEN Report..." to mean "...this Technical Report...".

ISO 17641 consists of the following parts, under the general title *Destructive tests on welds in metallic materials — Hot cracking tests for weldments — Arc welding processes*:

- *Part 1: General*
- *Part 2: Self-restraint tests*
- *Part 3: Externally loaded tests* [Technical Report]

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Foreword

This document (CEN ISO/TR 17641-3:2005) has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

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1 Scope

This document outlines the test methods and procedures for carrying out externally loaded tests to assess susceptibility to hot cracking.

The following tests are described:

- Hot tensile tests
- Varestreint and transvarestreint test
- Flat tensile test.

The above tests can provide information about the hot cracking sensitivity of parent materials, weld metals and weldments. Assessment is based upon the measurement of the "brittle temperature range" (BTR) where hot cracks occur.

This document applies primarily to austenitic stainless steels, nickel, nickel base and nickel copper alloys, weldments and welding consumables. However, the principles can be extended to other materials such as aluminium alloys and high strength steels by agreement between contracting parties.

2 Normative references

The following referenced document is 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.

EN ISO 17641-1:2004, *Destructive tests on welds in metallic materials — Hot cracking tests for weldments — Arc welding processes — Part 1: General (ISO 17641-1:2004)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 17641-1:2004 apply.

4 Symbols, designations and units

For the purposes of this document, the symbols and units given in Table 1 apply.