

**Resistance welding - Destructive tests on welds in
metallic materials - Torsion test of resistance spot welds
(ISO 17653:2012)**

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EUROPEAN STANDARD

EN ISO 17653

NORME EUROPÉENNE

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English Version

Resistance welding - Destructive tests on welds in metallic materials - Torsion test of resistance spot welds (ISO 17653:2012)

Soudage par résistance - Essais destructifs des soudures sur matériaux métalliques - Essai de torsion de soudure par résistance par points (ISO 17653:2012)

Widerstandsschweißen - Zerstörende Prüfung von Schweißverbindungen an metallischen Werkstoffen - Torsionsversuch an Widerstandspunktschweißverbindungen (ISO 17653:2012)

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 17653:2012) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding" 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of an identical text or by endorsement, at the latest by November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

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Endorsement notice

The text of ISO 17653:2012 has been approved by CEN as a EN ISO 17653:2012 without any modification.

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Resistance welding — Destructive tests on welds in metallic materials — Torsion test of resistance spot welds

1 Scope

This International Standard specifies specimen dimensions, testing equipment and the procedure for torsion testing of resistance spot welds with single sheet thicknesses ranging from 0,5 mm to 6,0 mm in steels. It can be used for non-ferrous materials in certain circumstances.

The aim of this International Standard is to determine the weld diameter and the failure type of fractured specimens, and to evaluate the influence of different steel types, welding parameters and other factors on the deformation characteristics of a resistance spot weld.

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 14329, *Resistance welding — Destructive tests of welds — Failure types and geometric measurements for resistance spot, seam and projection welds*

ISO 17677-1, *Resistance welding — Vocabulary — Part 1: Spot, projection and seam welding*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14329 and ISO 17677-1 and the following apply.

3.1

non-instrumented torsion test

test used to determine weld diameter and failure type of welds without measuring torque or torsion angle

3.2

instrumented torsion test

torsion test with measuring instruments for torque or torsion angle to evaluate the mechanical properties of welds as well as the weld diameter and failure type

4 Specimens

Specimens for torsion testing are welded individually. The two coupons with a minimum width of 40 mm and a minimum length of 60 mm shall be welded together such that they can be rotated relative to each other (see Figure 1). The distance of the centre of the spot weld from outer edge in longitudinal direction shall be minimum 20 mm.