
**Steels — Determination and verification
of the depth of carburized and hardened
cases**

Acier — Détermination et vérification de la profondeur de cémentation



Reference number
ISO 2639:2002(E)

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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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2639 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 7, *Methods of testing (other than mechanical tests and chemical analysis)*.

This third edition cancels and replaces the second edition (ISO 2639:1982), which has been technically revised.

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Steels — Determination and verification of the depth of carburized and hardened cases

1 Scope

This International Standard defines the case-hardened depth, and specifies methods for the determination of this depth, in steel.

It is applicable to

- a) carburized cases and carbonitrided cases;
- b) parts that, when heat treated to final hardness, have a hardness of less than 450 HV 1 at a distance of three times the case-hardened depth, from the surface.

The case-hardened depth is defined by special agreement where these conditions are not met.

For steels that, in the part under test, and at a distance of three times the case-hardened depth from the surface, present a hardness greater than 450 HV 1, the criterion can still be used, provided that a limiting hardness value greater than 550 HV 1 – in steps of 25 units – be selected for the case-hardened depth.

2 Normative references

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 4545, *Metallic materials — Hardness test — Knoop test*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

3 Term and definition

For the purposes of this International Standard, the following term and definition applies.

3.1

case-hardened depth (of a carburized and hardened case)

perpendicular distance between the surface and the layer having a hardness of 550 HV 1 in accordance with ISO 6507-1 or equivalent Knoop hardness in accordance with ISO 4545