

INTERNATIONAL STANDARD

ISO
4532

First edition
1991-12-01

Vitreous and porcelain enamels — Determination of the resistance of enamelled articles to impact — Pistol test

*Émaux vitrifiés — Détermination de la résistance au choc des pièces
émaillées — Essai au pistolet*



Reference number
ISO 4532:1991(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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.

International Standard ISO 4532 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Sub-Committee SC 6, *Vitreous and porcelain enamels*.

It is based on a test method developed by a committee of the VDEfa. The VDEfa Technical Report No. 4 [1] describes the development of the pistol test and gives comprehensive information on numerous pistol tests carried out on different shapes of test specimens.

Annexes A and B of this International Standard are for information only.

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International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Vitreous and porcelain enamels — Determination of the resistance of enamelled articles to impact — Pistol test

1 Scope

This International Standard specifies a test method for determining the resistance of enamelled articles to impact.

The method is used as a factory production control test.

NOTE 1 The pistol test is not intended to be used for testing the adhesion of the enamel.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2746:1973, *Vitreous and porcelain enamels — Enamelled articles for service under highly corrosive conditions — High voltage test*.

3 Principle

Shooting of a ball-tipped striking bolt of an apparatus operated by adjustable spring tension, against the surface of the test specimen. Evaluation of the point of impact.

The load applied to the striking bolt, which with one blow produces visible damage to the enamel, is inversely proportional to the sensitivity of the enamelled article to impact.

4 Apparatus

The test apparatus (see figure 1) consists of a striking bolt with a 5 mm steel ball tip which is shot once against the surface under test by means of a pressure spring (100 mm long, unloaded). The spring load can be continuously adjusted from 0 to 90 N by the power-adjusting sleeve.

NOTE 2 The newton-metre scale provided on the outside of the apparatus shall only be used as a guide because a non-linear scale can lead to significant errors.

The pressure spring is loaded by means of a clamp. The spring constant is $20 \text{ N/cm} \pm 0,5 \text{ N/cm}$. When the spring is loaded, it is kept stationary by a holder on the striking bolt and released by the trigger for striking. For testing, a tripod can be fixed at the front of the apparatus in order to keep the apparatus vertical against the test surface. The front of the tool is convex-shaped for testing concave articles. For testing articles with small radii, it is supplied with a cross-groove. In the range of application of the apparatus, the error in reading shall not be greater than 3 %.

See annex A for the calibration and determination of the zero point of the apparatus.