
INTERNATIONAL STANDARD



3208

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Road vehicles — Evaluation of protrusions inside passenger cars

Véhicules routiers — Évaluation des saillies à l'intérieur des voitures particulières

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3208 was drawn up by Technical Committee ISO/TC 22, *Road vehicles*, and circulated to the Member Bodies in July 1973.

It has been approved by the Member Bodies of the following countries :

Austria	Ireland	Spain
Belgium	Japan	Switzerland
Bulgaria	Netherlands	Thailand
Czechoslovakia	New Zealand	Turkey
Egypt, Arab Rep. of	Poland	United Kingdom
France	Portugal	U.S.S.R.
Germany	Romania	Yugoslavia
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The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Italy
U.S.A.

Road vehicles — Evaluation of protrusions inside passenger cars

1 SCOPE

This International Standard specifies a test method for the determination of the significance of the protrusion of controls and other devices situated inside a passenger car and also of their ability to retract, compress or become detached under the effect of a force.

In addition it specifies the apparatus to be used for this purpose.

2 FIELD OF APPLICATION

This International Standard is applicable only to those controls and other devices such as buttons, levers, etc., in rigid material (at least 50 IRHD¹⁾ hardness) forming a protrusion and situated in the reference zone defined in the annex.

3 REFERENCE

ISO 48, *Vulcanized rubbers — Determination of hardness (Hardness between 30 and 85 IRHD)*.

4 TEST APPARATUS

4.1 General

This apparatus is intended to measure the significance of protrusions and the force necessary to cause them to retract, compress or become detached. These two measurements may also be made by two separate devices.

4.2 Description

The protrusion measurement device shall consist of a 165 mm diameter hemispherical headform within which shall be a 50 mm diameter flat-ended sliding piston (see the figure). The force application device shall have a system of force measurement.

4.2.1 The relative positions of the flat front face of the piston and the leading edge of the headform shall be shown on a graduated scale on which a moving index shall retain the maximum reading when the device is removed from the test specimen. The range of measurement shall be at least 30 mm graduated in 0,5 mm; reference protrusion values may be marked on the scale as desired.

4.2.2 The apparatus shall be provided with a system of measuring the angle of application relative to the horizontal. The range shall be 0 to 90° with an accuracy of 1°.

4.2.3 The application of the force shall be made through the piston independently of the headform. This force shall be recorded on a scale graduated from 0 to 50 daN; the accuracy of measurement shall be at least 0,5 daN.

4.3 Calibration

4.3.1 Protrusion scale

Present the device to a flat surface such that the axis of the device is normal to the surface.

With the flat front face of the piston in contact with the surface, zero the protrusion scale.

Insert a 10 mm distance piece between the piston face and the surface and check that the protrusion scale shows this reading.

4.3.2 Force scale

Check the force scale by the application to the piston of forces of 30 and 40 daN.

5 TEST PROCEDURE

This procedure is applicable only to protrusions in the zone called "Reference zone". (See definition in the annex).

5.1 Measurement of protrusions

Withdraw the piston to form a recess in the headform and set the moving index in contact with the piston.

Apply the device to the protrusion to be measured in such a way that the headform is in contact with the maximum possible surface area of surrounding material, with a force not exceeding 2 daN.

Push the piston forward until it comes into contact with the protrusion to be measured and read the protrusion measurement on the scale.

Orient the headform so as to obtain the maximum protrusion. Read the value of this protrusion.

1) See ISO 48.