

**Vägfordon – Fotgängarkollisioner –
Provningsmetod för islag med barnhuvud**
(ISO 16850:2007, IDT)

**Road vehicles – Pedestrian protection – Child
head impact test method (ISO 16850:2007, IDT)**

Den internationella standarden ISO 16850:2007 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 16850:2007.

The International Standard ISO 16850:2007 has the status of a Swedish Standard. This document contains the official English version of ISO 16850:2007.

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Test equipment	4
4.1 Impact test site	4
4.2 Head form impactor	4
5 Requirements	4
5.1 Head form impactor	4
5.2 Impact area	4
5.3 Impact angle for child head form impactor	4
5.4 Child head form impactor calibration	4
5.5 Propulsion of child head form impactor	5
5.6 Temperature conditions	5
5.7 Rear face of child head impactor	5
6 Preparation of test vehicle	5
7 Test conditions	6
7.1 Atmospheric conditions	6
7.2 Impact angle and impact velocity	6
7.3 Impact points	6
8 Recording of test results	6
8.1 Child head form impactor data	6
Annex A (informative) Resolution 65 of ISO/TC22/SC10/WG2	7
Annex B (normative) Calibration method for child head form impactor	8
Annex C (informative) Impact velocity and impact angle	10
Bibliography	13

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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

ISO 16850 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 10, *Impact test procedures*.

Introduction

The intent of this International Standard is to help reduce pedestrian head injuries by providing a standardized test method which will allow different test organizations to use the results from pedestrian impact tests conducted by other organizations.

The test method specified applies to children.

Road vehicles — Pedestrian protection — Child head impact test method

1 Scope

This International Standard specifies a test method to simulate the child impact of a child pedestrian to the bonnet of passenger vehicles or some light truck vehicles, as defined in ISO 3833.

The purpose of this test method is to simulate frontal impact of a vehicle, laterally to a pedestrian.

The impact device to be used in this test method will be robust for a vehicle impact velocity of up to 11 m/s.

While the test method specified addresses the reduction of a child pedestrian head injury risk, it does not test for injuries to other regions of the pedestrian. The evaluation of injury risk to other pedestrian body regions is determined using other test methods.

This test method does not consider downward pitching of the vehicle due to pre impact braking.

This test method and the corresponding HIC measurement utilize a free flight head form impactor, and does not consider the kinematics of the pedestrian body as a whole, nor does it consider the subsequent post-impact kinematics and potential injury risk.

NOTE The test method covers a child pedestrian's head in a simulated impact with a motorized road vehicle. Research suggests that safety improvements in vehicles derived from such pedestrian impact tests may be beneficial also to bicyclists in vehicle front impact.

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 3784, *Road vehicles — Measurement of impact velocity in collision tests*

ISO 3833, *Road vehicles — Types — Terms and definitions*

ISO 6487, *Road vehicles — Measurement techniques in impact tests — Instrumentation*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

normal ride attitude

vehicle attitude in driving order positioned on the ground, with the tyres inflated to recommended pressures, the front wheels in the straight-ahead position, with maximum capacity of all fluids necessary for operation of the vehicle (with all standard as provided by the vehicle manufacturer), with one adult male 50th percentile dummy or an equivalent mass placed on the driver's seat, and with one adult male 50th percentile dummy or

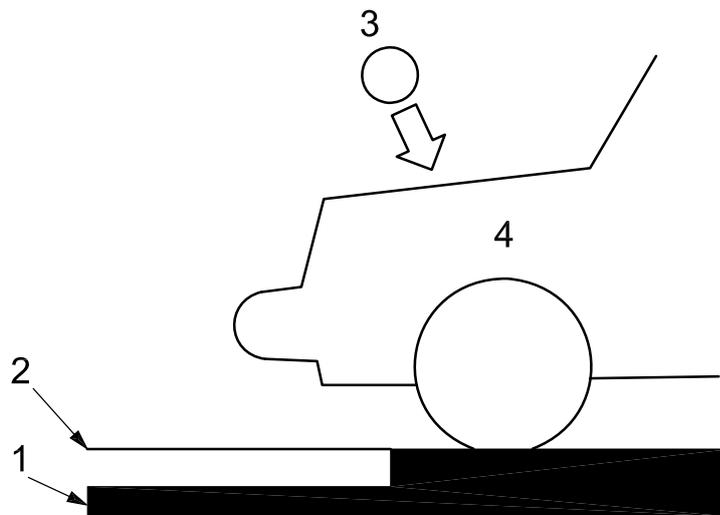
SS-ISO 16850:2007

an equivalent mass placed on the passenger's seat, and the suspension set in normal running conditions specified by the manufacturer (especially for vehicles with an active suspension or a device for automatic levelling)

**3.2
ground reference plane**

horizontal plane, either real or imaginary, that passes through all tyre contact points of a vehicle while the vehicle is in its normal ride attitude (see Figure 1)

NOTE If the vehicle is resting on the ground, then the ground plane and the ground reference plane are one and the same. If the vehicle is raised off the ground such as to allow extra clearance below the bumper, then the ground reference plane is above the ground plane.



- Key**
- 1 ground
 - 2 ground reference plane
 - 3 impactor
 - 4 vehicle

Figure 1 — Configuration of ISO head impact test method

**3.3
bonnet top**

outer structure that includes the upper surfaces of the bonnet and of the wings (outer fenders), the scuttle (cowl top) and the lower edge of the windscreen

**3.4
wrap around distance
WAD**

geometric trace described on the top of the bonnet by one end of a long flexible tape, the other end held in contact with the ground reference plane when it is held in a vertical fore and aft plane of the vehicle and traversed across the front of the bonnet and bumper of the vehicle when it is in the normal ride attitude (see Figure 2)

NOTE The tape is held taut throughout the operation with one end held in contact with the ground reference plane, vertically below the front face of the bumper and the other end held in contact with the bonnet top. The length of the tape is the same as values of wrap around distance required in 5.2.