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**Road vehicles — Design and  
performance specifications for the  
WorldSID 50th percentile male side-  
impact dummy —**

**Part 1:  
Vocabulary and rationale**

*Véhicules routiers — Conception et spécifications de performance  
pour le mannequin mondial (WorldSID), 50e percentile homme, de  
choc latéral —*

*Partie 1: Vocabulaire et raisonnement*



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## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 36, *Safety and impact testing*.

This third edition cancels and replaces the second edition (ISO 15830-1:2013), which has been technically revised.

The main changes are as follows:

- in [B.3.3.3](#) and [Table B.4](#), corrected biofidelity rating of neck test 2;
- in [B.3.6.3](#) and [Table B.7](#), corrected biofidelity rating of abdomen test 3;
- in [Table B.9](#), corrected biofidelity ratings;
- in [Table B.10](#), replaced “rotation accelerometer” with “angular accelerometer or ARS”;
- in [Table B.10](#), replaced “IR-TRACC” with “deflection sensors”;
- in [Table B.10](#), removed ankle rotation sensors;
- replaced “WorldSID production dummy” with “WorldSID (May 2005 version)”;
- in [Figure C.15](#), corrected zero offset;
- in [Table C.3](#), corrected biofidelity rating of neck test 2;
- in [Table C.13](#), corrected biofidelity ratings of abdomen test 3;
- in [Table C.20](#), corrected biofidelity ratings.

A list of all parts in the ISO 15830 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The purpose of the ISO 15830 series is to document the design and specifications of this side-impact dummy in a form suitable and intended for worldwide use.

In 1997, the WorldSID 50th percentile adult male dummy development was initiated, with the aims of defining a global-consensus side-impact dummy, with more human-like anthropometry, improved biofidelity, and increased injury-monitoring capabilities, suitable, for example, for regulatory use. Participating in the development were research institutes, dummy and instrumentation manufacturers, governments, and vehicle manufacturers from around the world.

This document is intended to document information and design changes which have become available since the publication of the second edition of the ISO 15830 series (2013-05-15).

In order to apply the ISO 15830 series properly, it is important that all four parts be used together.



# Road vehicles — Design and performance specifications for the WorldSID 50th percentile male side-impact dummy —

## Part 1: Vocabulary and rationale

### 1 Scope

This document provides the vocabulary, symbols, and rationale used in all parts of the ISO 15830 series for the WorldSID 50th percentile side-impact dummy, a standardized anthropomorphic dummy for near-side-impact tests of road vehicles.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

#### 3.1

##### **1-to-2-g-setting**

joint friction setting which will support the weight of a horizontally extended limb segment but will not support twice the limb segment weight

#### 3.2

##### **abdomen rib**

lowest two ribs of the six mechanical ribs in the WorldSID dummy

#### 3.3

##### **aluminium honeycomb**

manufactured material comprising multi-layered bonded sheets of aluminium bent or corrugated in a rib pattern, in which there is an internal pattern of hexagonal cylindrical spaces

#### 3.4

##### **angular rate sensor**

##### **ARS**

sensor which records angular velocity

#### 3.5

##### **arm**

assembly of the WorldSID dummy comprising dedicated upper arm components which are different from the components of the *full arm* (3.12)

Note 1 to entry: Unless otherwise specified, arm refers to the half arm for the ISO 15830 series.