

Impact tests on road vehicles —

Part 1a: Specification for measurement techniques and general instrumentation

ICS 43.020

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National foreword

This British Standard reproduces verbatim ISO 6487:2000 and implements it as the UK national standard. It supersedes BS AU 228-1:1989 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AUE/7, Automobile occupant restraint systems, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii to v, a blank page, pages 1 to 13 and a back cover.

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

International Standard ISO 6487 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 12, *Restraint systems*.

This third edition cancels and replaces the second edition (ISO 6487:1987), subclauses 3.5, 3.9 and 3.10, Figure 1, and annex B of which have been technically revised. The new subclauses 4.8, 4.9 and 4.10, annex A, Figure 2, and the bibliography have been added.

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

Introduction

This International Standard specifies a series of performance requirements covering the entire measurement sequence of impact shocks. While these requirements are unalterable and obligatory for any party conducting tests in conformance with this International Standard, the method chosen to demonstrate conformance can be adapted to suit the particular equipment being used for testing.

Such an approach affects the interpretation of requirements. For example, the requirement to calibrate within the channel's working range of F_L to $F_H/2,5$ (see 4.1) cannot be interpreted literally, as low-frequency calibration of accelerometers requires large displacement inputs beyond the capacity of virtually any test laboratory.

Nor is it intended that each requirement be taken as necessitating proof by a single test. A tester can certify that if such a test of conformity were possible and were to be carried out, the equipment would meet the requirements. This certification would be based on reasonable deductions from existing data — the results of partial tests, for example — and its basis would normally be expected to be made available to the impact-test-result users.

For some subjects a single test is enough to directly demonstrate conformity. Other subjects, however, will need to be certified in an indirect manner. Again, using the example of calibration, this might be obtained with direct current at a medium frequency and, from knowledge of the transducer, an inference drawn that calibrations at intermediate frequencies would be the same.

A similar case is the practical need to divide the whole channel into subsystems for calibration and checking purposes. The requirements covering this are valid for the whole channel, the sole route by which subsystem performance can affect output quality. However, because it is often difficult to measure whole-channel performance, the tester could treat the channel as two or more convenient subsystems, and then certify the whole channel on the basis of the subsystem results, presenting them with the rationale for combining them.

In summary, this International Standard allows the user of impact-test results to call up a set of relevant instrumentation requirements merely by specifying ISO 6487, while conferring on the tester the primary responsibility for certifying that these requirements have been met by the instrumentation system used in testing. The evidence on which this certification is based will be made available on request to the user by the tester. In this way, strict requirements guaranteeing the suitability of instrumentation for impact testing are combined with flexible means of demonstrating conformity with them.