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**Road vehicles — Environmental  
conditions and testing for electrical  
and electronic equipment —**

**Part 3:  
Mechanical loads**

*Véhicules routiers — Spécifications d'environnement et essais de  
l'équipement électrique et électronique —*

*Partie 3: Contraintes mécaniques*



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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 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 16750-3 was prepared by Technical Committee ISO/TC 22, *Road vehicle*, Subcommittee SC 3, *Electrical and electronic equipment*.

This third edition cancels and replaces the second edition (ISO 16750-3:2007), which has been technically revised.

ISO 16750 consists of the following parts, under the general title *Road vehicles — Environmental conditions and testing for electrical and electronic equipment*:

- *Part 1: General*
- *Part 2: Electrical loads*
- *Part 3: Mechanical loads*
- *Part 4: Climatic loads*
- *Part 5: Chemical loads*

# Road vehicles — Environmental conditions and testing for electrical and electronic equipment —

## Part 3: Mechanical loads

### 1 Scope

This part of ISO 16750 applies to electric and electronic systems/components for road vehicles. It describes the potential environmental stresses and specifies tests and requirements recommended for the specific mounting location on/in the vehicle.

This part of ISO 16750 describes mechanical loads.

### 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 16750-1, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 1: General*

IEC 60068-2, 6, *Environmental testing — Part 2-6: Testing, Test Fc: Vibration (Sinusoidal)*

IEC 60068-2, 14, *Basic environmental testing procedures — Part 2-14: Tests — Test Nb: Change of temperature*

IEC 60068-2, 64, *Environmental testing — Part 2-64: Test methods — Test Fh — Vibration, broad-band random (digital control) and guidance*

IEC 60068-2, 80, *Environmental testing — Part 2-80: Tests — Test Fi: Vibration — Mixed mode testing*

IEC 60068-2-31, *Environmental testing procedures — Part 2: Tests; Test Ec: Free fall, Clause 5.2*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16750-1 apply.

### 4 Tests and requirements

#### 4.1 Vibration

##### 4.1.1 General

The vibration test methods specified consider various levels of vibration severities applicable to on-board electrical and electronic equipment. It is recommended that the vehicle manufacturer and supplier choose the test method, the environmental temperature and vibration parameters depending on the specific mounting location.

Following the expressions in MIL-STD please notice: