
International Standard



7137

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

Aircraft — Environmental conditions and test procedures for airborne equipment

Aéronautique — Conditions d'environnement et procédures d'essai pour les équipements embarqués

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Descriptors : aircraft equipment, tests, testing conditions, environments.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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 7137 was developed by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and was circulated to the member bodies in August 1980.

It has been approved by the member bodies of the following countries :

Austria	Egypt, Arab Rep. of	South Africa, Rep. of
Belgium	France	Spain
Brazil	Iraq	Sweden
Canada	Italy	United Kingdom
China	Japan	USA
Czechoslovakia	Romania	USSR

The member body of the following country expressed disapproval of the document on procedural grounds :

Netherlands

This International Standard cancels and replaces International Standards ISO 2650-1974, ISO 2655-1975, ISO 2657-1976, ISO 2658-1975, ISO 2676-1975 and ISO 2684-1975.

Aircraft — Environmental conditions and test procedures for airborne equipment

1 Scope and field of application

This International Standard lists the different environmental conditions and test procedures for airborne equipment and is primarily intended for civil and/or transport aircraft applications. This International Standard is an endorsement of publications EUROCAE/ED-14 A and RTCA/DO-160 A¹⁾.

2 Requirements

Environmental conditions and test procedures applicable to airborne equipment are set forth in publications EUROCAE/ED-14 A and RTCA/DO-160 A¹⁾, which, except for the explosion proofness test (clause 9), are considered to be International Standards.

The following test procedures are specified in the publication :

Subject	Clause
a) Temperature and altitude	4
b) Temperature variation	5
c) Humidity	6
d) Shock	7
e) Vibration	8
f) Water proofness (drip proof)	10
g) Fluids susceptibility	11
h) Sand and dust	12
j) Fungus resistance	13
k) Salt spray	14
m) Magnetic effect	15
n) Power input	16
p) Voltage spike conducted	17

q) Audio frequency conducted susceptibility	18
r) Induced signal susceptibility	19
s) Radio frequency susceptibility (radiated and conducted)	20
t) Emission of radio frequency energy.	21

There are several additional environmental conditions (categories) to which specific airborne equipment may be subjected and which have not been included in this publication. These include, but are not limited to : rain, hail, icing, acceleration and acoustic vibration.

The existing International Standards are the following :

ISO 2653, <i>Environmental tests for aircraft equipment — Part 2.3 : Ice formation.</i>
ISO 2669, <i>Environmental tests for aircraft equipment — Part 3.2 : Steady state acceleration.</i>
ISO 2671, <i>Environmental tests for aircraft equipment — Part 3.4 : Acoustic vibrations.</i> ²⁾
ISO 2683, <i>Environmental tests for aircraft equipment — Part 5.1 : Explosion proofness.</i> ²⁾
ISO 2685, <i>Environmental tests for aircraft equipment — Part 5.3 : Fire resistance.</i> ³⁾

All environmental conditions and test procedures set forth in publications EUROCAE/ED-14 A and RTCA/DO-160 A are not necessarily applicable to all airborne equipment. The selection of the appropriate environmental conditions and test procedures is the responsibility of the writer (author) of the performance standards for the specific airborne equipment.

It has been agreed with EUROCAE and RTCA that Technical Committee ISO/TC 20 will be consulted in the event of any revision or amendment of these publications.

1) These publications can be obtained from the following addresses :
 EUROCAE (The European Organization for Civil Aviation Electronics), 11 rue Hamelin, 75783 Paris Cedex 16, France.
 RTCA (The Radio Technical Commission for Aeronautics), 1717 H Street NW, Washington DC 20006, USA.

2) At present at the stage of draft.

3) In preparation.