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Aircraft ground equipment — Passenger boarding bridge or transfer vehicle — Interface requirements with aircraft doors

Matériel au sol pour aéronefs — Passerelle passagers ou autobus élévateur — Exigences d'interface avec les portes d'aéronefs

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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).

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).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document it ISO/TC 20, *Aircraft and space vehicle*, Subcommittee SC 9, *Air cargo and ground equipment*.

This second edition cancels and replaces the first (ISO 16004:2005), which constitutes a minor revision and includes the following changes:

— clarification of the scope;

— normative references have been updated;

— table of contents has been added; and

— bibliography has been updated.

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Introduction

Many aircraft types include, in the vicinity of the main deck doors used for passenger access, a variety of protruding items such as pitots, probes, sensors, strakes, etc. which are exposed to inadvertent damage and have been known to suffer from inappropriate design and/or positioning of passenger boarding bridges or passenger transfer vehicles. Since perfect condition of these items is generally essential to flight safety, it is the intent of this document to specify minimum interface requirements on passenger boarding bridges or passenger transfer vehicles such that systematic or inadvertent contact with one of them is avoided.

This document accordingly specifies the minimum interface requirements to be met by the aircraft mating section of either a passenger boarding bridge or a passenger transfer vehicle, in order to allow compatibility with aircraft passenger doors and their surroundings without interference with or risk of damage to these protruding items.

Throughout this document, the minimum essential criteria are identified by the use of the keyword “shall”. Recommended criteria are identified by the use of the keyword “should” and, while not mandatory, are considered to be of primary importance in providing safe passenger boarding bridge or passenger transfer vehicles and minimizing the risk of inadvertent damage to vital aircraft parts. Deviation from recommended criteria should only occur if positively required by basic passenger boarding bridge or passenger transfer vehicle design factors with a significant cost impact, and after careful consideration, extensive testing, and thorough service evaluation have shown alternate methods to be satisfactory.

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Aircraft ground equipment — Passenger boarding bridge or transfer vehicle — Interface requirements with aircraft doors

WARNING — Passenger boarding bridge or passenger transfer vehicle compliance with the provisions of this document will only ensure protection of the exposed devices on the indicated existing aircraft types. As to other potential circumstances:

- **where a passenger boarding bridge or passenger transfer vehicle is to be operated on another existing aircraft type, the responsible design or operating body should check the nature and location of any items protruding in the vicinity of the passenger door(s) used, in order to check if the aircraft is protected against interference or if particular positioning precautions are required, and**
- **features specific to one aircraft type or sub-type have been identified. Passenger boarding bridge design may not take them into account where bridge and/or aircraft stand characteristics preclude handling of the particular aircraft type concerned. Passenger transfer vehicles shall take them into account, inasmuch as the vehicle is capable of reaching the aircraft type's door sill height.**

1 Scope

This document specifies dimensional interface and unobstructed space requirements applicable to the aircraft mating section of either

a) passenger boarding bridges, or

b) passenger transfer vehicles

used at airports for boarding and disembarkation of passengers on the types of civil transport aircraft which have been listed hereafter. These types of aircraft have a door sill height greater than 2,0 m (80 in) over the ground. Lower aircraft usually do not require such means of access, and have not been taken into account.

Data was compiled and checked as to the exact location of such items on the most frequently used civil transport aircraft types, including the following:

— AIRBUS	A300/A310/A318/A319/A320/A321/A330/A340
— BOEING COMMERCIAL AIRPLANE	B717/B727/B737/B747/B757/B767/B777
— LOCKHEED AIRCRAFT	L1011
— McDONNELL DOUGLAS	DC9/DC10/MD11/MD80/MD90

NOTE "Aircraft type", in this context, means the whole family of aircraft sub-types with the same fuselage design and the same general type designator, i.e. potentially includes any future derivative aircraft with the same fuselage.

It is not the intent of the present document to specify any requirements applicable to aircraft design, but to make a status of aircraft passenger door 1 surrounding interface for aircraft designed up to year 2000. Future aircraft types with a new fuselage are expected to meet the main deck passenger doors requirements for interface with passenger boarding bridges or passenger transfer vehicles of ISO 7718 (all parts), which would ensure their compatibility with the aircraft mating section of passenger boarding bridges or passenger transfer vehicles meeting the requirements of the present document.

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2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 6966-1, *Aircraft ground equipment — Basic requirements — Part 1: General design requirements*

ISO 6966-2, *Aircraft ground equipment — Basic requirements — Part 2: Safety requirements*

ISO 7718-1, *Aircraft — Passenger doors interface requirements for connection of passenger boarding bridge or passenger transfer vehicle — Part 1: Main deck doors*

ISO 7718-2, *Aircraft — Passenger doors interface requirements for connection of passenger boarding bridge or passenger transfer vehicles — Part 2: Upper deck doors*

3 Terms and definitions

No terms and definitions are listed in this document.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 General safety requirements

4.1 The passenger boarding bridge or passenger transfer vehicle design shall meet the appropriate requirements of ISO 6966-1 and ISO 6966-2.

4.2 In addition, the passenger boarding bridge design should, where applicable, meet the specific safety requirements of IATA AHM 922 and EN 12312-4.

5 Equipment requirements for interface with aircraft

5.1 Reference planes

5.1.1 The following reference planes are used in order to define the location of the potential interference areas in relation with the aircraft passenger doors.

5.1.2 Vertical reference plane

The plane, perpendicular to the local aircraft skin, passing through the most forward edge of the door when stowed in the open position.

For aircraft types with an inward opening door, the vertical reference plane shall be the plane, perpendicular to the local aircraft skin, located 0,915 m (3 ft) forward of the forward edge of the door opening.

NOTE This vertical reference plane was chosen because the most flight safety critical items on commonly operated aircraft types are located immediately forward of it and it is usually situated immediately in front of a passenger boarding bridge's operator, thus allowing optimum positioning accuracy.

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