
**Air cargo equipment — Restraint
straps —**

**Part 1:
Design criteria and testing methods**

Équipement pour le fret aérien — Sangles d'arrimage —

Partie 1: Critères de conception et méthodes d'essai

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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).

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This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 9, *Air cargo and ground equipment*.

This third edition cancels and replaces the second edition (ISO 16049-1:2013), which has been technically revised. The main changes compared to the previous edition are as follows:

- in [Figure 1](#), deletion of items D5 and D6, required by TSO/ETSO-C172a, and amendment of item D2;
- in [4.4](#), updating of flammability requirement to the latest amended Regulations.

A list of all parts in the ISO 16049 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.

Introduction

This document specifies the design criteria and testing methods applicable to air cargo restraint straps to be used for tie-down of unitized or non-unitized cargo on board civil transport aircraft.

Throughout this document, the minimum essential criteria are identified by use of the key word "shall". Recommended criteria are identified by use of the key word "should" and, while not mandatory, are considered to be of primary importance in providing safe restraint straps. Deviation from recommended criteria should only occur after careful consideration, extensive testing, and thorough service evaluation have shown alternate methods to be satisfactory.

The requirements of this document are expressed in the applicable SI units, with approximate inch-pound units conversion between brackets for convenience in those countries using that system.

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