INTERNATIONAL STANDARD

ISO 21785

First edition
2020-02

Air cargo unit load devices — Load distribution model

Unités de charge de fret aérien — Modèle de répartition des charges

This document is a preview generated by EVS

Reference number
ISO 21785:2020(E)

© ISO 2020

This document is a preview generated by EVS

COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

 © ISO 2020 – All rights reserved

Contents

Page

This document is a preview generated by EVS

© ISO 2020 – All rights reserved

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 of the voluntary nature of standards, 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 www.iso.org/iso/foreword.html.

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

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.

This document is a preview generated by EVS

© ISO 2020 – All rights reserved

Introduction

This document specifies a reference model for load distribution on air cargo unit load device (ULD) bases, to reflect in a standardized manner maximum allowable centre of gravity (C.G.) eccentricity limitations.

The civil aviation requirements referred to in this document are those concerning certification of transport aircraft and appliances to be installed aboard them, and constitute the set of design and operation requirements internationally agreed in application of International Civil Aviation Organization (ICAO) Annex 8, Airworthiness of aircraft, to the Convention on International Civil Aviation.

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 air cargo unit load devices. Deviation from recommended criteria should only occur after careful consideration and thorough service evaluation have shown alternate methods to provide an equivalent level of safety.

This document is a preview generated by EVS

© ISO 2020 – All rights reserved

This document is a preview generated by EVS

Air cargo unit load devices — Load distribution model

This document is a preview generated by EVS

1 Scope

This document defines the industry agreed model for load distribution on air cargo unit load devices (ULD) bases to apply the maximum allowable centre of gravity (C.G.) eccentricity.

Its purpose is to establish a common reference load distribution algorithm for:

a) comparable and repeatable ULD testing methods, or equivalent numeric simulations;

b) aircraft structure and cargo systems design assumptions, consistent with existing airframers practices; and

c) definition of operators unit load devices utilization rules and cargo build-up training programs.

It applies to all types of unit load devices intended for use on board civil transport aircraft and airworthiness approved in accordance with the performance requirements and testing parameters of either ISO 21100 or, as applicable, ISO 8097.

It also applies to non-airworthiness approved (non-certified) containers as defined in ISO 4118, the utilisation of which is controlled by the provisions of the aircraft type's Weight and Balance Manual and other airframe manufacturer's documents.

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 8097, *Aircraft — Minimum airworthiness requirements and test conditions for certified air cargo unit load devices*

ISO 10254, *Air cargo and ground equipment — Vocabulary*

ISO 21100, *Air cargo unit load devices — Performance requirements and test parameters*

3 Terms and definitions

For the purposes of this document, the terms and definitions of ISO 10254 and the following apply:

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

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

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

3.1
eccentricity
offset
<centre of gravity**>** plan view distance between the overall centre of gravity (C.G.) of the unit load device and its contents and the geometric centre of its base, expressed in percentage of the base length and width

© ISO 2020 – All rights reserved