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Aircraft ground handling — Checked baggage —

Part 1: Mass and dimensions

Traitement au sol des aéronefs — Bagages enregistrés —

Partie 1: Masses et dimensions

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

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Foreword

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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*.

A list of all the parts in the ISO 12604- series can be found on the ISO website.

Introduction

This document specifies maximum weight and dimensions requirements for baggage checked in by airline passengers to be carried in aircraft cargo compartments, in order to

— contribute to alleviating work conditions for baggage handling personnel and reducing the incidence of musculo-skeletal disorders (MSD) in this population,

— facilitate enhancing the overall efficiency of baggage handling, and

— provide standards for designing automated baggage handling systems increasingly used at airports.

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 and efficient baggage handling. Deviation from the recommended criteria should only occur after careful consideration and thorough service evaluation have shown alternate methods to provide an equivalent level of work safety.

Aircraft ground handling — Checked baggage —

Part 1:
Mass and dimensions

1 Scope

This document specifies mass and dimensions requirements for individual pieces of baggage checked in by airline passengers at airports to be carried in aircraft cargo compartments.

This document does not apply to cabin baggage carried on board by passengers.

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 indicated applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11228-1, *Ergonomics — Manual handling — Part 1: Lifting and carrying*

ISO 11228-3, *Ergonomics — Manual handling — Part 3: Handling of low loads at high frequency*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10254, ISO 11228-1, and the following apply.

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

3.1
baggage
bag, suitcase, trunk or similar article travelling with a checked passenger and containing those items necessary for the passenger's journey, such as clothing and personal articles within certain limitations in accordance with the applicable carrier conditions of carriage, that is accepted and checked in for loading and carriage aboard the same aircraft

Note 1 to entry: Does not include freight, express cargo, courier mail, or unaccompanied baggage travelling as freight.

3.2
piece of baggage
individual item of baggage that can be handled separately from any other item

3.3
standard baggage
piece of baggage that conforms to requirements set for mass and dimensions

Note 1 to entry: See 4.1.

3.4
non-standard baggage
piece of baggage that exceeds any of the requirements set for standard baggage

3.5
handling agent
services provider that performs all or part of baggage handling, including loading/offloading it in/from aircraft, at an airport

Note 1 to entry: The handling agent can be either a carrier, a contracted service provider or an airport authority.

3.6
operator
person or persons given the task of handling the baggage

4 Requirements

4.1 Standard baggage

4.1.1 Mass

The mass of standard baggage shall not exceed 23 kg (50 lb) and shall be 2 kg (5 lb) minimum per piece.

NOTE The functioning of equipment available for automated handling of baggage can be hampered when the mass of a piece of baggage is very low.

4.1.2 Dimensions

The dimensions of standard baggage shall not exceed 1 580 mm (62 in) in total of Length + Width + Height of each piece, with the longest dimension not exceeding 915 mm (36 in) and the shortest being 120 mm (5 in) minimum, not including handles.

NOTE 1 The requirement on the dimensions is not based on ISO 11228-1 or other literature on ergonomics in relation to lifting and carrying. This requirement, based on compatibility with handling systems, is however well accepted in the airline industry.

NOTE 2 The functioning of equipment available for automated handling of baggage can be hampered when the dimensions of a piece of baggage are very small.

4.1.3 Conveyability

Certain pieces meeting the mass and dimensions limits specified in 4.1.1 and 4.1.2 can nevertheless be unsuitable for handling by mechanized baggage systems: in order to be suitable for systems handling, a piece of baggage shall have a stable shape, at least one flat surface, and no protruding straps, hooks, or similar other appurtenances.

This can result in additional manual handling, which should be avoided insofar as feasible: see 4.4.3.

4.2 Non-standard baggage

4.2.1 Acceptance

Non-standard baggage may only be accepted as an exception. Pieces of baggage that do not conform to the requirements set for standard baggage in 4.1 shall, if dividable, be rearranged by the passenger into pieces of baggage that do conform to the requirements for standard baggage.

NOTE To avoid difficulties at check-in, it is essential that passengers are informed before travelling to the airport for the flight about the acceptance of baggage (see 4.3).

4.2.2 Mass

Where an undividable piece of baggage exceeding a mass of 23 kg (50 lb) is accepted:

— it shall be labelled accordingly;

See typical heavy baggage labels in Annex A. They should bear the piece's mass in order to provide an indication to baggage handling personnel.

— it shall be handled at the airport with special measures, e.g. by two persons or, where appropriate, with ancillary equipment;

— it shall not exceed a mass of 46 kg (100 lb) per piece (over this mass, the piece should not be accepted as checked baggage and should be carried as freight).

4.2.3 Dimensions

Where a piece of baggage exceeding the dimensions for standard baggage is accepted, it is recommended to use an outsize baggage circuit in the terminal, as wide and straight as possible, to transport it without interference with any standard baggage handling systems, avoid a risk of damage to both the systems and the piece of baggage, and provide optimised conditions for manual handling where necessary.

Dimensions should not exceed 3 000 mm (118 in) in total of Length + Width + Height of each piece.

Over these dimensions, the piece should not be accepted as checked baggage and should be carried as freight.

NOTE This requirement is not based on ergonomics. It is deemed necessary as a reference to design airport outsize baggage circuits and systems capability, and is well accepted in the airline industry.

4.3 Information

Carriers shall inform passengers in good time prior to the flight on the requirements set for standard baggage in 4.1 and the restrictions on the acceptance of non-standard baggage in 4.2.

4.4 Handling

4.4.1 The handling agent should, wherever possible, take measures or use mechanized equipment appropriate to avoid or reduce manual handling of baggage.

4.4.2 Mechanized or automated equipment shall be capable of handling without manual intervention at least the mass and dimensions per piece specified for standard baggage in 4.1. It is recommended that it also be capable of handling non-standard heavy baggage up to the mass specified in 4.2.2.

4.4.3 Insofar as possible, non-conveyable pieces of baggage (see 4.1.3) should be reconditioned, e.g. shrink wrapped, inserted into an outer bag, or protruding items attached, to become acceptable for the baggage handling systems.

4.4.4 Where manual handling cannot be avoided, the handling agents shall perform a risk assessment in accordance with ISO 11228-1, and take specific measures or use equipment to reduce the resulting ergonomic hazard to handling operators, including work stations design and baggage handling personnel training on how to handle baggage to minimize health risks.

4.4.5 For this purpose, the handling agents shall take into account the limits for manual lifting and carrying as a function of intensity, frequency and duration recommended in ISO 11228-1, taking into account the recommendations of ISO 11228-3. Complying with the limits specified in 4.1 will contribute to meeting these objectives.

NOTE 1 ISO 11228-1 takes into account the frequency and duration of the tasks, therefore implicitly considering average load weight, which is out of the scope of this document. This document aims at limiting the maximum mass and dimensions of standard baggage, thus eliminating or reducing those most demanding ergonomic situations part of the tasks. But this does not alleviate the physical work of handling average baggage, to be covered by other means.

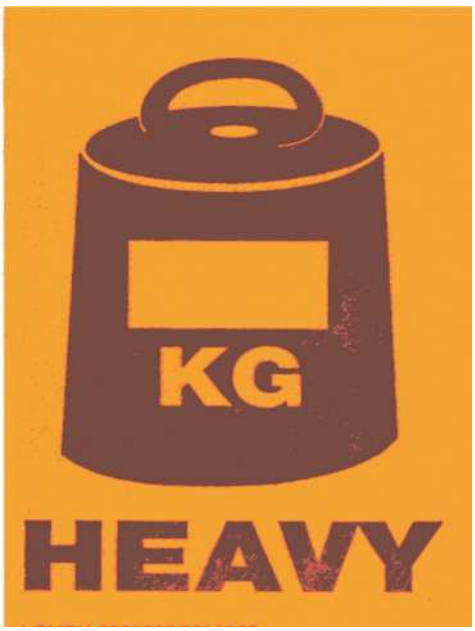
Where average baggage weights are nevertheless necessary for ergonomic evaluation, they should preferably be taken from local airport statistics. For non-local purposes, the default baggage values authorized by airworthiness authorities for aircraft weight and balance purposes, which are based on extensive surveys and regularly updated, can be used. For instance, in European airports, the average weight per piece of baggage is to be taken as 11 kg on domestic flights, 13 kg on intra-European flights, and 15 kg on intercontinental flights [see EU-OPS 1.620 (f)[10]].

NOTE 2 In most countries, national legislation regarding ergonomic issues is also applicable. See, for example, Reference [9].

Annex A
(informative)

Typical examples of heavy baggage identification labels

a) Colour: white on black background



b) Colour: black on orange background

Figure A.1 — Typical examples of heavy baggage identification labels

Bibliography

[1] ISO 6966-1, *Aircraft ground equipment — Basic requirements — Part 1: General design requirements*

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

[3] ISO 6385, *Ergonomics principles in the design of work systems*

[4] ISO 12604-2:—[1)], *Aircraft ground handling — Checked baggage — Part 2: Handling guidelines*

[5] ISO 12604-3:—[2)], *Aircraft ground handling — Checked baggage — Part 3: Work station ergonomics*

[6] EN 1005-2[3)], *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery)*

[7] EN 12312-3[4)], *Aircraft ground support equipment — Specific requirements — Part 3: Conveyor belt vehicles1)*

[8] IATA Airport Development Reference Manual, section 3.4.19, Baggage Handling System[5)]

[9] E.U. Directive 90/269/EEC of 29 May 1990, *Council Directive on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers* [applicable in the E.U. and E.F.T.A countries]

[10] E.U. Regulation OPS 1[6)], Commercial Air Transportation (Aeroplanes), § 1.620 and AMC 1.620, *Mass of passengers and baggage*

1) Under development.

2) Under development.

3) European standards can be obtained from: Comité Européen de Normalisation, Avenue Marnix 17, B-1000 Brussels, Belgium, or any of the European national standardization institutes, members of C.E.N.: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

4) Same as in footnote 3.

5) I.A.T.A. publications can be obtained from:International Air Transport Association, Publications Assistant, 800 Place Victoria, P.O. Box 113, Montréal, Québec H4Z1M1, Canada, or its web site at www.iata.org.

6) E.U. OPS can be obtained from:European Aviation Safety Agency (EASA), Otto Platz 1, Postfach 101253, D-50452 Cologne, Germany, or its web site at www.easa.europa.eu.

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