
**Transport Packaging — Temperature
controlled transport packages for
parcel shipping —**

**Part 2:
General specifications of testing**



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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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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 122, *Packaging*.

A list of all parts in the ISO 22982 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 has been developed following a reflection on the situation where producers and users experience confusion regarding the test procedures of temperature-controlled transport packages for parcel shipping. Despite the increasing international attention to product safety and quality of cold chain parcel shipping through electronic commerce, an International Standard addressing the variations in the use of proper package testing has been missing.

Physical test methods are based on ISO 2233, ISO 4180 and test methods on insulation performance are based on the methodologies specified in ISTA Procedure 7E, ASTM D 3103.

Under special circumstances where the weight or products and temperature show differences, agreements made between stakeholders are followed.

EXAMPLE

- a) heavy weighted products;
- b) presence of dry ice or possible hazardous materials inside the package;
- c) any specific requirements which need to be verified, i.e. recording devices in the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be used for such Carriage (ATP)

Transport Packaging — Temperature controlled transport packages for parcel shipping —

Part 2: General specifications of testing

1 Scope

This document specifies the test methods of temperature-controlled packages for parcel shipping. Tests include physical, thermal conductivity and insulation performances of transport packages that use insulation for the purpose of blocking thermal conduction between the inside and the outside of a product package that need temperature control.

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 21067-1, *Packaging — Vocabulary — Part 1: General terms*

ISO 2233, *Packaging — Complete, filled transport packages and unit loads — Conditioning for testing*

ISO 4180, *Packaging — Complete, filled transport packages — General rules for the compilation of performance test schedules*

ISO 22007-1, *Plastics — Determination of thermal conductivity and thermal diffusivity — Part 1: General principles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21067-1 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

eutectic system

material or mixture in which phase change occurs at a pre-designed temperature

3.2

phase changing material

PCM

material that absorbs or releases large amounts of thermal energy when changing from one phase to another

3.3

outside atmosphere temperature

air temperature outside the transport package