
Packaging — Transport packaging for dangerous goods — Test methods

*Emballages — Emballages de transport pour marchandises
dangereuses — Méthodes d'essai*



This document is a preview generated by EBS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, 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
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Test report	2
5 Selection and preparation of packaging, IBCs and large packaging for testing	2
5.1 Selection of packaging, IBCs and large packaging	2
5.2 Information to be provided with packaging, IBCs and large packaging	2
5.3 Selection of contents and filling of packaging, IBCs and large packaging prior to testing	3
5.4 Closing packaging, IBCs and large packaging	5
5.5 Check of design type specification with requirements	6
5.6 Conformity check of test samples with design type specification	6
6 Test methods	7
7 Facilities for testing	7
7.1 General requirements	7
7.2 Accuracy of measurement equipment	7
7.3 Accuracy of measurements in testing	8
7.4 Climatic conditions	8
Annex A (normative) Test report	9
Annex B (normative) Packaging specifications	11
Annex C (normative) IBC specifications	22
Annex D (normative) Large packaging specifications	29
Annex E (informative) Type of contents	32
Annex F (normative) Drop test	33
Annex G (normative) Leakproofness test	36
Annex H (normative) Hydraulic pressure test	38
Annex I (normative) Stacking test	40
Annex J (normative) Water spray test	44
Annex K (normative) Bottom lift test	45
Annex L (normative) Top lift test	46
Annex M (normative) Tear test	47
Annex N (normative) Topple test	48
Annex O (normative) Righting test	49
Annex P (normative) Puncture test	50
Annex Q (normative) Vibration test	51
Bibliography	52

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. 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. 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.

The committee responsible for this document is CEN/TC 261, *Packaging*, in collaboration with Technical Committee ISO/TC 122, *Packaging*, Subcommittee SC 3, *Performance requirements and tests for means of packaging, packages and unit loads* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Introduction

This International Standard was developed to provide requirements and test procedures to meet the multi-modal United Nations Recommendations on the Transport of Dangerous Goods Model Regulations referred to as “UN recommendations” throughout this International Standard, and successful passing of the tests may lead to the allocation of an appropriate UN packaging mark. The UN Recommendations have been developed by the United Nations Sub Committee of Experts on the Transport of Dangerous Goods as a ‘model regulation’ in the light of technical progress, the advent of new substances and materials, the exigencies of modern transport systems and, above all, the need to ensure the safety of people, property and the environment. Amongst other aspects, the UN Recommendations cover principles of classification and definition of classes, listing of the principal dangerous goods, general packing requirements, testing procedures, marking, labelling or placarding, and shipping documents. There are in addition special recommendations related to particular classes of goods.

The UN Recommendations are given legal entity by the provisions of a series of international modal agreements and national legislation for the transport of dangerous goods. The international agreements include the following:

- The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) (covering most of Europe).^[1]
- Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) (covering most of Europe, parts of North Africa and the Middle East).^[2]
- The International Maritime Dangerous Goods Code (IMDG Code) (worldwide).^[3]
- The International Civil Aviation Organization’s Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TIs) (worldwide).^[4]

The application of this International Standard will need to take account the requirements of these international agreements and the relevant national regulations for domestic transport of dangerous goods.

It is important to note that there will be certain modal differences from the UN Recommendations and that the schedule for revision of the Recommendations and modal provisions may lead to temporary inconsistencies with this International Standard.

It is noted that success in the tests and the allocation of an official UN mark do not on their own authorize the use of a packaging for any dangerous goods, which are subject to the packing instructions published in the various modal regulations.

This International Standard is based on Revision 17 of the UN Recommendations.

Packaging — Transport packaging for dangerous goods

— Test methods

1 Scope

This International Standard specifies the information needed for the design type testing of packaging, Intermediate Bulk Containers (IBCs) and large packaging intended for use in the transport of dangerous goods.

NOTE 1 This International Standard can be used in conjunction with one or more of the international regulations set out in the Bibliography.

NOTE 2 The term “packaging” includes packaging for Class 6.2 infectious substances according to the United Nations.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2206:1987, *Packaging — Complete, filled transport packages — Identification of parts when testing*

ISO 2248:1985, *Packaging — Complete, filled transport packages — Vertical impact testing by dropping*

ISO 2875:2000, *Packaging — Complete, filled transport packages and unit load — Water-spray test*

ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories*

United Nations Recommendations on the Transport of Dangerous Goods — Model Regulations

3 Terms and definitions

For the purposes of this document, the terms and definitions given in the UN Recommendations, Chapter 1.2.1, and the following apply.

3.1

brimful capacity

volume of water in litres held by the packaging, IBC, inner packaging of a combination packaging and/or large packaging, when filled through the designed filling orifice to the point of overflowing in its normal position of filling, and considered for testing purposes as maximum capacity

3.2

nominal capacity

capacity in litres which, by convention, is used to represent a class of packaging of a similar brimful capacity

3.3

single packaging

means of packaging that does not require an inner packaging to be capable of performing its containment function and it includes composite packaging