

International Convention for Safe Containers (CSC), 02-12-1972

International Convention for Safe Containers (CSC)

Preamble

The Contracting Parties,

Recognizing the need to maintain a high level of safety of human life in the handling, stacking and transporting of containers,

Mindful of the need to facilitate international container transport,

Recognizing, in this context, the advantages of formalizing common international safety requirements,

Considering that this end may best be achieved by the conclusion of a Convention,

Have decided to formalize structural requirements to ensure safety in the handling, stacking and transporting of containers in the course of normal operations, and to this end

Have agreed as follows:

Article I. General Obligation under the present Convention

The Contracting Parties undertake to give effect to the provisions of the present Convention and the Annexes hereto, which shall constitute an integral part of the present Convention.

Article II. Definitions

For the purpose of the present Convention, unless expressly provided otherwise:

1. "Container" means an article of transport equipment:
 - (a) of a permanent character and accordingly strong enough to be suitable for repeated use;
 - (b) specially designed to facilitate the transport of goods, by one or more modes of transport, without intermediate reloading;
 - (c) designed to be secured and/or readily handled, having corner fittings for these purposes;
 - (d) of a size such that the area enclosed by the four outer bottom corners is either:
 - (i) at least 14 sq.m. (150 sq.ft.) or
 - (ii) at least 7 sq.m. (75 sq.ft.) if it is fitted with top corner fittings;the term "container" includes neither vehicles nor packaging; however, containers when carried on chassis are included.
2. "Corner fittings" means an arrangement of apertures and faces at the top and/or bottom of a container for the purposes of handling, stacking and/or securing.
3. "Administration" means the Government of a Contracting Party under whose authority containers are approved.
4. "Approved" means approved by the Administration.
5. "Approval" means the decision by an Administration that a design type or a container is safe within the terms of the present Convention.
6. "International transport" means transport between points of departure and destination situated in the territory of two countries to at least one of which the present Convention

applies. The present Convention shall also apply when part of a transport operation between two countries takes place in the territory of a country to which the present Convention applies.

7. "Cargo" means any goods, wares, merchandise and articles of every kind whatsoever carried in the containers.
8. "New container" means a container the construction of which was commenced on or after the date of entry into force of the present Convention.
9. "Existing container" means a container which is not a new container.
10. "Owner" means the owner as provided for under the national law of the Contracting Party or the lessee or bailee, if an agreement between the parties provides for the exercise of the owner's responsibility for maintenance and examination of the container by such lessee or bailee.
11. "Type of container" means the design type approved by the Administration.
12. "Type-series container" means any container manufactured in accordance with the approved design type.
13. "Prototype" means a container representative of those manufactured or to be manufactured in a design type series.
14. "Maximum Operating Gross Weight or Rating" or "R" means the maximum allowable combined weight of the container and its cargo.
15. "Tare Weight" means the weight of the empty container including permanently affixed ancillary equipment.
16. "Maximum Permissible Payload" or "P" means the difference between maximum operating gross weight or rating and tare weight.

Article III. Application

1. The present Convention applies to new and existing containers used in international transport, excluding containers specially designed for air transport.
2. Every new container shall be approved in accordance with the provisions either for type-testing or for individual testing as contained in Annex I.
3. Every existing container shall be approved in accordance with the relevant provisions for approval of existing containers set out in Annex I within 5 years from the date of entry into force of the present Convention.

Article IV. Testing, Inspection, Approval and Maintenance

1. For the enforcement of the provisions in Annex I every Administration shall establish an effective procedure for the testing, inspection and approval of containers in accordance with the criteria established in the present Convention, provided however that an Administration may entrust such testing, inspection and approval to organizations duly authorized by it.
2. An Administration which entrusts such testing, inspection and approval to an organization shall inform the Secretary-General of the Inter-Governmental Maritime Consultative Organization (hereinafter referred to as "the Organization") for communication to Contracting Parties.
3. Application for approval may be made to the Administration of any Contracting Party.
4. Every container shall be maintained in a safe condition in accordance with the provisions of Annex I.
5. If an approved container does not in fact comply with the requirements of Annexes I and II the Administration concerned shall take such steps as it deems necessary to bring the container into compliance with such requirements or to withdraw the approval.

Article V. Acceptance of Approval

1. Approval under the authority of a Contracting Party, granted under the terms of the present Convention, shall be accepted by the other Contracting Parties for all purposes

covered by the present Convention. It shall be regarded by the other Contracting Parties as having the same force as an approval issued by them.

2. A Contracting Party shall not impose any other structural safety requirements or tests on containers covered by the present Convention, provided however that nothing in the present Convention shall preclude the application of provisions of national regulations or legislation or of international agreements, prescribing additional structural safety requirements or tests for containers specially designed for the transport of dangerous goods, or for those features unique to containers carrying bulk liquids or for containers when carried by air. The term "dangerous goods" shall have that meaning assigned to it by international agreements.

Article VI. Control

1. Every container which has been approved under article III shall be subject to control in the territory of the Contracting Parties by officers duly authorized by such Contracting Parties. This control shall be limited to verifying that the container carries a valid Safety Approval Plate as required by the present Convention, unless there is significant evidence for believing that the condition of the container is such as to create an obvious risk to safety. In that case the officer carrying out the control shall only exercise it in so far as it may be necessary to ensure that the container is restored to a safe condition before it continues in service.
2. Where the container appears to have become unsafe as a result of a defect which may have existed when the container was approved, the Administration responsible for that approval shall be informed by the Contracting Party which detected the defect.

Article VII. Signature, ratification, acceptance, approval and accession

1. The present Convention shall be open for signature until 15 January 1973 at the Office of the United Nations at Geneva and subsequently from 1 February 1973 until 31 December 1973 inclusive at the Headquarters of the Organization at London by all States Members of the United Nations or Members of any of the Specialized Agencies or of the International Atomic Energy Agency or Parties to the Statute of the International Court of Justice, and by any other State invited by the General Assembly of the United Nations to become a Party to the present Convention.
2. The present Convention is subject to ratification, acceptance or approval by States which have signed it.
3. The present Convention shall remain open for accession by any State referred to in paragraph 1.
4. Instruments of ratification, acceptance, approval or accession shall be deposited with the Secretary-General of the Organization (hereinafter referred to as "the Secretary-General").

Article VIII. Entry into force

1. The present Convention shall enter into force twelve months from the date of the deposit of the tenth instrument of ratification, acceptance, approval or accession.
2. For each State ratifying, accepting, approving or acceding to the present Convention after the deposit of the tenth instrument of ratification, acceptance, approval or accession, the present Convention shall enter into force twelve months after the date of the deposit by such State of its instrument of ratification, acceptance, approval or accession.
3. Any State which becomes a Party to the present Convention after the entry into force of an amendment shall, failing an expression of a different intention by that State,
 - (a) be considered as a Party to the Convention as amended; and
 - (b) be considered as a Party to the unamended Convention in relation to any Party to the

Convention not bound by the amendment.

Article IX. Procedure for amending any part or parts of the present Convention

1. The present Convention may be amended upon the proposal of a Contracting Party by any of the procedures specified in this article.
2. Amendment after consideration in the Organization:
 - (a) Upon the request of a Contracting Party, any amendment proposed by it to the present Convention shall be considered in the Organization. If adopted by a majority of two-thirds of those present and voting in the Maritime Safety Committee of the Organization, to which all Contracting Parties shall have been invited to participate and vote, such amendment shall be communicated to all Members of the Organization and all Contracting Parties at least six months prior to its consideration by the Assembly of the Organization. Any Contracting Party which is not a Member of the Organization shall be entitled to participate and vote when the amendment is considered by the Assembly.
 - (b) If adopted by a two-thirds majority of those present and voting in the Assembly, and if such majority includes a two-thirds majority of the Contracting Parties present and voting, the amendment shall be communicated by the Secretary-General to all Contracting Parties for their acceptance.
 - (c) Such amendment shall come into force twelve months after the date on which it is accepted by two-thirds of the Contracting Parties. The amendment shall come into force with respect to all Contracting Parties except those which, before it comes into force, make a declaration that they do not accept the amendment.
3. Amendment by a Conference:

Upon the request of a Contracting Party, concurred in by at least one-third of the Contracting Parties, a Conference to which the States referred to in article VII shall be invited will be convened by the Secretary-General.

Article X. Special procedure for amending the Annexes

1. Any amendment to the Annexes proposed by a Contracting Party shall be considered in the Organization at the request of that Party.
2. If adopted by a two-thirds majority of those present and voting in the Maritime Safety Committee of the Organization to which all Contracting Parties shall have been invited to participate and to vote, and if such majority includes a two-thirds majority of the Contracting Parties present and voting, such amendment shall be communicated by the Secretary-General to all Contracting Parties for their acceptance.
3. Such an amendment shall enter into force on a date to be determined by the Maritime Safety Committee at the time of its adoption unless, by a prior date determined by the Maritime Safety Committee at the same time, one-fifth or five of the Contracting Parties, whichever number is less, notify the Secretary-General of their objection to the amendment. Determination by the Maritime Safety Committee of the dates referred to in this paragraph shall be by a two-thirds majority of those present and voting, which majority shall include a two-thirds majority of the Contracting Parties present and voting.
4. On entry into force any amendment shall, for all Contracting Parties which have not objected to the amendment, replace and supersede any previous provision to which the amendment refers; an objection made by a Contracting Party shall not be binding on other Contracting Parties as to acceptance of containers to which the present Convention applies.
5. The Secretary-General shall inform all Contracting Parties and Members of the Organization of any request and communication under this article and the date on which any amendment enters into force.

6. Where a proposed amendment to the Annexes has been considered but not adopted by the Maritime Safety Committee, any Contracting Party may request the convening of a Conference to which the States referred to in article VII shall be invited. Upon receipt of notification of concurrence by at least one-third of the other Contracting Parties such a Conference shall be convened by the Secretary-General to consider amendments to the Annexes.

Article XI. Denunciation

1. Any Contracting Party may denounce the present Convention by effecting the deposit of an instrument with the Secretary-General. The denunciation shall take effect one year from the date of such deposit with the Secretary-General.
2. A Contracting Party which has communicated an objection to an amendment to the Annexes may denounce the present Convention and such denunciation shall take effect on the date of entry into force of such an amendment.

Article XII. Termination

The present Convention shall cease to be in force if the number of Contracting Parties is less than five for any period of twelve consecutive months.

Article XIII. Settlement of Disputes

1. Any dispute between two or more Contracting Parties concerning the interpretation or application of the present Convention which cannot be settled by negotiation or other means of settlement shall, at the request of one of them, be referred to an arbitration tribunal composed as follows: each party to the dispute shall appoint an arbitrator and these two arbitrators shall appoint a third arbitrator, who shall be the Chairman. If, three months after receipt of a request, one of the parties has failed to appoint an arbitrator or if the arbitrators have failed to elect the Chairman, any of the parties may request the Secretary-General to appoint an arbitrator or the Chairman of the arbitration tribunal.
2. The decision of the arbitration tribunal established under the provisions of paragraph 1 shall be binding on the parties to the dispute.
3. The arbitration tribunal shall determine its own rules of procedure.
4. Decisions of the arbitration tribunal, both as to its procedure and its place of meeting and as to any controversy laid before it, shall be taken by majority vote.
5. Any controversy which may arise between the parties to the dispute as regards the interpretation and execution of the award may be submitted by any of the parties for judgment to the arbitration tribunal which made the award.

Article XIV. Reservations

1. Reservations to the present Convention shall be permitted, excepting those relating to the provisions of articles I - VI, XIII, the present article and the Annexes, on condition that such reservations are communicated in writing and, if communicated before the deposit of the instrument of ratification, acceptance, approval or accession, are confirmed in that instrument. The Secretary-General shall communicate such reservations to all States referred to in article VII.
2. Any reservation made in accordance with paragraph 1:
 - (a) modifies for the Contracting Party which made the reservation the provisions of the present Convention to which the reservation relates to the extent of the reservation; and
 - (b) modifies those provisions to the same extent for the other Contracting Parties in their relations with the Contracting Party which entered the reservation.

3. Any Contracting Party which has formulated a reservation under paragraph 1 may withdraw it at any time by notification to the Secretary-General.

Article XV. Notification

In addition to the notifications and communications provided for in articles IX, X and XIV, the Secretary-General shall notify all the States referred to in article VII of the following:

- (a) signatures, ratifications, acceptances, approvals and accessions under article VII;
- (b) the dates of entry into force of the present Convention in accordance with article VIII;
- (c) the date of entry into force of amendments to the present Convention in accordance with articles IX and X;
- (d) denunciations under article XI;
- (e) the termination of the present Convention under article XII.

Article XVI. Authentic texts

The original of the present Convention, of which the Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General, who shall communicate certified true copies to all States referred to in article VII.

IN WITNESS WHEREOF the undersigned Plenipotentiaries, being duly authorized thereto by their respective Governments, have signed the present Convention.

DONE at Geneva this second day of December, one thousand nine hundred and seventy-two.

Annex I. Regulations for the testing, inspection, approval and maintenance of containers

CHAPTER I. REGULATIONS COMMON TO ALL SYSTEMS OF APPROVAL

General Provisions

The following definitions shall be applied for the purpose of this annex:

The letter *g* means the standard acceleration of gravity; *g* equals 9.8 m/s^2 .

The word *load*, when used to describe a physical quantity to which units may be ascribed, signifies mass.

Maximum operating gross mass or *Rating* or *R* means the maximum allowable sum of the mass of the container and its cargo. The letter *R* is expressed in units of mass. Where the annexes are based on gravitational forces derived from this value, that force, which is an inertial force, is indicated as *Rg*.

Maximum permissible payload or *P* means the difference between maximum operating gross mass or rating and tare. The letter *P* is expressed in units of mass. Where the annexes are based on the gravitational forces derived from this value, that force, which is an inertial force, is indicated as *Pg*.

Tare means the mass of the empty container, including permanently affixed ancillary equipment.

Regulation 1. Safety Approval Plate

1.

- (a) A Safety Approval Plate conforming to the specifications set out in the Appendix to this Annex shall be permanently affixed to every approved container at a readily visible place, adjacent to any other approval plate issued for official purposes, where it would not be easily damaged.
- (b) On each container, all maximum operating gross mass markings shall be consistent with the maximum operating gross mass information on the Safety Approval Plate.
- (c) The owner of the container shall remove the Safety Approval Plate on the container if:
 - the container has been modified in a manner which would void the original approval and the information found on the Safety Approval Plate, or
 - the container is removed from service and is not being maintained in accordance with the Convention, or

-if the approval has been withdrawn by the Administration.

2.
 - (a) The plate shall contain the following information in at least the English or French language:
"CSC SAFETY APPROVAL"
Country of approval and approval reference
Date (month and year) of manufacture
Manufacturer's identification number of the container or, in the case of existing containers for which that number is unknown, the number allotted by the Administration
Maximum operating gross mass (kg and lbs)
Allowable stacking load for 1.8 g (kg and lbs)
Transverse racking test force (newtons)
 - (b) A blank space should be reserved on the Plate for insertion of end-wall and/or side-wall strength values (factors) in accordance with paragraph 3 of this Regulation and Annex II, tests 6 and 7. A blank space should also be reserved on the Plate for the first and subsequent maintenance examination dates (month and year) when used.
3. Where the Administration considers that a new container satisfies the requirements of the present Convention in respect of safety and if, for such container, the end-wall and/or side-wall strength values (factor) are designed to be greater or less than those stipulated in Annex II, such values shall be indicated on the Safety Approval Plate. Where the stacking or racking values are less than 192,000 kg or 150 kN, respectively, the container shall be considered as having limited stacking or racking capacity and shall be conspicuously marked, as required under the relevant standards, at or before their next scheduled examination or before any other date approved by the Administration, provided this is not later than 1 July 2015.
4. The presence of the Safety Approval Plate does not remove the necessity of displaying such labels or other information as may be required by other regulations which may be in force.
5. A container, the construction of which was completed prior to 1 July 2014, may retain the Safety Approval Plate as permitted by the Convention prior to that date as long as no structural modifications occur to that container.

Regulation 2. Maintenance and Examination

1. The owner of the container shall be responsible for maintaining it in safe condition.
2.
 - (a) The owner of an approved container shall examine the container or have it examined in accordance with the procedure either prescribed or approved by the Contracting Party concerned, at intervals appropriate to operating conditions.
 - (b) The date (month and year) before which a new container shall undergo its first examination shall be marked on the Safety Approval Plate.
 - (c) The date (month and year) before which the container shall be re-examined shall be clearly marked on the container on or as close as practicable to the Safety Approval Plate and in a manner acceptable to that Contracting Party which prescribed or approved the particular examination procedure involved.
 - (d) The interval from the date of manufacture to the date of the first examination shall not exceed five years. Subsequent examination of new containers and re-examination of existing containers shall be at intervals of not more than 30 months. All examinations shall determine whether the container has any defects which could place any person in danger.
3.
 - (a) As an alternative to paragraph 2, the Contracting Party concerned may approve a continuous examination programme if satisfied, on evidence submitted by the owner, that such a programme provides a standard of safety not inferior to the one set out in paragraph 2 above.

- (b) To indicate that the container is operated under an approved continuous examination programme, a mark showing the letters “ACEP” and the identification of the Contracting Party which has granted approval of the programme shall be displayed on the container on or as close as practicable to the Safety Approval Plate.
 - (c) All examinations performed under such a programme shall determine whether a container has any defects which could place any person in danger. They shall be performed in connexion with a major repair, refurbishment, or on-hire/off-hire interchange and in no case less than once every 30 months.
4. As a minimum, approved programmes should be reviewed once every 10 years to ensure their continued viability. In order to ensure uniformity by all involved in the inspection of containers and their ongoing operational safety, the Contracting Party concerned shall ensure the following elements are covered in each prescribed periodic or approved continuous examination programme:
- .1 methods, scope and criteria to be used during examinations;
 - .2 frequency of examinations;
 - .3 qualifications of personnel to carry out examinations;
 - .4 system of keeping records and documents that will capture:
 - .1 the owner’s unique serial number of the container;
 - .2 the date on which the examination was carried out;
 - .3 identification of the competent person who carried out the examination;
 - .4 the name and location of the organization where the examination was carried out;
 - .5 the results of the examination; and
 - .6 in the case of a Periodic Examination Scheme (PES), the Next Examination Date (NED);
 - .5 a system for recording and updating the identification numbers of all containers covered by the appropriate examination scheme;
 - .6 methods and systems for maintenance criteria that addresses the design characteristics of the specific containers;
 - .7 provisions for maintaining leased containers if different than those used for owned containers; and
 - .8 conditions and procedures for adding containers into an already approved programme.
5. The Contracting Party shall carry out periodic audits of approved programmes to ensure compliance with the provisions approved by the Contracting Party. The Contracting Party shall withdraw any approval when the conditions of approval are no longer complied with.
6. For the purpose of this Regulation “the Contracting Party concerned” is the Contracting Party of the territory in which the owner is domiciled or has his head office.

However, in the event that the owner is domiciled or has his head office in a country the government of which has not yet made arrangements for prescribing or approving an examination scheme and until such time as the arrangements have been made the owner may use the procedure prescribed or approved by the Administration of a Contracting Party which is prepared to act as “the Contracting Party concerned”. The owner shall comply with the conditions for the use of such procedures set by the Administration in question.

- 7. Administrations shall make information on approved Continuous Examination Programmes publicly available.

CHAPTER II. - REGULATIONS FOR APPROVAL OF NEW CONTAINERS BY DESIGN TYPE

Regulation 3. Approval of New Containers

To qualify for approval for safety purposes under the present Convention all new containers shall comply with the requirements set out in Annex II.

Regulation 4. Design Type Approval

In the case of containers for which an application for approval has been submitted, the Administration will examine designs and witness testing of a prototype container to ensure that the containers will conform with the requirements set out in Annex II. When satisfied, the Administration shall notify the applicant in writing that the container meets the requirements of the present Convention and this notification shall entitle the manufacturer to affix the Safety Approval Plate to every container of the design type series.

Regulation 5. Provisions for Approval by Design Type

1. Where the containers are to be manufactured by design type series, application made to an Administration for approval by design type shall be accompanied by drawings, a design specification of the type of container to be approved and such other data as may be required by the Administration.
2. The applicant shall state the identification symbols which will be assigned by the manufacturer to the container to which the application for approval relates.
3. The application shall also be accompanied by an assurance from the manufacturer that he will:
 - (a) produce to the Administration such containers of the design type concerned as the Administration may wish to examine;
 - (b) advise the Administration of any change in the design or specification and await its approval before affixing the Safety Approval Plate to the container;
 - (c) affix the Safety Approval Plate to each container in the design type series and to no others;
 - (d) keep a record of containers manufactured to the approved design type. This record shall at least contain the manufacturer's identification numbers, dates of delivery and names and addresses of customers to whom the containers are delivered.
4. Approval may be granted by the Administration to containers manufactured as modifications of an approved design type if the Administration is satisfied that the modifications do not affect the validity of tests conducted in the course of design type approval.
5. The Administration shall not confer on a manufacturer authority to affix Safety Approval Plates on the basis of design type approval unless satisfied that the manufacturer has instituted internal production-control features to ensure that the containers produced will conform to the approved prototype.

Regulation 6. Examination during Production

In order to ensure that containers of the same design type series are manufactured to the approved design, the Administration shall examine or test as many units as it considers necessary, at any stage during production of the design type series concerned.

Regulation 7. Notification of Administration

The manufacturer shall notify the Administration prior to commencement of production of each new series of containers to be manufactured in accordance with an approved design type.

CHAPTER III. - REGULATIONS FOR APPROVAL OF NEW CONTAINERS BY INDIVIDUAL APPROVAL

Regulation 8. Approval of Individual Containers

Approval of individual containers may be granted where the Administration, after examination and witnessing of tests, is satisfied that the container meets the requirements of the present Convention; the Administration, when so satisfied, shall notify the applicant in writing of

approval and this notification shall entitle him to affix the Safety Approval Plate to such container.

CHAPTER IV. REGULATIONS FOR APPROVAL OF EXISTING CONTAINERS AND NEW CONTAINERS NOT APPROVED AT TIME OF MANUFACTURE

Regulation 9. Approval of existing containers

1. If, within 5 years from the date of entry into force of the present Convention, the owner of an existing container presents the following information to an Administration:
 - (a) date and place of manufacture;
 - (b) manufacturer's identification number of the container if available;
 - (c) maximum operating gross mass capability;
 - (d)
 - (i) evidence that a container of this type has been safely operated in maritime and/or inland transport for a period of at least two years, or
 - (ii) evidence to the satisfaction of the Administration that the container was manufactured to a design type which had been tested and found to comply with the technical conditions set out in Annex II, with the exception of those technical conditions relating to the end-wall and sidewall strength tests, or
 - (iii) evidence that the container was constructed to standards which, in the opinion of the Administration, were equivalent to the technical conditions set out in Annex II, with the exception of those technical conditions relating to the end-wall and side-wall strength tests;
 - (e) allowable stacking load for 1.8 g (kg and lbs); and
 - (f) such other data as required for the Safety Approval Plate,

then the Administration, after investigation, shall notify the owner in writing whether approval is granted; and if so, this notification shall entitle the owner to affix the Safety Approval Plate after an examination of the container concerned has been carried out in accordance with Regulation 2.

The examination of the container concerned and the affixing of the Safety Approval Plate shall be accomplished not later than 1 January 1985.

2. Existing containers which do not qualify for approval under paragraph 1 of this Regulation may be presented for approval under the provisions of Chapter II or Chapter III of this Annex. For such containers the requirements of Annex II relating to end-wall and/or sidewall strength tests shall not apply. The Administration may, if it is satisfied that the containers in question have been in service, waive such of the requirements in respect of presentation of drawings and testing, other than the lifting and floor-strength tests, as it may deem appropriate.

Regulation 10. Approval of new containers not approved at time of manufacture

If, on or before 6 September 1982, the owner of a new container which was not approved at the time of manufacture presents the following information to an Administration:

- (a) date and place of manufacture;
- (b) manufacturer's identification number of the container if available;
- (c) maximum operating gross mass capability;
- (d) evidence to the satisfaction of the Administration that the container was manufactured to a design type which had been tested and found to comply with the technical conditions set out in Annex II;
- (e) allowable stacking load for 1.8 g (kg and lbs); and
- (f) such other data as required for the Safety Approval Plate;

the Administration, after investigation, may approve the container, notwithstanding the provisions of Chapter II. Where approval is granted, such approval shall be notified to the owner in writing, and this notification shall entitle the owner to affix the Safety Approval Plate after an examination of the container concerned has been carried out in accordance with Regulation 2. The examination of the container concerned and the affixing of the Safety

Approval Plate shall be accomplished not later than 1 January 1985.

CHAPTER V . - REGULATIONS FOR APPROVAL OF MODIFIED CONTAINERS

Regulation 11. Approval of Modified Containers

The owner of an approved container that has been modified in a manner resulting in structural changes shall notify the Administration or an approved organization duly authorized by it of those changes. The Administration or authorized organization may require retesting of the modified container as appropriate prior to recertification.

Appendix

The Safety Approval Plate, conforming to the model reproduced below, shall take the form of a permanent, non-corrosive, fire-proof rectangular plate measuring not less than 200 mm by 100 mm. The words "CSC Safety Approval" of a minimum letter height of 8 mm and all other words and numbers of a minimum height of 5 mm shall be stamped into, embossed on or indicated on the surface of the Plate in any other permanent and legible way.

CSC SAFETY APPROVAL		
1	[GB - L/749/2/7/75]	
2	Date manufactured	
3	Identification No.	
4	MAXIMUM OPERATING GROSS MASS kg lbs	↑
5	ALLOWABLE STACKING LOAD FOR 1.8 g kglbs	>= 100 mm
6	TRANSVERSE RACKING TEST FORCE newtons	↓
7		
8		
9		
← >= 200 mm →		

1. Country of Approval and Approval Reference as given in the example on line 1. (The country of Approval should be indicated by means of the distinguishing sign used to indicate country of registration of motor vehicles in international road traffic).
2. Date (month and year) of manufacture.
3. Manufacturer's identification number of the container or, in the case of existing containers for which that number is unknown, the number allotted by the Administration.
4. Maximum operating gross mass (kg and lbs).
5. Allowable stacking load for 1.8 g (kg and lbs).
6. Transverse racking test force (newtons).
7. End-wall strength to be indicated on plate only if end-walls are designed to withstand a force of less or greater than 0.4 times the gravitational force by maximum permissible payload, i.e. 0.4Pg.
8. Side-wall strength to be indicated on plate only if the side-walls are designed to withstand a force of less or greater than 0.6 times the gravitational force by maximum permissible payload, i.e. 0.6Pg.
9. First maintenance examination date (month and year) for new containers and subsequent maintenance examination dates (month and year) if plate used for this purpose.
10. One door off stacking strength to be indicated on plate only if the container is approved for one door off operation. The marking shall show: ALLOWABLE STACKING LOAD ONE DOOR OFF FOR 1.8 g (... kg ... lbs). This marking shall be displayed immediately near the stacking test value (see line 5).
11. One door off racking strength to be indicated on plate only if the container is approved for one door off operation. The marking shall show: TRANSVERSE RACKING TEST FORCE ONE DOOR OFF (... newtons). This marking shall be displayed immediately near the racking test value (see line 6).

Annex II. Structural safety requirements and tests

General Provisions

The following definitions shall be applied for the purpose of this annex:

The letter *g* means the standard acceleration of gravity; *g* equals 9.8 m/s².

The word *load*, when used to describe a physical quantity to which units may be ascribed, signifies mass.

Maximum operating gross mass or *Rating* or *R* means the maximum allowable sum of the mass of the container and its cargo. The letter *R* is expressed in units of mass. Where the annexes are based on gravitational forces derived from this value, that force, which is an inertial force, is indicated as *Rg*.

Maximum permissible payload or *P* means the difference between maximum operating gross mass or rating and tare. The letter *P* is expressed in units of mass. Where the annexes are based on the gravitational forces derived from this value, that force, which is an inertial force, is indicated as *Pg*.

Tare means the mass of the empty container, including permanently affixed ancillary equipment.

Introduction

In setting the requirements of this annex, it is implicit that, in all phases of the operation of containers, the forces as a result of motion, location, stacking and gravitational effect of the loaded container and external forces will not exceed the design strength of the container. In particular, the following assumptions have been made:

- (a) the container will so be restrained that it is not subjected to forces in excess of those for which it has been designed;
- (b) the container will have its cargo stowed in accordance with the recommended practices of the trade so that the cargo does not impose upon the container forces in excess of those for which it has been designed.

Construction

- 1. A container made from any suitable material which satisfactorily performs the following tests without sustaining any permanent deformation or abnormality which would render it incapable of being used for its designed purpose shall be considered safe.
- 2. The dimensions, positioning and associated tolerances of corner fittings shall be checked having regard to the lifting and securing systems in which they will function.

Test loads and test procedures

Where appropriate to the design of the container, the following test loads and test procedures shall be applied to all kinds of containers under test:

TEST LOAD AND APPLIED FORCES	TEST PROCEDURES
1. LIFTING	
The container, having the prescribed internal loading, shall be lifted in such a way that no significant acceleration forces are applied. After lifting, the container shall be suspended or supported for five minutes and then lowered to the ground.	
(A) LIFTING FROM CORNER FITTINGS	
Internal load:	(i) Lifting from top corner fittings:

<p>A uniformly distributed load such that the sum of the mass of container and test load is equal to 2R. In the case of a tank container, when the test load of the internal load plus the tare is less than 2R, a supplementary load, distributed over the length of the tank, is to be added to the container.</p>		<p>Containers greater than 3,000 mm (10 ft.) (nominal) in length shall have lifting forces applied vertically at all four top corner fittings.</p>
		<p>Containers of 3,000 mm (10 ft.) (nominal) in length nor less shall have lifting forces applied at all four top corner fittings, in such a way that the angle between each lifting device and the vertical shall be 30°.</p>
<p>Externally applied forces:</p>		<p>(ii) <i>Lifting from bottom corner fittings:</i></p>
<p>Such as to lift the sum of a mass of 2R in the manner prescribed (under the heading TEST PROCEDURES).</p>		<p>Containers shall have lifting forces applied in such a manner that the lifting devices bear on the bottom corner fittings only. The lifting forces shall be applied at angles to the horizontal of: 30° for containers of length 12,000 mm (40 ft.) (nominal) or greater; 37° for containers of length 9,000 mm (30 ft.) (nominal) and up to but not including 12,000 mm (40 ft.) (nominal); 45° for containers of length 6,000 mm (20 ft.) (nominal) and up to but not including 9,000 mm (30 ft.) (nominal); 60° for containers of less than 6,000 mm (20 ft.) (nominal).</p>
<p>(B) LIFTING BY ANY OTHER ADDITIONAL METHODS</p>		
<p>Internal load:</p>		<p>(i) <i>Lifting from fork-lift pockets:</i></p>
<p>A uniformly distributed load such that the sum of the mass of container and test load is equal to 1.25R.</p>		<p>The container shall be placed on bars which are in the same horizontal plane, one bar being centred within each fork-lift pocket which is used for lifting the loaded container. The bars shall be of the same width as the forks intended to be used in the handling, and shall project into the fork pocket 75% of the length of the fork pocket.</p>
<p>Externally applied forces:</p>		<p>(ii) <i>Lifting from grapple-arm positions:</i></p>
<p>Such as to lift the sum of a mass of 1.25R in the manner prescribed (under the heading TEST PROCEDURES).</p>		<p>The container shall be placed on pads in the same horizontal plane, one under each grapple-arm position. These pads shall be of the same sizes as the lifting area of the grapple arms intended to be used.</p>
<p>Internal load:</p>		<p>iii) <i>Other methods:</i></p>
<p>A uniformly distributed load such that the sum of the mass of container and test load is equal to 1.25R. In the case of a tank container, when the test load of the internal load plus the tare is less than 1.25R, a supplementary load, distributed over the length of the tank, is to be added to the container.</p>		<p>Where containers are designed to be lifted in the loaded condition by any method not mentioned in (A) or (B)(i) and (ii) they shall also be tested with the internal load and externally applied forces representative of the acceleration conditions appropriate to that method.</p>
<p>Externally applied forces:</p>		
<p>Such as to lift the sum of a mass of 1.25R in the manner prescribed (under the heading TEST PROCEDURES).</p>		
<p>2. STACKING</p>		
<p>1. For conditions of international transport where the maximum vertical acceleration varies significantly from 1.8 g and when the container is reliably and effectively limited to such conditions of transport, the stacking load may be varied by the appropriate ratio of acceleration.</p>		
<p>2. On successful completion of this test, the container may be rated for the allowable superimposed static stacking load, which should be indicated on the Safety Approval Plate against the heading ALLOWABLE STACKING LOAD FOR 1.8 g (kg and lbs).</p>		
<p>Internal load:</p>		

A uniformly distributed load such that the sum of the mass of container and test load is equal to 1.8R. Tank containers may be tested in the tare condition.	The container, having the prescribed INTERNAL LOADING, shall be placed on four level pads which are in turn supported on a rigid horizontal surface, one under each bottom corner fitting or equivalent corner structure. The pads shall be centralized under the fittings and shall be of approximately the same plan dimensions as the fittings.
Externally applied forces:	
Such as to subject each of the four top corner fittings to a vertical downward force equal to 0.25 x 1.8 x the gravitational force of the allowable superimposed static stacking load.	Each EXTERNALLY APPLIED FORCE shall be applied to each of the corner fittings through a corresponding test corner fitting or through a pad of the same plan dimensions. The test corner fitting or pad shall be offset with respect to the top corner fitting of the container by 25 mm (1 in.) laterally and 38 mm (1½ in.) longitudinally.
3. CONCENTRATED LOADS	
(a) On roof	
Internal load:	
None.	
Externally applied forces:	
A concentrated gravitational force of 300 kg (660 lbs) uniformly distributed over an area of 600 mm x 300 mm (24 in x 12 in).	The externally applied forces shall be applied vertically downwards to the outer surface of the weakest area of the roof of the container.
3. CONCENTRATED LOADS	
(b) On floor	
Internal load:	
Two concentrated loads each of 2,730 kg (6,000 lbs) and each added to the container floor within a contact area of 142 cm ² (22 sq in).	The test should be made with the container resting on four level supports under its four bottom corners in such a manner that the base structure of the container is free to deflect.
Externally applied forces:	
None.	A testing device loaded to a mass of 5,460 kg (12,000 lbs), that is, 2,730 kg (6,000 lbs) on each of two surfaces, having, when loaded, a total contact area of 284 cm ² (44 sq in), that is, 142 cm ² (22 sq in) on each surface, the surface width being 180 mm (7 in) spaced 760 mm (30 in) apart, centre to centre, should be manoeuvred over the entire floor area of the container.
4. TRANSVERSE RACKING	
Internal load:	
None.	The container in tare condition shall be placed on four level supports one under each bottom corner and shall be restrained against lateral and vertical movement by means of anchor devices so arranged that the lateral restraint is provided only at the bottom corners diagonally opposite to those at which the forces are applied.
Externally applied forces:	
Such as to rack the end structures of the container sideways. The forces shall be equal to those for which the container was designed.	The EXTERNALLY APPLIED FORCES shall be applied either separately or simultaneously to each of the top corner fittings on one side of the container in lines parallel both to the base and to the planes of the ends of the container. The forces shall be applied first towards and then away from the top corner fittings. In the case of containers in which each end is symmetrical about its own vertical centreline, one side only need be tested, but both sides of containers with asymmetric ends shall be tested.
5. LONGITUDINAL RESTRAINT (STATIC TEST)	
When designing and constructing containers, it must be borne in mind that containers, when carried by inland modes of transport may sustain accelerations of 2 g applied horizontally in a longitudinal direction.	
Internal load:	
A uniformly distributed load, such that the sum of the mass of a container and test load is equal to the maximum operating gross mass or rating R. In the case of a tank container, when the mass of the internal load plus the tare is less than the maximum gross mass or rating, R, a supplementary load is to be added to the container.	The container having the prescribed INTERNAL LOADING shall be restrained longitudinally by securing the two bottom corner fittings or equivalent corner structures at one end to suitable anchor points.
Externally applied forces:	

Such as to subject each side of the container to longitudinal compressive and tensile forces of magnitude R_g , that is, a combined force of $2R_g$ on the base of the container as a whole.	The EXTERNALLY APPLIED FORCES shall be applied first towards and then away from the anchor points. Each side of the container shall be tested.
6. END-WALLS	
The end-walls should be capable of withstanding a force of not less than 0.4 times the force equal to gravitational force by maximum permissible payload. If, however, the end-walls are designed to withstand a force of less or greater than 0.4 times the gravitational force by maximum permissible payload, such a strength factor shall be indicated on the Safety Approval Plate in accordance with annex I, regulation 1.	
Internal load:	
Such as to subject the inside of an end-wall to a uniformly distributed force of $0.4P_g$ or such other force for which the container may be designed.	The prescribed INTERNAL LOADING shall be applied as follows: Both ends of a container shall be tested except where the ends are identical only one end need be tested. The end-walls of containers which do not have open sides or side doors may be tested separately or simultaneously.
	The end-walls of containers which do have open sides or side doors should be tested separately. When the ends are tested separately the reactions to the forces applied to the end-wall shall be confined to the base structure of the container.
Externally applied forces:	
None.	
7. SIDE-WALLS	
The side-walls should be capable of withstanding a force of not less than 0.6 times the force equal to the gravitational force by maximum permissible payload. If, however, the side-walls are designed to withstand a force of less or greater than 0.6 times the gravitational force by maximum permissible payload, such a strength factor shall be indicated on the Safety Approval Plate in accordance with annex I, regulation 1.	
Internal load:	
Such as to subject the inside of a side-wall to a uniformly distributed force of $0.6P_g$ or such other force for which the container may be designed.	The prescribed INTERNAL LOADING shall be applied as follows: Both sides of a container shall be tested except where the sides are identical only one side need be tested. Side-walls shall be tested separately and the reactions to the internal loading shall be confined to the corner fittings or equivalent corner structures. Open topped containers shall be tested in the condition in which they are designed to be operated, for example, with removable top members in position.
Externally applied forces:	
None.	
8. ONE DOOR OFF OPERATION	
8.1. Containers with one door removed have a significant reduction in their ability to withstand racking forces and, potentially, a reduction in stacking strength. The removal of a door on a container in operation is considered a modification of the container. Containers must be approved for one door off operation. Such approval shall be based on test results as set forth below. 8.2. On successful completion of the stacking test the container may be rated for the allowable superimposed stacking load, which shall be indicated on the Safety Approval Plate immediately below line 5: ALLOWABLE STACKING LOAD FOR 1.8 g (kg and lbs) ONE DOOR OFF. 8.3. On successful completion of the racking test the transverse racking test force shall be indicated on the Safety Approval Plate immediately below line 6: TRANSVERSE RACKING TEST FORCE ONE DOOR OFF (newtons).	
Stacking	
Internal load:	
A uniformly distributed load such that the sum of the mass of container and test load is equal to $1.8R$.	The test procedures shall be as set forth under 2 STACKING
Externally applied forces:	

Such as to subject each of the four top corner fittings to a vertical downward force equal to 0.25 x 1.8 x the gravitational force of the allowable superimposed static stacking load.	
Transverse racking	
Internal load:	
None.	The test procedures shall be as set forth under 4 TRANSVERSE RACKING
Externally applied forces:	
Such as to rack the end structures of the container sideways. The forces shall be equal to those for which the container was designed.	

Annex III. Control and verification

1. Introduction

Article VI of the Convention refers to the control measures that may be taken by Contracting Parties. Such control should be limited to verifying that the container carries a valid Safety Approval Plate, and an approved continuous examination programme (ACEP) or a valid Next Examination Date (NED) marking, unless there is significant evidence for believing that the condition of the container is such as to create an obvious risk to safety. This Annex provides specifics to enable authorized officers to assess the integrity of structurally sensitive components of containers and to help them decide whether a container is safe to continue in transportation or whether it should be stopped until remedial action has been taken. The criteria given are to be used to make immediate out of service determinations, and should not be used as repair or in-service criteria under a CSC ACEP or a periodic examination scheme.

2. Control measures

Authorized officers should consider the following:

- .1 control should be exercised on those containers that create an obvious risk to safety;
- .2 loaded containers with damages equal to, or in excess of, the criteria set forth below are deemed to place a person in danger. The authorized officer should stop those containers. However, the authorized officer may permit the onward movement of the container, if it is to be moved to its ultimate destination without lifting from its current means of transport;
- .3 empty containers with damages equal to, or in excess of, the criteria set forth below are also deemed to place a person in danger. Empty containers are typically repositioned for repair at an owner-selected depot provided they can be safely moved; this can involve either a domestic or an international move. Any damaged container being repositioned should be handled and transported with due regard to its structural deficiency;
- .4 authorized officers should notify the container owner, lessee or bailee, as appropriate, whenever a container is placed under control;
- .5 the provisions set forth in this Annex are not exhaustive for all types of containers or all possible deficiencies or combination of deficiencies;
- .6 damage to a container may appear serious without creating an obvious risk to safety. Some damage such as holes may infringe customs requirements but may not be structurally significant; and
- .7 major damage may be the result of significant impact which could be caused by improper handling of the container or other containers, or significant movement of the cargo within the container. Therefore, special attention should be given to signs of recent impact damage.

3. Training of authorized officers

The Contracting Party exercising control should ensure that authorized officers tasked to carry out these assessments and control measures receive the necessary training. This training should involve both theoretical and practical instruction.

4. Structurally sensitive components

- 4.1 The following components are structurally sensitive and should be examined for deficiencies in accordance with the following table:

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)		
		Structurally sensitive component	Serious deficiency requiring immediate out-of-service determination		Deficiency requiring advice to owner and restrictions for transport		Restrictions to be applied in case of deficiencies according to column (iii)	
			Empty container		Loaded container			
			Sea transport	Other modes	Sea transport	Other modes		
		Top rail	Local deformation to the rail in excess of 60 mm or separation or cracks or tears in the rail material in excess of 45 mm in length. (see Note 1)	Local deformation to the rail in excess of 40 mm or separation or cracks or tears in the rail material in excess of 10 mm in length. (see Note 1)	No restriction	No restriction	Bottom lifting not allowed, Top lifting allowed only by use of spreaders without chains	Bottom lifting not allowed, Top lifting allowed only by use of spreaders without chains
		Note 1: On some designs of tank containers the top rail is not a structurally significant component.						
		Bottom rail	Local deformation perpendicular to the rail in excess of 100 mm or separation cracks or tears in the rail's material in excess of 75 mm in length (see Note 2)	Local deformation perpendicular to the rail in excess of 60 mm or separation cracks or tears in the rail's material of the upper flange in excess of 25 mm in length; or of web in any length (see Note 2)	No restriction	No restriction	Lifting at (any) corner fitting not allowed	Lifting at (any) corner fitting not allowed
		Note 2: The rails material does not include the rail's bottom flange.						
		Header	Local deformation to the header in excess of 80 mm or cracks or tears in excess of 80 mm in length	Local deformation to the header in excess of 50 mm or cracks or tears in excess of 10 mm in length	Container shall not be overstacked	No restriction	Container shall not be overstacked	No restriction

Sill	Local deformation to the sill in excess of 100 mm or cracks or tears in excess of 100 mm in length.	Local deformation to the sill in excess of 60 mm or cracks or tears in excess of 10 mm in length	Container shall not be overstowed	No restrictions	Container shall not be overstowed	No restrictions
Corner posts	Local deformation to the post in excess of 50 mm or cracks or tears in excess of 50 mm in length	Local deformation to the post in excess of 30 mm or cracks or tears of any length	Container shall not be overstowed	No restrictions	Container shall not be overstowed	No restrictions
Corner and intermediate fittings	Missing corner fittings, any through cracks or tears in the fitting, any deformation of the fitting that precludes full engagement of the securing or lifting fittings (see Note 3) or any weld separation of adjoining components in excess of 50 mm in length	Weld separation of adjoining components of 50 mm or less	Container shall not be lifted on board a ship if the damaged fittings prevent safe lifting or securing.	Container shall be lifted and handled with special care	Container shall not be loaded on board a ship.	Container shall be lifted and handled with special care
		Any reduction in the thickness of the plate containing the top aperture that makes it less than 25 mm thick	Container shall be lifted and handled with special care Container shall not be overstowed when twistlocks have to be used	Container shall be lifted and handled with special care	Container shall not be lifted by the top corner fittings.	Container shall be lifted and handled with special care.
		Any reduction in the thickness of the plate containing the top aperture that makes it less than 26 mm thick	Container shall not be overstowed when fully automatic twistlocks are to be used	Container shall be lifted and handled with special care	Container shall not be used with fully automatic twistlocks.	Container shall be lifted and handled with special care.
		Note 3 The full engagement of securing or lifting fittings is precluded if there is any deformation of the fitting beyond 5 mm from its original plane, any aperture width greater than 66 mm, any aperture length greater than 127 mm or any reduction in thickness of the plate containing the top aperture that makes it less than 23 mm thick.				
Understructure	Two or more adjacent cross members missing or detached from the bottom rails. 20% or more of the total number of cross members missing or detached. (see Note 4)	One or two cross members missing or detached (see Note 4)	No restrictions	No restrictions	No restrictions	No restrictions
		More than two cross members missing or detached (see Notes 4 and 5)	No restrictions	No restrictions	Maximum payload shall be restricted to 0.5 x P	Maximum payload shall be restricted to 0.5 x P

		<p>Note 4: If onward transport is permitted, it is essential that detached cross members are precluded from falling free.</p> <p>Note 5: Careful cargo discharge is required as forklift capability of the understructure might be limited.</p>				
Locking rods	One or more inner locking rods are non-functional (see Note 6)	One or more outer locking rods are non-functional (see Note 6)	Container shall not be overstowed	No restriction	<p>Container shall not be overstowed. Cargo shall be secured against the container frame and the door shall not be used to absorb acceleration forces – otherwise maximum payload shall be restricted to 0.5 P</p>	<p>Cargo shall be secured against the container frame and the door shall not be used to absorb acceleration forces – otherwise maximum payload shall be restricted to 0.5 P</p>