

**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals**

**Sub-Committee of Experts on the Transport of Dangerous Goods**

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Item 6 (d) of the provisional agenda

**Miscellaneous proposals for amendments to the Model Regulations  
on the Transport of Dangerous Goods: other miscellaneous proposals**

**Harmonisation of the requirement “structurally serviceable”**

**Transmitted by the expert from Germany and the European Chemical  
Industry Council (CEFIC)**

This document provides Circular CSC.1/Circ.138/Rev.1.

4 ALBERT EMBANKMENT  
LONDON SE1 7SR  
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

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**REVISED RECOMMENDATIONS ON HARMONIZED INTERPRETATION  
AND IMPLEMENTATION OF THE INTERNATIONAL CONVENTION  
FOR SAFE CONTAINERS, 1972, AS AMENDED**

- 1 The Maritime Safety Committee, at its sixty-second session (24 to 28 May 1993), approved Recommendations on harmonized interpretation and implementation of the International Convention for Safe Containers, 1972, (CSC/Circ.100).
- 2 The Committee, at its seventy-fifth session (15 to 24 May 2002), agreed that information on the implementation of the requirements for material characteristics of the CSC Safety Plates should be circulated to all Contracting Parties to the CSC Convention (CSC/Circ.123).
- 3 The Committee, at its seventy-fifth session (15 to 24 May 2002), approved CSC/Circ.124 on Amendments to the harmonized interpretation and implementation of the International Convention for Safe Containers, 1972, (CSC/Circ.100).
- 4 The Committee, at its eightieth session (11 to 20 May 2005), recognizing the need for guidance to the officer exercising control under the provisions of article VI of the International Convention for Safe Containers, 1972, as amended, approved the *Guidance on serious structural deficiencies in containers* (CSC/Circ.134).
- 5 The Committee, at its eighty-sixth session (27 May to 5 June 2009), approved CSC.1/Circ.137 on *Amendments to the Guidance on serious structural deficiencies in containers* (CSC/Circ.134).
- 6 The Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its fourteenth session (21 to 25 September 2009), reviewed the aforementioned circulars, in order to remove ambiguities on the maintenance and examination, and control requirements for containers, and prepared a consolidated document.
- 7 The Committee, at its eighty-seventh session (12 to 21 May 2010), after having considered the above proposal by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its fourteenth session, approved the Revised Recommendations on harmonized interpretation and implementation of the International Convention for Safe Containers, 1972, as amended (CSC.1/Circ.138), which superseded CSC/Circ.100, CSC/Circ.123, CSC/Circ.124, CSC/Circ.134 and CSC.1/Circ.137.

8 The Maritime Safety Committee, at its ninety-second session (12 to 21 June 2013), having considered the proposal by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its seventeenth session, agreed to the amendments to the Revised Recommendations (CSC.1/Circ.138) and approved the Revised Recommendations on harmonized interpretation and implementation of the International Convention for Safe Containers, 1972, as amended, as set out in the annex.

9 Contracting Parties to the International Convention for Safe Containers, 1972, are invited to bring these Revised Recommendations to the attention of all parties concerned.

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## ANNEX

### REVISED RECOMMENDATIONS ON HARMONIZED INTERPRETATION AND IMPLEMENTATION OF THE INTERNATIONAL CONVENTION FOR SAFE CONTAINERS, 1972, AS AMENDED

#### 1 GENERAL

The various points concerning harmonized interpretation and implementation of the International Convention for Safe Containers (CSC), 1972, as amended on which consensus has been reached are given below.

#### 2 DEFINITIONS (article II, paragraphs 8 to 10)

2.1 *New container and existing container.* Where necessary, individual Administrations should determine the date on which the construction of a container shall be deemed to have commenced for purposes of determining whether a container should be considered as "new" or as "existing".

2.2 *Owner,* for the purpose of these Revised Recommendations also includes the owner's local representative.

2.3 For the purposes of these Revised Recommendations, the following definitions are used:

.1 *depot* means a repair or storage facility or location; and

.2 *structurally sensitive components* means those container components that are significant in allowing the container to be safely used in transportation; they are listed under paragraph 10.4 below and shown in figures 1 to 5.

#### 3 APPLICATION (article III, paragraph 1)

##### 3.1 Swap bodies/demountables

3.1.1 It is agreed that the CSC does not have to be applied to containers known as swap bodies/demountables and designed and used for carriage by road only or by rail and road only and which are without stacking capability and top lift facilities.

3.1.2 It is also agreed that CSC does not have to be applied to such swap bodies/demountables transported by sea on condition that they are mounted on a road vehicle or rail wagon. However, CSC does apply to swap bodies/demountables used in transoceanic services.

##### 3.2 Offshore containers

It is agreed that the CSC does not necessarily apply to offshore containers that are handled in open seas. Offshore containers are subject to different design, handling and testing parameters as determined by the Administration. Nonetheless offshore containers may be approved under the provisions of the CSC provided the containers meet all applicable provisions and requirements of the Convention<sup>1</sup>.

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<sup>1</sup> Refer to *Guidelines for the approval of offshore containers handled in open seas* (MSC/Circ.860).

### **3.3 Ship's gear carriers and bins**

3.3.1 It is agreed that the CSC does not necessarily apply to ship's gear carriers and bins, as skeletal platform based containers with fixed end posts and associated storage bins used for the storage of twist-locks, lashing bars, etc., are not used for international transport as defined by this Convention and so are not containers as defined. However, these specialist containers are carried aboard container and other ships and are handled in the same way as all other containers, and therefore present the same risks during loading and discharging from the ship.

3.3.2 Consequently, it is recommended that these units should be included in a maintenance and examination scheme and subject to periodic inspections.

## **4 ENTRY INTO FORCE (articles III and VIII)**

All containers should be inspected and affixed with Safety Approval Plates by the Administration of the Contracting Party not later than five years from the date of entry into force of the Convention for that Party.

## **5 TESTING, INSPECTION AND APPROVAL (article IV, paragraphs 1 and 2): SELECTION OF ORGANIZATIONS ENTRUSTED TO CARRY OUT THESE FUNCTIONS**

Administrations will require a basic description of the organizations to be entrusted with testing, inspection and approval functions, together with evidence of their technical capability to carry this out, and will have to satisfy themselves as to the financial well-being of such organizations. The Administrations will, furthermore, have to satisfy themselves that the organizations are free from undue influence by any container owner, operator, manufacturer, lessor, repairer and other concerned party who may have a vested interest in obtaining container approval.

## **6 APPROVAL OF CONTAINERS FOR FOREIGN OWNERS OR MANUFACTURERS (article IV, paragraph 3) AND RECIPROCITY**

6.1 Where possible, Contracting Parties should make every effort to provide facilities or means to grant approvals to foreign container owners or manufacturers seeking their approval of containers in accordance with the provisions of the Convention.

6.2 Approval of containers would be facilitated if classification societies or other organizations approved by one Contracting Party could be authorized to act for other contracting Parties under arrangements acceptable to the parties involved.

## **7 MAINTENANCE AND STRUCTURAL MODIFICATIONS (article IV)**

7.1 Development of detailed guidelines on standards of maintenance will create an unnecessary burden for Administrations attempting to implement the Convention as well as for owners. However, in order to ensure uniformity in the inspection of containers and their ongoing operational safety, the Contracting Party concerned should 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 (see section 12 below);

- .5 a system for recording and updating the identification numbers for 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.

7.2 All prescribed periodic or approved continuous examination programmes should be subject to a period of validity of the approval and shall be reviewed by the Administration not later than 10 years after approval or reapproval to ensure their continued viability.

7.3 Administrations should periodically evaluate, by audits or other equivalent means, that the provisions of the approved programme are being fully followed. Such evaluations should occur as determined by the Administration, but at least once every five years.

7.4 The interpretation of the provision "the owner of the container shall be responsible for maintaining it in safe condition" (annex I, regulation 2, paragraph 1 of the Convention) should be such that the owner of a container (as defined in article II, paragraph 10 of the Convention) should be held accountable to the Government of any territory on which the container is operated for the safe condition of that container.

7.5 The owner should be bound by the existing safety laws of such a territory and such law or regulation as may implement the control requirements of article VI of the Convention. Nevertheless the methods by which owners achieve, under the provisions of article IV, the safe condition of their containers, that is the appropriate combination of planned maintenance, procedures for refurbishment, refit and repair and the selection of organizations to perform this work, should be their own responsibility. If there is clear evidence for believing that an owner is repeatedly failing to achieve a satisfactory level of safety, the government of the territory in which the owner has his Head Office of domicile should be requested to ensure that appropriate corrective action is taken.

7.6 The responsibility of the owner to maintain his container in a safe condition includes the responsibility to ensure that any modifications carried out on an approved container do not adversely affect or render inaccurate the information recorded on the Safety Approval Plate. Under the provisions of annex I, chapter V, regulation 11, the owner of a container which 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 determine whether the results of the original tests conducted in accordance with annex II for the initial container approval remain valid for the modified container.

7.7 If an owner removes a container from service and it is no longer required to comply with the Convention or does not maintain that container in accordance with the provisions of the Convention, or makes structural modifications without following the procedures in paragraph 7.6 above, the owner must remove the Safety Approval Plate.

## **8 WITHDRAWAL OF APPROVAL (article IV, paragraph 5)**

8.1 With regard to withdrawal of approval, the *Administration concerned* should be considered as the Administration that issued the approval. While any Contracting Party may exercise control over container movement pursuant to article VI, only the Administration that approved the container has the right to withdraw its approval. When approval has been withdrawn, the Administration concerned should require the removal of the Safety Approval Plate.

## **9 ACCEPTANCE OF APPROVALS (article V)**

### **9.1 Records of approved Continuous Examination Programmes**

Administrations should maintain a list of approved Continuous Examination Programmes (ACEP) and make the list publicly available.

## **10 CONTROL (article VI)**

### **10.1 General**

10.1.1 This section concerns the control of containers under the Convention and does not address maintenance and examination issues.

10.1.2 For the purposes of effecting control (as envisaged in article VI of the Convention) Contracting Parties should only appoint authorized control officers of government bodies. Article VI requires that such control should be limited to verifying that the container carries a valid Safety Approval Plate, and an 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.

### **10.2 Training of authorized control officers**

The Contracting Party exercising control should ensure that authorized control officers have received the necessary training. This training should involve both theoretical and practical instruction.

### **10.3 Unsafe containers**

10.3.1 Control officers who find a container that is in a condition that creates an obvious risk to safety should stop the container until it can be ensured that it is in a safe condition to continue in service.

10.3.2 All containers with serious structural deficiencies in structurally sensitive components (see section 10.4) should be considered to be in a condition that creates an obvious risk to safety.

10.3.3 Control officers should notify the container owner whenever a container is placed under control.

10.3.4 Control officers may permit the onward movement of a container that has been stopped to its ultimate destination providing that it is not lifted from its current means of transport.

10.3.5 Empty containers with serious structural deficiencies to structurally sensitive components 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 so repositioned should be handled and transported with due regard to its structural deficiency. Clear signage should be placed on all sides and the top of the damaged container to indicate it is being moved for repairs only.

10.3.6 Empty containers with severe damage that prevents safe lifting of the container, e.g. damaged, misplaced or missing corner fittings or a failure of the connection between side walls and bottom side rails, should only be moved when carried on a platform-based container, such as a flat rack.

10.3.7 Major damage may be the result of significant impact which could have been 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.

10.3.8 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.

#### **10.4 Structurally sensitive components and definition of serious structural deficiencies for consideration by authorized control officers only**

10.4.1 The structurally sensitive components of a container that should be examined for serious deficiencies are the:

- .1 top rail;
- .2 bottom rail;
- .3 header;
- .4 sill;
- .5 corner posts;
- .6 corner and intermediate fittings;
- .7 understructure; and
- .8 locking rods.

10.4.2 The criteria shown below should be used by the authorized control officers to make immediate out-of-service determinations or impose transport restrictions. They should not be used as repair and in-service criteria under a CSC ACEP or a periodic examination scheme. Figure 5 is a flow chart that illustrates the actions to be taken by an authorized control officer.



(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Structurally sensitive component	Serious deficiency requiring immediate out of service determination (see also section 10.5)	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
<b>Top rail</b>	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.						
<b>Bottom rail</b>	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.						
<b>Header</b>	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 overstowed	No restriction	Container shall not be overstowed	No restriction

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Structurally sensitive component	Serious deficiency requiring immediate out of service determination (see also section 10.5)	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
<b>Sill</b>	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
<b>Corner posts</b>  <b>Corner and intermediate fittings</b>	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
	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.
<p>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.</p>						

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Structurally sensitive component	Serious deficiency requiring immediate out of service determination (see also section 10.5)	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
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 & 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 according to sections 10.5, 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	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	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>Note 6 Some containers are designed and approved (and so recorded on the CSC Plate) to operate with one door open or removed.</p>						

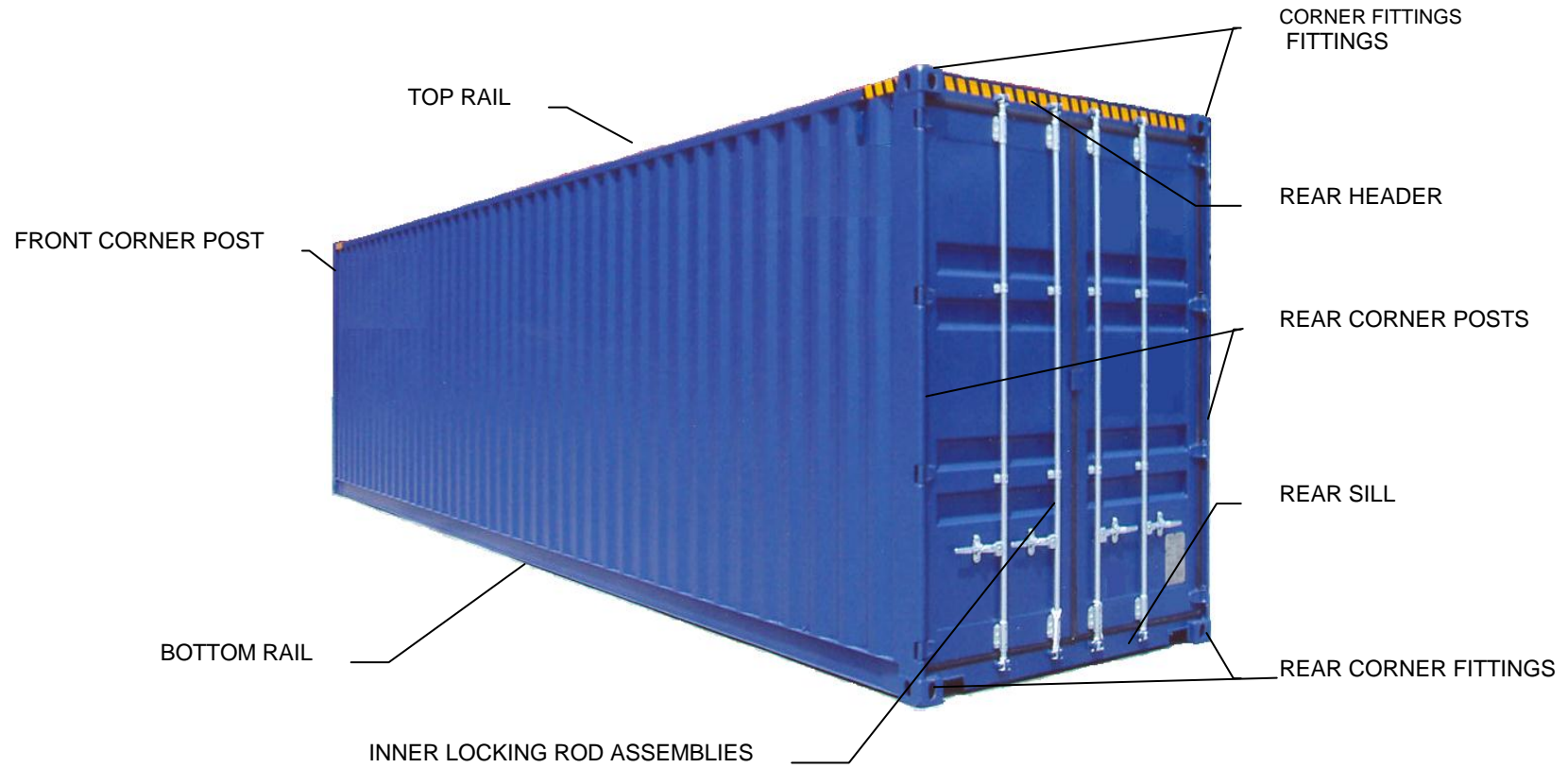
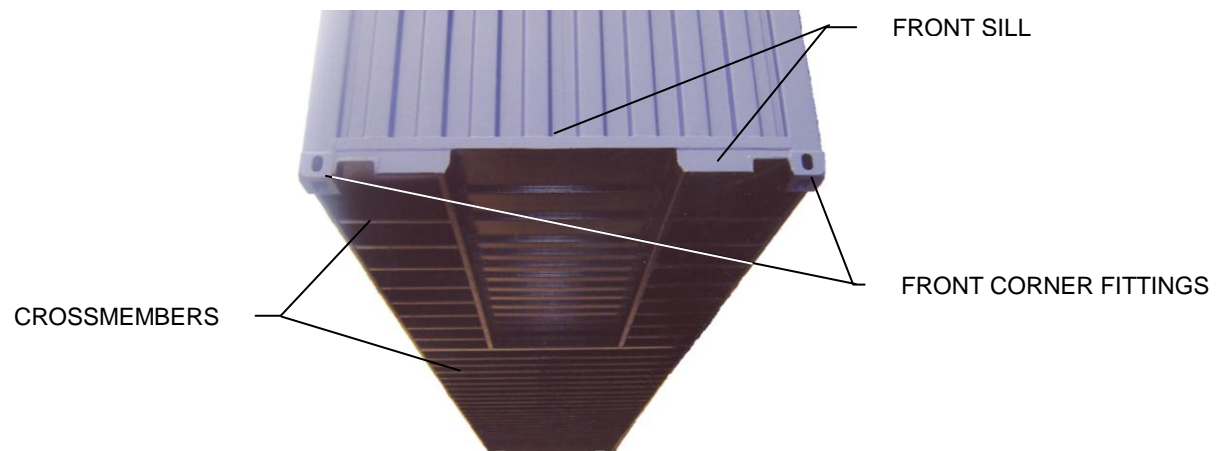


Figure 1



**Figure 2**

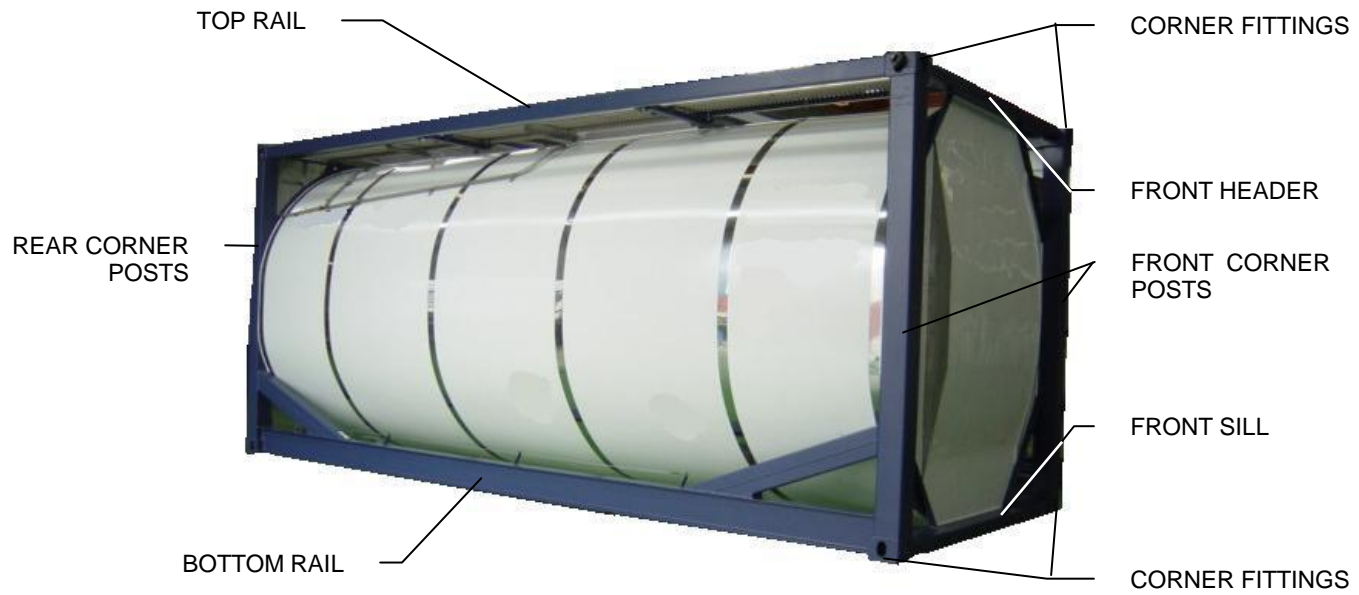
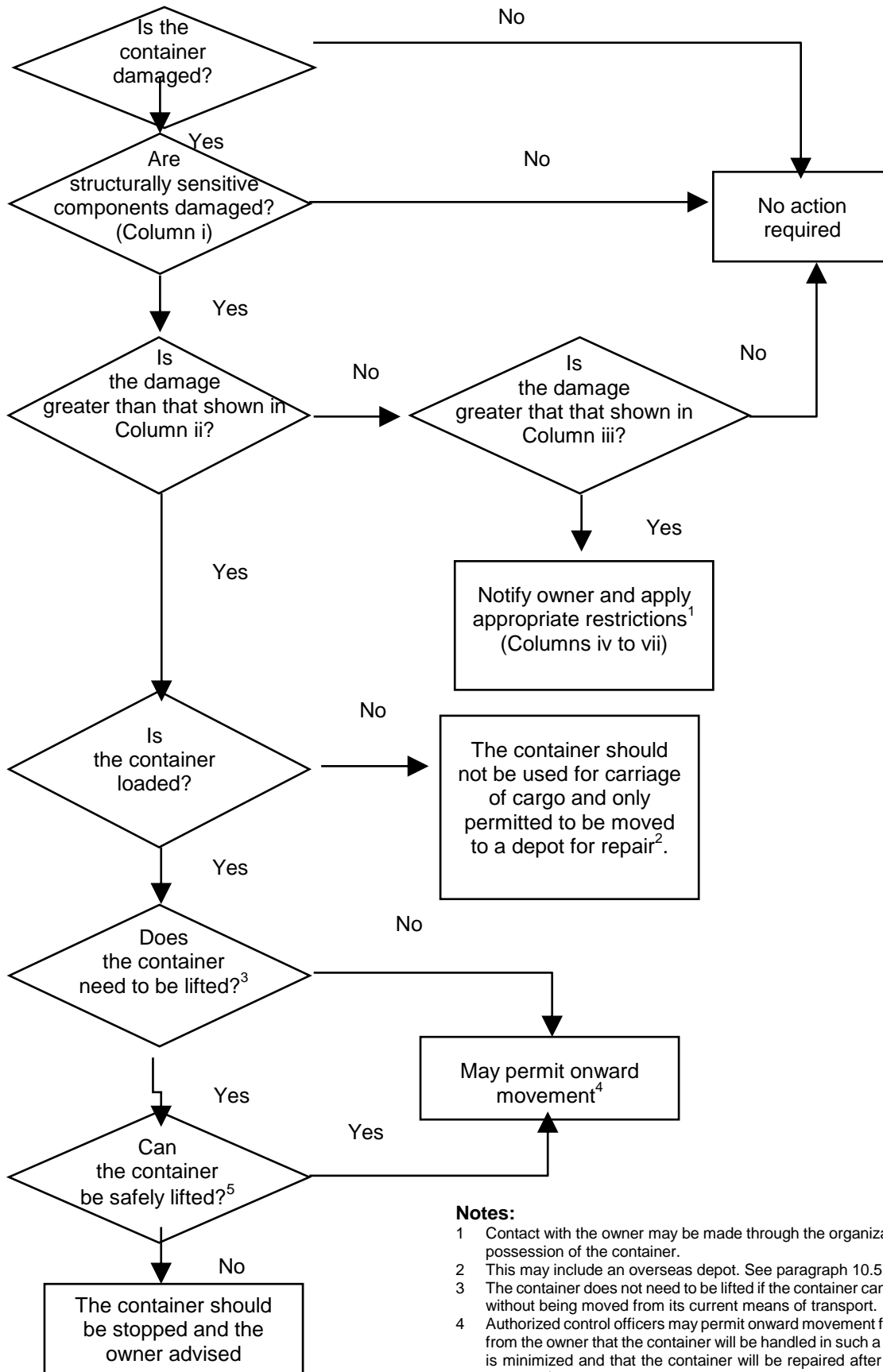


Figure 3



Figure 4



**Notes:**

- 1 Contact with the owner may be made through the organization that has current possession of the container.
- 2 This may include an overseas depot. See paragraph 10.5.
- 3 The container does not need to be lifted if the container can reach its destination without being moved from its current means of transport.
- 4 Authorized control officers may permit onward movement following confirmation from the owner that the container will be handled in such a way that risk of injury is minimized and that the container will be repaired after unloading. Refer to paragraph 10.5.
- 5 The container that has damage to cross members, bottom rails or corner fittings should not be lifted.

**Figure 5**



10.4.3 The effect of two or more items of damage in the same structurally sensitive component, even though each is less than that specified in the above table, could be equal to, or greater than, the effect of a single item of damage listed in the table. In such circumstances, the control officer may stop the container and seek further guidance from the Contracting Party.

10.4.4 For tank containers, the attachment of the shell to the container frame should also be examined for any readily visible serious structural deficiency comparable to that specified in the table. If any such serious structural deficiency is found in any of these attachments, the control officer should stop the container.

10.4.5 The end frame locking mechanism of platform containers with folding end frames and the hinge pins about which the end frame rotates are structurally sensitive components and should also be inspected for significant damage. Containers with folding end walls that cannot be locked in the erect position should not be moved with the end walls erect.

10.4.6 The deficiencies listed in paragraph 10.4.1 are not exhaustive for all types of containers or all possible deficiencies or combination of deficiencies.

## **10.5 International movement of containers under control**

It is recognized that in any of the cases covered by this section the owner may wish to move a container to another territory where the appropriate corrective action can be more conveniently carried out. Control officers may permit such movements, but should take such measures as may be reasonably practicable to ensure that the movement is carried out safely and that the appropriate corrective action is indeed taken. In particular, the control officer permitting such a movement should consider whether it would be necessary to inform the control officer or officers in the other territory or countries through which the container is to be moved.

## **10.6 Notification concerning unsafe containers of a given approved series**

If a considerable number of containers in a given approved series is found to be unsafe as a result of defects which may have existed prior to approval (article VI, paragraph 2), Administrations should notify the Organization as well as the Contracting Party concerned.

## **10.7 Containers that are not defective but have no Safety Approval Plate or that have an incorrectly completed plate**

Containers that have no Safety Approval Plate or an incorrectly completed Safety Approval Plate should be stopped. However, where evidence can be produced either to the effect that such a container has been approved under the terms of the Convention or to the effect that such a container meets the standards of the Convention, the authority exercising control may permit the container to proceed to its destination for unloading, with the proviso that it shall be plated as expeditiously as may be practicable and not reloaded before it has been correctly plated under the Convention.

## **10.8 Containers that are "out of date"**

A container being maintained under a Periodic Examination Scheme (PES) that is found to have marked on or near to its Safety Approval Plate a next maintenance examination date that is in the past should be stopped. However, the competent authority exercising control may permit the container to proceed to its destination for unloading with the proviso that it should be examined and updated as expeditiously as may be practicable and not reloaded before this has been done.

## 10.9 Containers that are missing their ACEP or NED marking

When there is neither a NED nor an ACEP marking on or near the Safety Approval Plate, the container should be stopped until it can be proven that the container is being operated and maintained under a valid programme. If the container is being operated under an approved ACEP the container should be allowed to continue its journey and the operator should be notified. The missing marking should be applied after unloading the container at the final destination and prior to its next reloading or at its next interchange, whichever is earlier.

## 10.10 Containers with defects when approved

Where a container appears to have become unsafe as a result of a defect that may have existed when the design of the container was approved, the Contracting Party that detected the defect should inform the Administration responsible for that approval.

## 11 SAFETY APPROVAL PLATE (regulation 1)

11.1 The following approaches to complying with certain aspects of the data requirements of the Convention, listed in this section, are deemed to be in conformity therewith.

11.2 A single approval number may be assigned to each owner for all existing containers in a single application for approval which could be entered on line 1 of the plate.

11.3 The example given in line 1 of the model Safety Approval Plate (see appendix to annex I of the Convention) should not be construed to require the inclusion of the date of approval in the approval reference.

11.4 The appendix to annex I of the Convention allows the use of the owner's ISO alphanumeric identification codes or manufacturer's serial numbers on existing containers. Only the manufacturer's serial number should be used as the identification number (line 3) on the Safety Approval Plate for containers approved on or after 14 May 2010. Where the Safety Approval Plate forms part of a larger grouped or consolidated plate (see paragraph 10.9) the manufacturer's serial number may be marked elsewhere on that plate. The owner's ISO alphanumeric identification code may also be shown elsewhere on a consolidated plate.

11.5 Where marking of the end-wall or side-wall strength on the plate is not required (e.g. a container with the end-wall or side-wall strength equal to 0.4P or 0.6P, respectively) a blank space need not be retained on the Safety Approval Plate for such marking but can be used instead to meet other data requirements of the Convention, e.g. subsequent date marks.

11.6 Where end-wall or side-wall strength is required to be marked on the Safety Approval Plate, this should be done as follows:

- in the English language:

**END-WALL STRENGTH  
SIDE-WALL STRENGTH**

- in the French language:

**RÉSISTANCE DE LA PAROI D'EXTRÉMITÉ  
RÉSISTANCE DE LA PAROI LATÉRALE**

11.7 In cases where a higher or lower wall strength is to be marked on the Safety Approval Plate, this can be done briefly by referring to the formula related to the payload P.

Example: **SIDE-WALL STRENGTH 0.5P**

11.8 With respect to the material characteristics of the Safety Approval Plate (see appendix to Annex I of the Convention), each Administration, for purposes of approving containers, may define *permanent*, *non-corrosive* and *fireproof* in its own way or simply require that Safety Approval Plates be of a material which it considers meets this definition (e.g. a suitable metal).

11.9 Regulation 1 of annex I requires that the Safety Approval Plate be affixed adjacent to any approval plate issued for official purposes. To comply with this requirement, when practicable, the CSC Safety Approval Plate may be grouped with the data plates required by other international conventions and national requirements on one base plate. The base plate should be conveniently located on the container.

## **12 MAINTENANCE AND EXAMINATION PROCEDURES (regulation 2)**

12.1 The Convention allows owners the option of having containers examined at intervals specified in the Convention in accordance with an examination scheme prescribed or approved by the Administration concerned, as set out in regulation 2, paragraph 2, and hereinafter referred to as "PERIODIC EXAMINATION SCHEME", or under a continuous examination programme approved by the Administration concerned, as set out in regulation 2, paragraph 3, and hereinafter referred to as "CONTINUOUS EXAMINATION PROGRAMME".\*

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\* Refer to the *Guidelines for development of an approved continuous examination programme (ACEP)* (CSC.1/Circ.143).

12.2 Both procedures are intended to ensure that the containers are maintained to the required level of safety and both should be considered equal, provided the Administration is satisfied with the examination scheme used by the owner.

12.3 The owner should be allowed the option of having part of his fleet covered by one examination procedure and the remaining part of his fleet covered by the other procedure, and provision should be made to allow an owner to change the procedure applicable to their containers.

### **12.4 Elements to be included in the examination**

#### **12.4.1 For containers covered by periodic examination schemes or continuous examination programmes**

12.4.1.1 While Administrations may specify factors to be taken into account in a container examination scheme, it should not be necessary at this time to agree on a specific list of factors or minimum listing of parts of a container which should be included in an examination. However, each examination should include a detailed visual inspection for defects or other safety-related deficiencies or damage which will render the container unsafe and include examination of all structurally significant components of the container, particularly the corner fittings.

12.4.1.2 It is accepted that a visual examination of the exterior of the container will normally be sufficient. However, an examination of the interior should also be performed if reasonably practicable (e.g. if the container is empty at the time). Furthermore, the top and underside of the container, including the underside of the lower corner fittings, should be examined. This may be done either with the container supported on a skeletal chassis or, if the examiner considers it necessary, after the container has been lifted on to other supports.

12.4.1.3 The examination of a container should be carried out by a person having such knowledge and experience of containers as will enable him to determine whether it has any defect that could place any person in danger.

12.4.1.4 The person performing the external examination should have the authority to require a more detailed examination of a container if the condition of the container appears to warrant such examination. If there is a possibility of serious structural deficiency in structurally sensitive components (see 10.4 above), measuring tools to fully assess the defects that are noted should be used.

#### 12.4.2 ***Additional requirements for containers under a continuous examination programme***

12.4.2.1 Under an approved continuous examination programme a container is subject to examinations and inspections during the course of normal operations. These are:

- .1 *thorough examinations*, which are examinations conducted in connection with a major repair, refurbishment, or on-hire/off-hire or depot interchange; and
- .2 *routine operating inspections*, which are frequent inspections performed to detect any damage or deterioration that might necessitate corrective action.

12.4.2.2 Thorough examinations should be carried out in accordance with the requirements of the approved examination programme and care should be taken to ensure that any damaged parts or components have been adequately and safely repaired or replaced. Although Administrations may specify factors to be taken into account during routine operating inspections, normally a visual inspection of the exterior and the underside should be sufficient.

#### 12.4.3 ***Container markings for examinations***

##### 12.4.3.1 *Containers under a periodic examination scheme – next examination date (NED)*

12.4.3.1.1 The use of decals should be allowed to indicate the date of the first examination and subsequent re-examination of a container examined at intervals specified in the Convention provided that:

- .1 the relevant date (month and year) is shown in internationally recognizable words or figures on the decals or on the plate itself;
- .2 the date of the first examination for new containers is shown by decals or otherwise on the plate itself as regulation 2.2 of annex I of the CSC requires; and
- .3 the decals have a white background with lettering that may be coloured in accordance with the year of next examination as follows:

BROWN	2004	2010	2016
BLUE	2005	2011	2017
YELLOW	2006	2012	2018
RED	2007	2013	etc.
BLACK	2008	2014	
GREEN	2009	2015	

#### 12.4.3.2 *Containers under a continuous examination programme*

12.4.3.2.1 A container examined under an approved continuous examination programme should bear a decal showing the letters ACEP and the identification of the Administration which has granted the approval, in a similar manner to that stated in annex I, appendix 1, paragraph 1. This decal should be placed on or as close as practicable to the Safety Approval Plate.

#### 12.4.4.3 *Containers operated by a lessee*

12.4.4.3.1 Containers marked with an NED but operated by a lessee with an approved continuous examination programme should be re-marked by the fitting of the lessee's ACEP reference decal and removal or covering of the next examination date.

12.4.4.3.2 Containers marked with an ACEP reference but operated by a lessee with a Periodic Examination Scheme (PES) should be re-marked by the removal or covering of the ACEP reference and the fitting of an NED decal following the first examination under the lessee's examination scheme.

#### 12.4.4.4 *For containers built with limited stacking or racking capacity*

Containers tested in accordance with annex II, chapter 2 (Stacking) with an allowable superimposed static stacking weight less than 192,000 kg for their outer most corner posts, or tested in accordance with annex II, chapter 4 (Transverse Racking) with forces less than 150 kN, should be conspicuously marked, as required under the relevant ISO standard<sup>2</sup>.

#### 12.4.5 ***Use of decals***

The use of decals for containers under a periodic examination scheme should remain optional and in no way derogate from the relevant provisions of the Convention to which reference is made above. The responsibility for developing and introducing a decal system should remain with the owners.

### **13 RECORDS OF EXAMINATIONS**

13.1 The owner should ensure a system is maintained where examination records are kept, which should include the following:

- .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 PES, the NED.

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<sup>2</sup> Refer to current standard ISO 6346, Freight containers – Coding, identification and marking.

13.2 There is no need to standardize the method by which such records should be kept and existing record systems may be accepted. Such records should be auditable and made available within a reasonable time to the Administration on its request. There is no requirement to keep records of routine operating inspections.

## **14 FREQUENCY OF EXAMINATIONS**

### **14.1 Containers under a periodic examination scheme**

14.1.1 The Convention recognizes that it may be necessary to examine containers more frequently than every 30 months when they are subject to frequent handling and transshipment. It should be borne in mind, however, that any significant reduction in the 30-month interval between examinations would create severe examination control problems. It should be noted that where containers are subjected to frequent handling and transshipment they are also liable to be subjected to frequent checking.

14.1.2 Therefore, in determining whether it is acceptable that the interval between examinations under the Convention should be the maximum of 30 months, proper account should be taken of intermediate examinations, having regard to their extent and to the technical competence of the persons by whom they are performed.

### **14.2 Containers under a continuous examination programme**

14.2.1 Containers examined under an approved continuous examination programme are subject to a thorough examination in connection with a major repair, refurbishment or on-hire/off-hire or depot interchange and in no case less than once every 30 months.

## **15 MODIFICATIONS OF EXISTING CONTAINERS**

15.1 Applicants for approval of existing containers may be required to certify that, to the best of their knowledge, any modifications previously carried out do not adversely affect safety or the relevance to those containers of the information presented with the application in accordance with annex I, regulation 9, paragraph 1(d)(ii) and (iii). Alternatively, applicants may submit details of the modification for consideration.

15.2 The removal of a door of a container to enable "one door operation" is considered to be a modification that may adversely affect the safety of the container. Consequently it requires specific approval by the Contracting Party and appropriate markings on the CSC Plate, which must remain on the container after the door has been removed.

15.3 Containers that have been subjected to a modification should retain the original date of manufacture on the Safety Approval Plate and add an additional line showing the date when the modification was carried out.

## **16 TEST METHODS AND REQUIREMENTS (annex II)**

Containers tested in accordance with the methods described in the relevant ISO standard<sup>3</sup> should be deemed to have been fully and sufficiently tested for the purposes of the Convention, except that tank-containers provided with fork-lift pockets should be additionally tested in accordance with annex II, test 1(B)(i).

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<sup>3</sup> Refer to current ISO 1496, Series 1 freight containers – Specification and testing.

## 17 STACKING TEST (annex II, chapter 2)

17.1 The following can be used as guidance in interpreting paragraphs 1 and 2 of the stacking test:

For a 9-high stacking of 24-tonne (24,000 kg/52,915 lb) containers, the mass on the bottom container would be 8 x 24 tonnes (24,000 kg/52,915 lb), i.e. 192 tonnes (192,000 kg/423,320 lb). Thus, in the case of a 24-tonne container with 9-high stacking capability, the plate should indicate: **ALLOWABLE STACKING MASS FOR 1.8 G: 192,000 kg/423,320 lb.**

17.2 The following may be a useful guidance for determining allowable stacking mass:

The allowable stacking mass for 1.8 g may be calculated by assuming a uniform stack loading on the corner post. The stacking test load applied to one corner of the container shall be multiplied by the factor 4/1.8 and the result expressed in appropriate units.

17.3 The following is a useful example of how the allowable stacking mass could be varied, as prescribed in paragraph 1 of the stacking test:

If on a particular journey the maximum vertical acceleration on a container can be reliably and effectively limited to 1.2 g, the allowable stacking mass permitted for that journey would be the allowable stacking mass stamped on the plate multiplied by the ratio of 1.8 to 1.2 (i.e. allowable stacking mass on the plate x 1.8/1.2 = stacking mass permitted for the journey).

## 18 LONGITUDINAL RESTRAINT TEST (STATIC TEST) (annex II, chapter 5)

The acceleration of 2 g should be considered as the usual value for dynamic loads on containers in normal operation when carried by inland modes of transport. The externally applied test forces of 2 R prescribed for the static test for longitudinal restraint, together with the fulfilment of the criteria of the other prescribed tests, are to ensure that the structural strength of a container is sufficient to withstand the stresses resulting from normal operation.

## 19 VALIDITY OF APPROVALS

Approvals remain valid if the Contracting Party issuing the approval changes provided the new entity agrees to maintain responsibility for the proper administration of the Convention and the existing approvals. Approvals also remain valid when container ownership changes provided the new owner continues to maintain the container to a standard and under procedures that are at least as effective as those originally approved.