

## **RESOLUTION MSC.355(92)**

**(Adopted on 21 June 2013)**

### **AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR SAFE CONTAINERS (CSC), 1972**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING article X of the International Convention for Safe Containers, 1972 (hereinafter referred to as "the Convention"), concerning the special procedure for amending the annexes to the Convention,

HAVING CONSIDERED, at its ninety-second session, proposed amendments to the Convention in accordance with the procedure set forth in paragraphs 1 and 2 of article X of the Convention,

1. ADOPTS the amendments to the annexes of the Convention, the text of which is set out in the annex to the present resolution;
2. DETERMINES, in accordance with paragraph 3 of article X of the Convention, that the said amendments shall enter into force on 1 July 2014 unless, prior to 1 January 2014, five or more of the Contracting Parties notify the Secretary-General of their objection to the amendments;
3. REQUESTS the Secretary-General, in conformity with paragraph 2 of article X of the Convention, to communicate the certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Parties for their acceptance;
4. ALSO REQUESTS the Secretary-General to inform all Contracting Parties and Members of the Organization of any request and communication under article X of the Convention and of the date on which the amendments enter into force.

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### **ANNEX**

### **AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR SAFE CONTAINERS (CSC), 1972**

#### **ANNEX I**

#### **REGULATIONS FOR THE TESTING, INSPECTION, APPROVAL AND MAINTENANCE OF CONTAINERS**

##### **Chapter I**

##### **Regulations common to all systems of approval**

1 After the heading of chapter I, the following text is inserted:

###### **"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<sup>2</sup>.

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**

2 Subparagraph 1(b) of regulation 1 is amended as follows:

"(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.";

3 Subparagraph 2(a) is amended as follows:

"(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)";

4 At the end of paragraph 3, a new text is added as follows:

", 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.";

5 After the existing paragraph 4, a new paragraph 5 is added as follows:

"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.".

## **Chapter IV**

### **Regulations for approval of existing containers**

#### **and new containers not approved at time of manufacture**

### **Regulation 9 - Approval of existing containers**

6 Subparagraphs 1(c) and 1(e) are amended as follows:

"(c) maximum operating gross mass capability;"

"(e) allowable stacking load for 1.8 g (kg and lbs); and"

### **Regulation 10 - Approval of new containers not approved at time of manufacture**

7 Subparagraphs (c) and (e) are amended as follows:

"(c) maximum operating gross mass capability;"

"(e) allowable stacking load for 1.8 g (kg and lbs); and"

## **Appendix**

8 The fourth, fifth and sixth lines of the model of the Safety Approval Plate reproduced in the appendix are amended as follows:

"MAXIMUM OPERATING GROSS MASS ..... kg ..... lbs

ALLOWABLE STACKING LOAD FOR 1.8 g ..... kg ..... lbs

TRANSVERSE RACKING TEST FORCE ..... newtons"

9 Items 4 to 8 of the appendix are amended as follows:

"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."

10 The existing paragraphs 10 and 11 are replaced as follows:

"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) ( Inserted by [MSC 92/26/Add.1/Corr.2](#)). This marking shall be displayed immediately near the racking test value (see line 6)."

## ANNEX II

### STRUCTURAL SAFETY REQUIREMENTS AND TESTS

11 After the heading of chapter II, the following text is inserted:

#### **"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<sup>2</sup>.

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.

12 The first sentence of the Introduction to annex II (Structural safety requirements and tests) is amended as follows:

"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."

13 In section 1 (Lifting), subsection 1(A) (Lifting from corner fittings) the text concerning test loadings and applied forces is amended as follows:

#### **"TEST LOAD AND APPLIED FORCES**

##### **Internal load:**

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.

##### **Externally applied forces:**

Such as to lift the sum of a mass of 2R in the manner prescribed (under the heading TEST PROCEDURES)."

14 In section 1 (Lifting), subsection 1(B) (Lifting by any other additional methods) is replaced with the following:

"TEST LOAD AND APPLIED FORCES

**Internal load:**

A uniformly distributed load such that the sum of the mass of container and test load is equal to 1.25R.

**Externally applied forces:**

Such as to lift the sum of a mass of 1.25R in the manner prescribed (under the heading TEST PROCEDURES).

**Internal load:**

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.

**Externally applied forces:**

Such as to lift the sum of a mass of 1.25R in the manner prescribed (under the heading TEST PROCEDURES).

**Internal load:**

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.

**Externally applied forces:**

Such as to lift the sum of a mass of 1.25R in the manner prescribed (under the heading TEST PROCEDURES).

TEST PROCEDURES

*(i) Lifting from fork-lift pockets:*

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.

*(ii) Lifting from grappler-arm positions:*

The container shall be placed on pads in the same horizontal plane, one under each grappler-arm position. These pads shall be of the same sizes as the lifting area of the grappler arms intended to be used.

*iii) Other methods:*

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."

15 Paragraphs 1 and 2 of section 2 (STACKING) are amended as follows:

"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.

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)."

16 In section 2 (STACKING) the text concerning test loadings and applied forces is amended as follows:

"TEST LOAD AND APPLIED FORCES

**Internal load:**

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.

**Externally applied forces:**

Such as to subject each of the four top corner fittings to a vertical downward force equal to  $0.25 \times 1.8 \times$  the gravitational force of the allowable superimposed static stacking load."

17 Section 3 (CONCENTRATED LOADS) is amended as follows:

"TEST LOAD AND APPLIED FORCES

**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).

**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<sup>2</sup> (22 sq in).

**Externally applied forces:**

None.

TEST PROCEDURES

**(a) On roof**

The externally applied forces shall be applied vertically downwards to the outer surface of the weakest area of the roof of the container.

**(b) On floor**

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.

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<sup>2</sup> (44 sq in), that is, 142 cm<sup>2</sup> (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.

18 The heading and subheading of the text concerning test loadings and applied forces in section 4 (TRANSVERSE RACKING) are replaced with the following respectively:

"TEST LOAD AND APPLIED FORCES" and "Internal load:".

19 In section 5 (LONGITUDINAL RESTRAINT (STATIC TEST)), the text concerning test loadings and applied forces is amended as follows:

"TEST LOAD AND APPLIED FORCES

**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.

**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."

20 The first paragraph of section 6 (END-WALLS) is amended as follows:

"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."

21 In section 6 (END-WALLS), the text concerning test loadings and applied forces is amended as follows:

"TEST LOAD AND APPLIED FORCES

**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.

**Externally applied forces:**

None."

22 The first paragraph of section 7 (SIDE-WALLS) is amended as follows:

"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."

23 In section 7 (SIDE-WALLS), the text concerning test loadings and applied forces is amended as follows:

"TEST LOAD AND APPLIED FORCES

**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.

**Externally applied forces:**

None."

24 The existing section 8 (ONE DOOR OFF OPERATION), is replaced with the following:

**"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).

TEST LOAD AND APPLIED FORCES

**Stacking**

**Internal load:**

A uniformly distributed load such that the sum of the mass of container and test load is equal to 1.8R.

**Externally applied forces:**

Such as to subject each of the four top corner fittings to a vertical downward force equal to  $0.25 \times 1.8 \times$  the gravitational force of the allowable superimposed static stacking load.

**Transverse racking**

**Internal load:**

None.

**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."

## TEST PROCEDURES

The test procedures shall be as set forth under **2 STACKING**

The test procedures shall be as set forth under **4 TRANSVERSE RACKING**

## ANNEX III CONTROL AND VERIFICATION

25 The existing section 4 is replaced with the following:

### "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)
<b>Structurally sensitive component</b>	<b>Serious deficiency requiring immediate out-of-service determination</b>	<b>Deficiency requiring advice to owner and restrictions for transport</b>	<b>Restrictions to be applied in case of deficiencies according to column (iii)</b>			
			<b>Empty container</b>		<b>Loaded container</b>	
			<b>Sea transport</b>	<b>Other modes</b>	<b>Sea transport</b>	<b>Other modes</b>
<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: in excess of 25 mm in length in the upper flange; 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)
<b>Structurally sensitive</b>	<b>Serious deficiency</b>	<b>Deficiency requiring</b>	<b>Restrictions to be applied in case of deficiencies according to column (iii)</b>			

component	requiring immediate out-of-service determination	advice to owner and restrictions for transport	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 restriction	Container shall not be overstowed	No restrictions
<b>Corner posts</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 restriction	Container shall not be overstowed	No restrictions
<b>Corner and intermediate fittings</b>	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.

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
<b>Structurally sensitive component</b>	<b>Serious deficiency requiring immediate out-of-service determination</b>	<b>Deficiency requiring advice to owner and restrictions for transport</b>	<b>Restrictions to be applied in case of deficiencies according to column (iii)</b>			
			<b>Empty container</b>		<b>Loaded container</b>	
			<b>Sea transport</b>	<b>Other modes</b>	<b>Sea transport</b>	<b>Other modes</b>
	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.					
<b>Understructure</b>	Two or more adjacent cross members missing or detached from the bottom rails.	One or two cross members missing or detached (see Note 4)	No restrictions	No restrictions	No restrictions	No restrictions



	20% or more of the total number of cross members missing or detached. (see Note 4)	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>						
<b>Locking rods</b>	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>						

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