

- .3 the alignment and arrangement, including the termination of the straps, is in accordance with a standard recognized by the Administration;
- .4 the straps are continuous over the entire 0.5L amidships length; and
- .5 continuous fillet welding and full penetration welds are used at butt welding and, depending on the width of the strap, slot welds. The welding procedures applied should be acceptable to the Administration.

4.4 The existing structure adjacent to replacement areas and in conjunction with the fitted straps, etc. should be capable of withstanding the applied loads, taking into account the buckling resistance and the condition of welds between the longitudinal members and hull envelope plating.”

#### 第 56/2015 號行政長官公告

中華人民共和國於一九九九年十二月十三日以照會通知聯合國秘書長，經修訂的《1974年國際海上人命安全公約》自一九九九年十二月二十日起適用於澳門特別行政區；

國際海事組織海上安全委員會於二零零零年十二月五日透過第MSC.105(73)號決議通過了《散貨船和油輪檢驗期間的強化檢查方案指南》(經修正的第A.744(18)號決議)的修正案，該修正案自二零零二年七月一日起適用於澳門特別行政區；

基於此，行政長官根據澳門特別行政區第3/1999號法律第六條第一款的規定，命令公佈包含上指修正案的MSC.105(73)號決議的中文及英文文本。

二零一五年五月十九日發佈。

代理行政長官 陳海帆

#### Aviso do Chefe do Executivo n.º 56/2015

Considerando que a República Popular da China, por nota datada de 13 de Dezembro de 1999, notificou o Secretário-Geral das Nações Unidas sobre a aplicação da Convenção Internacional para a Salvaguarda da Vida Humana no Mar de 1974, tal como emendada, na Região Administrativa Especial de Macau, a partir de 20 de Dezembro de 1999;

Considerando igualmente que, em 5 de Dezembro de 2000, o Comité de Segurança Marítima da Organização Marítima Internacional, através da resolução MSC.105(73), adoptou emendas às Directrizes relativas ao Programa Reforçado de Inspeções no âmbito das Vistorias a Graneleiros e Petroleiros (resolução A.744(18), tal como emendada), e que tais emendas são aplicáveis na Região Administrativa Especial de Macau desde 1 de Julho de 2002;

O Chefe do Executivo manda publicar, nos termos do n.º 1 do artigo 6.º da Lei n.º 3/1999 da Região Administrativa Especial de Macau, a resolução MSC.105(73), que contém as referidas emendas, nos seus textos em línguas chinesa e inglesa.

Promulgado em 19 de Maio de 2015.

A Chefe do Executivo, interina, *Chan Hoi Fan*.

## 第 MSC.105 (73) 號決議

(2000 年 12 月 5 日通過)

### 通過《散貨船和油輪檢驗期間的強化檢查方案指南》 (經修正的第 A.744 (18) 號決議) 的修正案

海上安全委員會，

憶及《國際海事組織公約》關於本委員會職責的第 28 (b) 條，

又憶及大會據以通過“散貨船和油船檢驗期間的強化檢查方案指南”(指南)的第 A.744 (18) 號決議，

還憶及《1974 年國際海上人命安全公約(SOLAS)》(以下簡稱“公約”)關於指南修正程序的第 VIII (b) 條和第 XI/2 條，

注意到大會在通過第 A.744 (18) 號決議時要求海上安全委員會和海洋環境保護委員會根據其應用經驗對指南作出檢查和必要的更新，

還注意到海上安全委員會和公約締約政府會議按公約第 VIII (b) 條和第 XI/2 條據以通過第 A.744(18)號決議修正案的 MSC.49(66) 號決議和 1997 年公約締約政府會議第 2 號決議，

在其第 73 次會議上審議了按公約第 VIII (b) (i) 條提議並散發的指南修正案，

1. 按公約第 VIII (b) (iv) 條通過“散貨船和油船檢驗期間的強化檢查方案指南”修正案，其條文載於本決議附件中；
2. 按公約第 VIII (b) (vi) (2) (bb) 條決定：這些修正案應於 2002 年 1 月 1 日視為已被接受，除非在此日期之前，有超過三分之一的公約締約政府或其合計商船隊總噸位不少於世界商船隊總噸位 50% 的締約政府通知反對該修正案；
3. 提請各締約政府注意，按公約第 VIII (b) (vii) (2) 條，這些修正案在按上文第 2 段被接受後，應於 2002 年 7 月 1 日生效；
4. 要求秘書長按照公約第 VIII (b) (v) 條，將本決議和附件中所列修正案條文的核證副本發給本公約所有締約政府；
5. 還要求秘書長將本決議及其附件的副本發給非本公約締約政府的本組織成員。

## 附件

### 《散貨船和油輪檢驗期間的強化檢查方案指南》

#### （經修正的第 A.744（18）號決議）的修正案

### 附件 A

#### 散貨船檢驗期間的強化檢查方案指南

- 1 原第 2.2.2 款的條文由下文取代：

“2.2.2 對於船齡為 15 年及以上的船舶，船底外部檢驗應在船舶在乾塢中時進行。對於船齡小於 15 年的船舶，不予定期檢驗期間的強化檢驗一起進行的替代船底檢查，可對漂浮船舶進行。只有在狀況令人滿意並有適當的設備和具有適當資格的人員時，才能進行漂浮船舶檢查。”

### 附件 B

#### 油船檢驗期間的加強檢驗計劃導則

- 2 原第 2.2.2 款的條文由下文取代：

“2.2.2 對於船齡為 15 年及以上的船舶，船底外部檢驗應在船舶在乾塢中時進行。對於船齡小於 15 年的船舶，不予定期檢驗期間的強化檢驗一起進行的替代船底檢查，可對漂浮船舶進行。只有

在狀況令人滿意並有適當的設備和具有適當資格的人員時，才能進行漂浮船舶檢查。”

- 3 在原第 8.1.1 款後新增第 8.1.1.1 款如下：

“8.1.1.1 對於長度為 130 米及以上的油船（按生效的《國際載重線公約》的規定），船舶的縱向強度應在船齡達到 10 年以後所進行的安全構造換證檢驗期間，通過使用經丈量、更新或加強的厚度，按附件 12 規定的油船船體桁材的縱向強度標準來評估。”

- 4 在原第 8.1.2 款後新增第 8.1.2.1 款如下：

“8.1.2.1 在因初步評定而對構件作了更新或加強後，第 8.1.1.1 款所要求的船舶縱向強度評估的最後結果，應作為狀態評價報告的一部分予以報告。”

- 5 在附件 8 中，在原第 3.3 款後新增第 3.4 款如下：

“3.4 船舶縱向強度的評估結果（對於長度為 130 米及以上且船齡超過 10 年的油船）”。

- 6 在附件 9 的末尾增加下列條文：

“長度為 130 米及以上且船齡超過

10 年的油船船體桁材縱向強度評估結果

（在下面第 1、2 和 3 節中，只需填寫適用的一節）

1 本節適用於所有船舶，無論何時建造：船體桁材的甲板緣板（甲板板材與甲板縱材）和船底緣板（底殼板與船底縱材）的橫截面面積，已在船齡達到 10 年以後最近進行的《貨船設備安全證書》或《貨船安全證書》（SC）換證檢驗期間，視情通過使用丈量的、更新的和加強的結構構件的厚度計算得出，並發現橫截面面積的減少不超過原建面積的 10%，如下表所示：

		實測值	原建值	減少量（率）
橫截面 1	甲板緣板	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> （ % ）
	底緣板	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> （ % ）
橫截面 2	甲板緣板	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> （ % ）
	底緣板	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> （ % ）
橫截面 3	甲板緣板	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> （ % ）
	底緣板	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> （ % ）

2 本節適用於 2002 年 7 月 1 日以後建造的船舶：船體桁材橫截面的截面模數已在船齡達到 10 年以後最近進行的 SC 換新檢驗期間，視情通過使用丈量的、更新的或加強的厚度，根據附件 12 第 2.2.1.1 條規定計算得出，並發現該截面模數滿足主管機關考慮到本組織通過的建議而確定的減少限值，如下表所示：

		Z <sub>act</sub> (cm <sup>3</sup> ) *1	Z <sub>req</sub> (cm <sup>3</sup> ) *2	備註
橫截面 1	上甲板			
	船底			
橫截面 2	上甲板			

表 2 船體桁材橫截面模數				
		$Z_{act}$ (cm <sup>3</sup> ) *1	$Z_{req}$ (cm <sup>3</sup> ) *2	備註
	船底			
橫截面 3	上甲板			
	船底			

註：

- \*1  $Z_{act}$  係指在進行 SC 換新檢驗期間，視情通過使用丈量的、更新的和加強的厚度，根據附件 12 第 2.2.1.1 款的規定計算得出的船體桁材橫截面的實際截面模數。
- \*2  $Z_{req}$  係指按照附件 12 第 2.2.1.1 款的規定計算得出的船舶縱向彎曲強度的減少限值。

$Z_{act}$  的計算圖表應附於本報告之後。

3 本節適用於 2002 年 7 月 1 日前建造的船舶：船體桁材橫截面的截面模數已在船齡達到 10 年以後最近進行的 SC 換新檢驗期間，視情通過使用丈量的、更新的或加強的厚度，根據附件 12 第 2.2.1.1 款規定計算得出，並發現該截面模數滿足主管機關或認可的船級社要求的衡準，並且  $Z_{act}$  不小於附件 12 附錄 2 中所規定的  $Z_{mc}$  值（見下文\*2 的定義），如下表所示：

陳述主管當局或被認可的船級社要求的現役船船體桁材最小截面模數的接受衡準。

表 3 船體桁材橫截面模數				
		$Z_{act}$ (cm <sup>3</sup> ) *1	$Z_{mc}$ (cm <sup>3</sup> ) *2	備註
橫截面 1	上甲板			
	船底			
橫截面 2	上甲板			
	船底			
橫截面 3	上甲板			
	船底			

註：

\*1 見表 2 註\*1 的定義。

\*2  $Z_{mc}$  係指按照附件 12 第 2.2.1.1 款的規定計算得出的船舶最小截面模數的減少限值。”

7 在附件 11 後新增附件 12 如下：

## “附件 12

### 油船船體桁材縱向強度衡準

#### 1 總則

1.1 本衡準應被用於評估第 8.1.1.1 款所要求的船體桁材縱向強度。



1.2 為使評估的船舶縱向強度能被承認為有效，縱向內構件與船體外殼之間的角焊狀況應該良好，以保持縱向內構件與船體外殼的完整性。

## 2 縱向強度評估

對於長度為 130 米及以上且船齡超過 10 年的油船，在《貨船構造安全證書》或《貨船安全證書》的換證檢驗（SC 換證檢驗）期間，應視情根據測量的、更新的或加強的厚度，按本附件的要求對船體桁材的縱向強度進行評估。

### 2.1 船體桁材甲板和船底緣板橫截面面積的計算

2.1.1 在 SC 換證檢驗期間，船體桁材甲板緣板（甲板板材和甲板縱材）和底部緣板（底殼板和船底縱材）的橫截面面積，應視情通過使用測量的、更新的或加強的構件厚度計算。

2.1.2 如果甲板或底部緣板的截面面積的減少超過其原建面積（即船舶建造時的原橫截面面積）的 10%，則應採取下列措施之一：

- .1 更新或加強甲板或船底部緣板，使實際截面面積不少於原建面積的 90%；或
- .2 在 SC 換證檢驗期間，運用附錄 1 中規定的計算方法，視情使用丈量的、更新的或加強的厚度計算船體桁材橫截面的實際截面模數（ $Z_{act}$ ）。

## 2.2 船體桁材橫截面模數的要求

2.2.1 按照第 2.1.2.2 款算得的船體桁材橫截面的實際截面模數應視情滿足下列規定之一者：

- .1 對於 2002 年 7 月 1 日或以後建造的船舶，按照第 2.1.2.2 款算得的船體桁材橫截面的實際截面模數 ( $Z_{act}$ )，應不小於主管機關考慮到本組織通過的建議所確定的減少限值；或
- .2 對於 2002 年 7 月 1 日以前建造的船舶，按照第 2.1.2.2 款算得的船體桁材橫截面的實際截面模數 ( $Z_{act}$ )，應滿足主管機關或經認可的船級社要求的現役船舶的最小截面模數衡準，但無論如何， $Z_{act}$  的值都不應小於附錄 2 中規定的最小截面模數的減少限值 ( $Z_{mc}$ )。

## 附錄 1

### 船體桁材船中截面的截面模數計算衡準

- 1 在計算船體桁材橫截面模數時，應計入所有連續縱向強度構件的截面面積。
- 2 要將大開口（即長度超過 2.5 米或寬度超過 1.2 米的開口）及使用扇形焊的扇形口從截面模數計算中使用的截面面積中扣除。

- 3 小開口（人孔、照明孔、焊縫單扇孔等）的面積不必扣除，但其寬度或陰影面積寬度在一個截面面積上的總和不應使甲板或底部截面模數的減少超過 3%，而且縱骨或縱桁材上的照明孔、排水孔和單扇孔的高度不超過桁板深度的 25%，扇孔最大為 75 毫米。
- 4 船底或甲板上一橫截面中不予扣除的小開口寬度總和為 0.06（ $B - \Sigma b$ ）（ $B$  為船寬， $\Sigma b$  為大開口的總寬）時，可認為等於上述截面模數的減少。
- 5 陰影面積將通過畫兩條開角為 30° 的切線來取得。
- 6 甲板模數與船舷型甲板線有關。
- 7 船底模數與基線有關。
- 8 如果連續的圍壁通道和縱向艙口圍板由縱向艙壁或深桁材加以有效支撐，則應包括在縱向橫截面面積中。甲板模數則通過用慣性力矩除以下述距離來計算得出，但該距離應大於至船舷甲板線的距離：

$$y_t = y \left( 0.9 + 0.2 \frac{x}{B} \right)$$

式中：  $y$  = 從中性軸至連續強度構件頂部的距離

$x$  = 從連續結構頂部至船舶中線的距離。

$x$  和  $y$  應量至  $y_t$  值最大的點。

- 9 多艙口之間的縱向桁材將按特殊計算方法加以考慮。

## 附錄 2

### 現役船舶最小縱向強度的減少限值

- 1 現役油船的最小截面模數的減少限值 ( $Z_{mc}$ )，由下述公式得出：

$$Z_{mc} = cL^2B (C_b + 0.7) k \text{ (cm}^3\text{)}$$

式中：

$L$  = 船舶長度。 $L$  是在夏季載重水線上從船首柱前側至舵柱後側或舵杆中心（如果沒有舵柱）的距離，以米計。 $L$  不應小於夏季載重水線上的最大長度的 96%，但不必大於 97%。對於有異常船尾和船首佈置的船舶， $L$  的長度可作特殊考慮。

$B$  = 最大型寬，以米計算。

$C_b$  = 在相應於夏季載重水線的吃水  $d$  處的型方形係數，取決於  $L$  和  $B$ 。 $C_b$  取值不應少於 0.6。

$$C_b = \frac{\text{吃水處 } d \text{ 的型排水量(立方米)}}{LBd}$$

$$c = 0.9c_n$$

$$c_n = 10.75 - \left( \frac{300 - L}{100} \right)^{1.5} \quad \text{若 } 130m \leq L \leq 300m$$

$$c_n = 10.75 \quad \text{若 } 300m < L < 350m$$

$$C_n = 10.75 - \left( \frac{L - 350}{150} \right)^{1.5} \quad \text{若 } 350m \leq L \leq 500m$$

$k$  = 材料係數，例如：

對於屈服應力為  $235\text{N/mm}^2$  及以上的軟鋼而言， $k=1.0$ 。

對於屈服應力為  $315\text{N/mm}^2$  及以上的高強度鋼而言， $k=0.78$ 。

對於屈服應力為  $355\text{N/mm}^2$  及以上高強度鋼而言， $k=0.72$ 。

2 依據上文第 1 段的截面模數要求的船體桁材的所有連續縱向構件的尺寸應保持在船中  $0.4L$  的範圍內。但在特殊情況下，基於對船型、船體構形和載重條件的考慮，構件尺寸在  $0.4L$  部分的末端方向可逐漸減少，但不要限制船舶的裝載靈活性。

3 然而，上述標準可不適用於異常船型或設計，例如對於非常規主配載和/或重量分配的船舶。”

**RESOLUTION MSC.105(73)**  
**(adopted on 5 December 2000)**

**ADOPTION OF AMENDMENTS TO THE GUIDELINES ON THE ENHANCED  
PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS  
AND OIL TANKERS (RESOLUTION A.744(18), AS AMENDED)**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.744(18) by which the Assembly adopted the Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers (the Guidelines),

RECALLING FURTHER article VIII(b) and regulation XI/2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”) concerning the procedure for amending the Guidelines,

NOTING that the Assembly, when adopting resolution A.744(18), requested the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Guidelines under review and update them as necessary, in the light of experience gained in their application,

NOTING ALSO resolution MSC.49(66) and resolution 2 of the 1997 Conference of Contracting Governments to the Convention by which amendments to resolution A.744(18) were adopted by the Maritime Safety Committee and the Conference of Contracting Governments to the Convention, respectively, in accordance with article VIII(b) and regulation XI/2 of the Convention,

HAVING CONSIDERED, at its seventy-third session, amendments to the Guidelines proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2002, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2002 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

**ANNEX****AMENDMENTS TO THE GUIDELINES ON THE ENHANCED PROGRAMME  
OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL  
TANKERS (RESOLUTION A.744(18), AS AMENDED)****ANNEX A****GUIDELINES ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING  
SURVEYS OF BULK CARRIERS**

- 1 The existing text of paragraph 2.2.2 is replaced by the following:

“2.2.2 For ships of 15 years of age and over, inspection of the outside of the ship’s bottom should be carried out with the ship in dry dock. For ships of less than 15 years of age, alternate inspections of the ship’s bottom not conducted in conjunction with the enhanced survey during the periodical survey may be carried out with the ship afloat. Inspection of the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff are available”.

**ANNEX B****GUIDELINES ON THE ENHANCED PROGRAMME OF INSPECTIONS  
DURING SURVEYS OF OIL TANKERS**

- 2 The existing text of paragraph 2.2.2 is replaced by the following:

“2.2.2 For ships of 15 years of age and over, inspection of the outside of the ship’s bottom should be carried out with the ship in dry dock. For ships of less than 15 years of age, alternate inspections of the ship’s bottom not conducted in conjunction with the enhanced survey during the periodical survey may be carried out with the ship afloat. Inspection of the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff are available”.

- 3 The following new paragraph 8.1.1.1 is added after the existing paragraph 8.1.1:

“8.1.1.1 In case of oil tankers of 130 m in length and upwards (as defined in the International Convention on Load Lines in force), the ship's longitudinal strength should be evaluated by using the thickness of structural members measured, renewed and reinforced, as appropriate, during the renewal survey of safety construction carried out after the ship reached 10 years of age, in accordance with the criteria for longitudinal strength of the ship's hull girder for oil tankers specified in annex 12.”

- 4 The following new paragraph 8.1.2.1 is added after the existing paragraph 8.1.2:

“8.1.2.1 The final result of the evaluation of the ship's longitudinal strength required in 8.1.1.1, after renewal or reinforcement work of structural members, if carried out as a result of initial evaluation, should be reported as a part of the condition evaluation report.”



5 In annex 8, the following new paragraph 3.4 is added after the existing paragraph 3.3:

“3.4 Evaluation result of the ship’s longitudinal strength (for oil tankers of 130 m in length and upwards and of over 10 years of age).”

6 In annex 9, the following is added at the end:

“Evaluation result of longitudinal strength of the hull girder of oil tankers of 130 m in length and upwards and of over 10 years of age (Of sections 1, 2 and 3 below, only one applicable section should be completed)

1 This section applies to ships regardless of the date of construction: Transverse sectional areas of deck flange (deck plating and deck longitudinals) and bottom flange (bottom shell plating and bottom longitudinals) of the ship’s hull girder have been calculated by using the thickness measured, renewed or reinforced, as appropriate, during the renewal survey of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate (SC renewal survey) most recently conducted after the ship reached 10 years of age, and found that the diminution of the transverse sectional area does not exceed 10% of the as-built area, as shown in the following table:

Table 1 Transverse sectional area of hull girder flange				
		Measured	As-built	Diminution
Transverse Section 1	Deck flange	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> ( %)
	Bottom flange	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> ( %)
Transverse section 2	Deck flange	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> ( %)
	Bottom flange	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> ( %)
Transverse section 3	Deck flange	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> ( %)
	Bottom flange	cm <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup> ( %)

2 This section applies to ships constructed on or after 1 July 2002: Section moduli of transverse section of the ship’s hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.1 of annex 12, and are found to be within their diminution limits determined by the Administration, taking into account the recommendations adopted by the Organization, as shown in the following table:

Table 2 Transverse section modulus of hull girder				
		Z <sub>act</sub> (cm <sup>3</sup> ) * <sup>1</sup>	Z <sub>req</sub> (cm <sup>3</sup> ) * <sup>2</sup>	Remarks
Transverse section 1	Upper deck			
	Bottom			
Transverse section 2	Upper deck			
	Bottom			
Transverse section 3	Upper deck			
	Bottom			

## Notes

- \*1  $Z_{act}$  means the actual section moduli of the transverse section of the ship's hull girder calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey, in accordance with the provisions of paragraph 2.2.1.1 of annex 12.
- \*2  $Z_{req}$  means diminution limit of the longitudinal bending strength of ships, as calculated in accordance with the provisions of paragraph 2.2.1.1 of annex 12.

The calculation sheets for  $Z_{act}$  should be attached to this report.

3 This section applies to ships constructed before 1 July 2002: Section moduli of transverse section of the ship's hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.2 of annex 12, and found to meet the criteria required by the Administration or the recognized classification society and that  $Z_{act}$  is not less than  $Z_{mc}$  (defined in \*2 below) as specified in appendix 2 to annex 12, as shown in the following table:

Describe the criteria for acceptance of the minimum section moduli of the ship's hull girder for ships in service required by the Administration or the recognized classification society.

		$Z_{act} (\text{cm}^3)$ *1	$Z_{mc} (\text{cm}^3)$ *2	Remark
Transverse section 1	Upper deck			
	Bottom			
Transverse section 2	Upper deck			
	Bottom			
Transverse section 3	Upper deck			
	Bottom			

## Notes

- \*1 As defined in note \*1 of table 2.
- \*2  $Z_{mc}$  means the diminution limit of minimum section modulus calculated in accordance with provisions of paragraph 2.2.1.2 of annex 12.”

7 The following new annex 12 is added after annex 11:

## “ANNEX 12

### CRITERIA FOR LONGITUDINAL STRENGTH OF HULL GIRDER FOR OIL TANKERS

#### 1 General

1.1 These criteria should be used for the evaluation of the longitudinal strength of the ship's hull girder as required by 8.1.1.1.

1.2 In order that the ship's longitudinal strength to be evaluated can be recognized as valid, fillet welding between longitudinal internal members and hull envelopes should be in sound condition so as to keep integrity of longitudinal internal members with hull envelopes.

#### 2 Evaluation of longitudinal strength

On oil tankers of 130 m in length and upwards and of over 10 years of age, the longitudinal strength of the ship's hull girder should be evaluated in compliance with the requirements of this annex on the basis of the thickness measured, renewed or reinforced, as appropriate, during the renewal survey of the Cargo Ship Safety Construction Certificate or Cargo Ship Safety Certificate (SC renewal survey).

##### 2.1 Calculation of transverse sectional areas of deck and bottom flanges of hull girder

2.1.1 The transverse sectional areas of deck flange (deck plating and deck longitudinals) and bottom flange (bottom shell plating and bottom longitudinals) of the ship's hull girder should be calculated by using the thickness measured, renewed or reinforced, as appropriate, during the SC renewal survey.

2.1.2 If the diminution of sectional areas of either deck or bottom flange exceeds 10% of their respective as-built area (i.e., original sectional area when the ship was built), either one of the following measures should be taken:

- .1 to renew or reinforce the deck or bottom flanges so that the actual sectional area is not less than 90% of the as-built area; or
- .2 to calculate the actual section moduli ( $Z_{act}$ ) of transverse section of the ship's hull girder by applying the calculation method specified in appendix 1, by using the thickness measured, renewed or reinforced, as appropriate, during the SC renewal survey.

## 2.2 Requirements for transverse section modulus of hull girder

2.2.1 The actual section moduli of the transverse section of the ship's hull girder, calculated in accordance with paragraph 2.1.2.2, should satisfy either of the following provisions, as applicable:

- .1 for ships constructed on or after 1 July 2002, the actual section moduli ( $Z_{act}$ ) of the transverse section of the ship's hull girder calculated in accordance with the requirements of paragraph 2.1.2.2 should be not less than the diminution limits determined by the Administration, taking into account the recommendations adopted by the Organization; or
- .2 for ships constructed before 1 July 2002, the actual section moduli ( $Z_{act}$ ) of the transverse section of the ship's hull girder calculated in accordance with the requirements of paragraph 2.1.2.2 should meet the criteria for minimum section modulus for ships in service required by the Administration or recognized classification society, provided that in no case  $Z_{act}$  should be less than the diminution limit of the minimum section modulus ( $Z_{mc}$ ) as specified in appendix 2.

### APPENDIX 1

#### CALCULATION CRITERIA OF SECTION MODULI OF MIDSHIP SECTION OF HULL GIRDER

- 1 When calculating the transverse section modulus of the ship's hull girder, the sectional area of all continuous longitudinal strength members is to be taken into account.
- 2 Large openings, i.e., openings exceeding 2.5 m in length or 1.2 m in breadth and scallops, where scallop welding is applied, are always to be deducted from the sectional areas used in the section modulus calculation.
- 3 Smaller openings (manholes, lightening holes, single scallops in way of seams, etc.) need not be deducted, provided that the sum of their breadths or shadow area breadths in one transverse section does not reduce the section modulus at deck or bottom by more than 3% and provided that the height of lightening holes, draining holes and single scallops in longitudinals or longitudinal girders does not exceed 25% of the web depth, for scallops maximum 75mm.
- 4 A deduction-free sum of smaller opening breadths in one transverse section in the bottom or deck area of  $0.06(B - \Sigma b)$  (where  $B$  = breadth of ship,  $\Sigma b$  = total breadth of large openings) may be considered equivalent to the above reduction in sectional modulus.
- 5 The shadow area will be obtained by drawing two tangent lines with an opening angle of  $30^\circ$ .

6 The deck modulus is related to the moulded deck line at side.

7 The bottom modulus is related to the base line.

8 Continuous trunks and longitudinal hatch coamings are to be included in the longitudinal sectional area provided they are effectively supported by longitudinal bulkheads or deep girders. The deck modulus is then to be calculated by dividing the moment of inertia by the following distance, provided this is greater than the distance to the deck line at side:

$$y_t = y \left( 0.9 + 0.2 \frac{x}{B} \right)$$

where:

$y$  = distance from neutral axis to top of continuous strength member

$x$  = distance from top of continuous strength member to centreline of the ship

$x$  and  $y$  to be measured to the point giving the largest value of  $y_t$

9 Longitudinal girders between multi-hatchways will be considered by special calculations.

## APPENDIX 2

### DIMINUTION LIMIT OF MINIMUM LONGITUDINAL STRENGTH OF SHIPS IN SERVICE

1 The diminution limit of the minimum section modulus ( $Z_{mc}$ ) of oil tankers in service is given by the following formula:

$$Z_{mc} = cL^2 B(C_b + 0.7)k \quad (\text{cm}^3)$$

where:

$L$  = Length of ships.  $L$  is the distance, in metres, on the summer load waterline from the fore side of stem to the after side of the rudder post, or the centre of the rudder stock if there is no rudder post.  $L$  is not to be less than 96%, and need not be greater than 97%, of the extreme length on the summer load waterline. In ships with unusual stern and bow arrangement, the length  $L$  may be specially considered

$B$  = Greatest moulded breadth in metres

$C_b$  = Moulded block coefficient at draught  $d$  corresponding to summer load waterline, based on  $L$  and  $B$ .  $C_b$  is not to be taken less than 0.6

$$C_b = \frac{\text{moulded displacement}(m^3) \text{ at draught } d}{LBd}$$

$$c = 0.9c_n$$

$$c_n = 10.75 - \left( \frac{300-L}{100} \right)^{1.5} \quad \text{for } 130 \text{ m} \leq L \leq 300 \text{ m}$$

$$c_n = 10.75 \quad \text{for } 300 \text{ m} < L < 350 \text{ m}$$

$$c_n = 10.75 - \left( \frac{L-350}{150} \right)^{1.5} \quad \text{for } 350 \text{ m} \leq L \leq 500 \text{ m}$$

$$k = \text{material factor, e.g.:}$$

$k = 1.0$  for mild steel with yield stress of 235 N/mm<sup>2</sup> and over

$k = 0.78$  for high tensile steel with yield stress of 315 N/mm<sup>2</sup> and over

$k = 0.72$  for high tensile steel with yield stress of 355 N/mm<sup>2</sup> and over

2 Scantlings of all continuous longitudinal members of the ship's hull girder based on the section modulus requirement in 1 above are to be maintained within 0.4  $L$  amidships. However, in special cases, based on consideration of type of ship, hull form and loading conditions, the scantlings may be gradually reduced towards the end of 0.4  $L$  part, bearing in mind the desire not to inhibit the ship's loading flexibility.

3 However, the above standard may not be applicable to ships of unusual type or design, e.g., for ships of unusual main proportions and/or weight distributions."

#### 第 57/2015 號行政長官公告

中華人民共和國於一九九九年十二月十三日以照會通知聯合國秘書長，經修訂的《1974年國際海上人命安全公約》自一九九九年十二月二十日起適用於澳門特別行政區；

國際海事組織海上安全委員會於二零零二年五月二十四日透過第MSC.125(75)號決議通過了《散貨船和油輪檢驗期間的強化檢查方案指南》(經修正的第A.744(18)號決議)的修正案，該修正案自二零零四年一月一日起適用於澳門特別行政區；

基於此，行政長官根據澳門特別行政區第3/1999號法律第六條第一款的規定，命令公佈包含上指修正案的MSC.125(75)號決議的中文及英文文本。

二零一五年五月十九日發佈。

代理行政長官 陳海帆

#### Aviso do Chefe do Executivo n.º 57/2015

Considerando que a República Popular da China, por nota datada de 13 de Dezembro de 1999, notificou o Secretário-Geral das Nações Unidas sobre a aplicação da Convenção Internacional para a Salvaguarda da Vida Humana no Mar de 1974, tal como emendada, na Região Administrativa Especial de Macau a partir de 20 de Dezembro de 1999;

Considerando igualmente que, em 24 de Maio de 2002, o Comité de Segurança Marítima da Organização Marítima Internacional, através da resolução MSC.125(75), adoptou emendas às Directrizes relativas ao Programa Reforçado de Inspeções no âmbito das Vistorias a Graneleiros e Petroleiros (resolução A.744(18), tal como emendada), e que tais emendas são aplicáveis na Região Administrativa Especial de Macau desde 1 de Janeiro de 2004;

O Chefe do Executivo manda publicar, nos termos do n.º 1 do artigo 6.º da Lei n.º 3/1999 da Região Administrativa Especial de Macau, a resolução MSC.125(75), que contém as referidas emendas, nos seus textos em línguas chinesa e inglesa.

Promulgado em 19 de Maio de 2015.

A Chefe do Executivo, interina, Chan Hoi Fan.