Structural Rules for Container Ships

NR 625

AMENDMENTS

November 2017

These sheets contain amendments within the following Sections of July 2016 issue of the *Structural Rules for Container Ships.*

These amendments are cumulative with:

- Amendments January 1st, 2017

These amendments are effective from November 1st, 2017.

Chapter	Section / Appendix
Chapter 3	Sec 1, Sec 3, Sec 6
Chapter 4	Sec 1, Sec 2, Sec 3, Sec 4, Sec 5, Sec 6, Sec 7, Sec 8
Chapter 6	Sec 2, Sec 3, Sec 6
Chapter 7	Sec 2, Sec 3
Chapter 9	Sec 1
Chapter 10	Sec 1
Chapter 11	Sec 4, Sec 5
Chapter 12	Sec 3
Chapter 14	Sec 1

MARINE & OFFSHORE - GENERAL CONDITIONS

1. INDEPENDENCY OF THE SOCIETY AND APPLICABLE TERMS

1.1. The Society shall remain at all times an independent contractor and neither the Society nor any of its officers, employees, servants, agents or subcontractors shall be or act as an employee, servant or agent of any other party hereto in the performance of the Services.

1.2. The operations of the Society in providing its Services are exclusively conducted by way of random inspections and do not, in any circumstances, involve monitoring or exhaustive verification.

1.3. The Society acts as a services provider. This cannot be construed as an obligation bearing on the Society to obtain a result or as a warranty. The Society is not and may not be considered as an underwriter, broker in Unit's sale or chartering, expert in Unit's valuation, consulting engineer, controller, naval architect, manufacturer, shipbuilder, repair or conversion yard, charterer or shipowner; none of them above listed being relieved of any of their expressed or implied obligations as a result of the interventions of the Society.

1.4. The Services are carried out by the Society according to the applicable Rules and to the Bureau Veritas' Code of Ethics. The Society only is qualified to apply and interpret its Rules.

1.5. The Client acknowledges the latest versions of the Conditions and of the applicable Rules applying to the Services' performance.

1.6. Unless an express written agreement is made between the Parties on the applicable Rules, the applicable Rules shall be the rules applicable at the time of the Services' performance and con tract's execution.

1.7. The Services' performance is solely based on the Conditions. No other terms shall apply whether express or implied.

2. DEFINITIONS

2.1. "**Certificate(s)**" means class certificates, attestations and reports following the Society's intervention. The Certificates are an appraisement given by the Society to the Client, at a certain date, following surveys by its surveyors on the level of compliance of the Unit to the Society's Rules or to the documents of reference for the Services provided. They cannot be construed as an implied or express warranty of safety, fitness for the purpose, seaworthiness of the Unit or of its value for sale, insurance or chartering.

2.2. "**Certification**" means the activity of certification in application of national and international regulations or standards, in particular by delegation from different governments that can result in the issuance of a certificate.

2.3. "**Classification**" means the classification of a Unit that can result or not in the issuance of a class certificate with reference to the Rules.

2.4. "**Client**" means the Party and/or its representative requesting the Services.

2.5. "**Conditions**" means the terms and conditions set out in the present document.

2.6. "**Industry Practice**" means International Maritime and/or Offshore industry practices.

2.7. "**Intellectual Property**" means all patents, rights to inventions, utility models, copyright and related rights, trade marks, logos, service marks, trade dress, business and domain names, rights in trade dress or get-up, rights in goodwill or to sue for passing off, unfair competition rights, rights in designs, rights in computer software, database rights, topography rights, moral rights, rights in confidential information (including know-how and trade secrets), methods and proto cols for Services, and any other intellectual property rights, in each case whether capable of registration, registered or unregistered and including all applications for and renewals, reversions or extensions of such rights, and all similar or equivalent rights or forms of protection in any part of the world.

2.8. "**Parties**" means the Society and Client together.

2.9. "**Party**" means the Society or the Client.

2.10. "**Register**" means the register published annually by the Society.

2.11. "**Rules**" means the Society's classification rules, guidance notes and other documents. The Rules, procedures and instructions of the Society take into account at the date of their preparation the state of currently available and proven technical minimum requirements but are not a standard or a code of construction neither a guide for maintenance, a safety handbook or a guide of professional practices, all of which are assumed to be known in detail and carefully followed at all times by the Client.

2.12. "**Services**" means the services set out in clauses 2.2 and 2.3 but also other services related to Classification and Certification such as, but not limited to: ship and company safety management certification, ship and port security certification, training activities, all activities and duties incidental thereto such as documentation on any supporting means, software, instrumentation, measurements, tests and trials on board.

2.13. "**Society**" means the classification society '**Bureau Veritas Marine & Offshore SAS**', a company organized and existing under the laws of France, registered in Nanterre under the number 821 131 844, or any other legal entity of Bureau Veritas Group as may be specified in the relevant contract, and whose main activities are Classification and Certification of ships or offshore units.

2.14. "**Unit**" means any ship or vessel or offshore unit or structure of any type or part of it or system whether linked to shore, river bed or sea bed or not, whether operated or located at sea or in inland waters or partly on land, including submarines, hovercrafts, drilling rigs, offshore installations of any type and of any purpose, their related and ancillary equipment, subsea or not, such as well head and pipelines, mooring legs and mooring points or otherwise as decided by the Society.

3. SCOPE AND PERFORMANCE

3.1. The Society shall perform the Services according to the applicable national and international standards and Industry Practice and always on the assumption that the Client is aware of such standards and Industry Practice.

3.2. Subject to the Services performance and always by reference to the Rules, the Society shall:

- review the construction arrangements of the Unit as shown on the documents provided by the Client;
- conduct the Unit surveys at the place of the Unit construction;
- class the Unit and enters the Unit's class in the Society's Register;
- survey the Unit periodically in service to note that the requirements for the maintenance of class are met. The Client shall inform the Society without delay of any circumstances which may cause any changes on the conducted surveys or Services.

The Society will not:

- declare the acceptance or commissioning of a Unit, nor its construction in conformity with its design, such activities remaining under the exclusive responsibility of the Unit's owner or builder;
- engage in any work relating to the design, construction, production or repair checks, neither in the operation of the Unit or the Unit's trade, neither in any advisory services, and cannot be held liable on those accounts.

4. RESERVATION CLAUSE

4.1. The Client shall always: (i) maintain the Unit in good condition after surveys; (ii) present the Unit after surveys; (iii) present the Unit for surveys; and (iv) inform the Society in due course of any circumstances that may affect the given appraisement of the Unit or cause to modify the scope of the Services.

4.2. Certificates referring to the Society's Rules are only valid if issued by the Society.

4.3. The Society has entire control over the Certificates issued and may at any time withdraw a Certificate at its entire discretion including, but not limited to, in the following situations: where the Client fails to comply in due time with instructions of the Society or where the Client fails to pay in accordance with clause 6.2 hereunder.

5. ACCESS AND SAFETY

5.1. The Client shall give to the Society all access and information necessary for the efficient performance of the requested Services. The Client shall be the sole responsible for the conditions of presentation of the Unit for tests, trials and surveys and the conditions under which tests and trials are carried out. Any information, drawings, etc. required for the performance of the Services must be made available in due time.

5.2. The Client shall notify the Society of any relevant safety issue and shall take all necessary safety-related measures to ensure a safe work environment for the Society or any of its officers, employees, servants, agents or subcontractors and shall comply with all applicable safety regulations.

6. PAYMENT OF INVOICES

6.1. The provision of the Services by the Society, whether complete or not, involve, for the part carried out, the payment of fees thirty (30) days upon issuance of the invoice.

6.2. Without prejudice to any other rights hereunder, in case of Client's payment default, the Society shall be entitled to charge, in addition to the amount not properly paid, interests equal to twelve (12) months LIBOR plus two (2) per cent as of due date calculated on the number of days such payment is delinquent. The Society shall also have the right to withhold certificates and other documents and/or to suspend or revoke the validity of certificates.

6.3. In case of dispute on the invoice amount, the undisputed portion of the invoice shall be paid and an explanation on the dispute shall accompany payment so that action can be taken to solve the dispute.

7. 7. LIABILITY

7.1. The Society bears no liability for consequential loss. For the purpose of this clause consequential loss shall include, without limitation:

- Indirect or consequential loss;
- Any loss and/or deferral of production, loss of product, loss of use, loss of bargain, loss of revenue, loss of profit or anticipated profit, loss of business and business interruption, in each case whether direct or indirect.

The Client shall save, indemnify, defend and hold harmless the Society from the Client's own consequential loss regardless of cause.

7.2. In any case, the Society's maximum liability towards the Client is limited to one hundred and fifty per-cents (150%) of the price paid by the Client to the Society for the performance of the Services. This limit applies regardless of fault by the Society, including breach of contract, breach of warranty, tort, strict liability, breach of statute.

7.3. All claims shall be presented to the Society in writing within three (3) months of the Services' performance or (if later) the date when the events which are relied on were first discovered by the Client. Any claim not so presented as defined above shall be deemed waived and absolutely time barred.

8. INDEMNITY CLAUSE

8.1. The Client agrees to release, indemnify and hold harmless the Society from and against any and all claims, demands, lawsuits or actions for damages, including legal fees, for harm or loss to persons and/or property tangible, intangible or otherwise which may be brought against the Society, incidental to, arising out of or in connection with the performance of the Services except for those claims caused solely and completely by the negligence of the Society, its officers, employees, servants, agents or subcontractors.

9. TERMINATION

9.1. The Parties shall have the right to terminate the Services (and the relevant contract) for convenience after giving the other Party thirty (30) days' written notice, and without prejudice to clause 6 above.

9.2. In such a case, the class granted to the concerned Unit and the previously issued certificates shall remain valid until the date of effect of the termination notice issued, subject to compliance with clause 4.1 and 6 above.

10. FORCE MAJEURE

10.1. Neither Party shall be responsible for any failure to fulfil any term or provision of the Conditions if and to the extent that fulfilment has been delayed or temporarily prevented by a force majeure occurrence without the fault or negligence of the Party affected and which, by the exercise of reasonable diligence, the said Party is unable to provide against.

10.2. For the purpose of this clause, force majeure shall mean any circumstance not being within a Party's reasonable control including, but not limited to: acts of God, natural disasters, epidemics or pandemics, wars, terrorist attacks, riots, sabotages, impositions of sanctions, embargoes, nuclear, chemical or biological contaminations, laws or action taken by a government or public authority, quotas or prohibition, expropriations, destructions of the worksite, explosions, fires, accidents, any labour or trade disputes, strikes or lockouts

11. CONFIDENTIALITY

11.1. The documents and data provided to or prepared by the Society in performing the Services, and the information made available to the Society, are treated as confidential except where the information:

- is already known by the receiving Party from another source and is properly and lawfully in the possession of the receiving Party prior to the date that it is disclosed;
- is already in possession of the public or has entered the public domain, otherwise than through a breach of this obligation;
- is acquired independently from a third party that has the right to disseminate such information;
- is required to be disclosed under applicable law or by a governmental order, decree, regulation or rule or by a stock exchange authority (provided that the receiving Party shall make all reasonable efforts to give prompt written notice to the disclosing Party prior to such disclosure.

11.2. The Society and the Client shall use the confidential information exclusively within the framework of their activity underlying these Conditions.

11.3. Confidential information shall only be provided to third parties with the prior written consent of the other Party. However, such prior consent shall not be required when the Society provides the confidential information to a subsidiary.

11.4. The Society shall have the right to disclose the confidential information if required to do so under regulations of the International Association of Classifications Societies (IACS) or any statutory obligations.

12. INTELLECTUAL PROPERTY

12.1. Each Party exclusively owns all rights to its Intellectual Property created before or after the commencement date of the Conditions and whether or not associated with any contract between the Parties.

12.2. The Intellectual Property developed for the performance of the Services including, but not limited to drawings, calculations, and reports shall remain exclusive property of the Society.

13. ASSIGNMENT

13.1. The contract resulting from to these Conditions cannot be assigned or transferred by any means by a Party to a third party without the prior written consent of the other Party.

13.2. The Society shall however have the right to assign or transfer by any means the said contract to a subsidiary of the Bureau Veritas Group.

14. SEVERABILITY

14.1. Invalidity of one or more provisions does not affect the remaining provisions.

14.2. Definitions herein take precedence over other definitions which may appear in other documents issued by the Society.

14.3. In case of doubt as to the interpretation of the Conditions, the English text shall prevail.

15. GOVERNING LAW AND DISPUTE RESOLUTION

15.1. The Conditions shall be construed and governed by the laws of England and Wales.

15.2. The Society and the Client shall make every effort to settle any dispute amicably and in good faith by way of negotiation within thirty (30) days from the date of receipt by either one of the Parties of a written notice of such a dispute.

15.3. Failing that, the dispute shall finally be settled by arbitration under the LCIA rules, which rules are deemed to be incorporated by reference into this clause. The number of arbitrators shall be three (3). The place of arbitration shall be London (UK).

16. PROFESSIONNAL ETHICS

16.1. Each Party shall conduct all activities in compliance with all laws, statutes, rules, and regulations applicable to such Party including but not limited to: child labour, forced labour, collective bargaining, discrimination, abuse, working hours and minimum wages, anti-bribery, anti-corruption. Each of the Parties warrants that neither it, nor its affiliates, has made or will make, with respect to the matters provided for hereunder, any offer, payment, gift or authorization of the payment of any money directly or indirectly, to or for the use or benefit of any official or employee of the government, political party, official, or candidate.

16.2. In addition, the Client shall act consistently with the Society's Code of Ethics of Bureau Veritas. http://www.bureauveritas.com/home/about-us/ethics+and+compliance/

Amendments to NR 625

Ch 3, Sec 1, Table 2

Replace Tablefoot by the following one:

Table 2: Material factor k

(1) k may be taken equal to 0,66 for steels with a minimum yield stress R_{eH} equal to 390 N/mm^2, provided the hull structure is additionally verified for compliance with finite element analysis and spectral fatigue assessment according to NI 611.

Ch 3, Sec 1, [2.3] (amendments January 2017)

Add the following requirement [2.3.5]:

2.3.5 When steel plates of thickness greater than 50 mm, made of material with specified minimum yield stress equal to 460 N/mm^2 are used in the upper deck region (for upper deck plating, hatch top and side coaming or their attached longitudinals stiffeners), the material grade is at least to be EH.

Ch 3, Sec 3

Replace Table 1 by:

Table 1: Corrosion addition for one side of a structural member

Compartment type		t_{c1} or t_{c2}
Ballast water tank, bilge tank, drain storage tank, chain locker **(1)**		1,00
Exposed to atmosphere		1,00
Exposed to seawater **(2)**		1,00
Fuel and lube oil tank		0,50
Gas fuel tanks of ships with the additional service feature **gasfuel** or **dualfuel**		0,00
Cofferdam adjacent to the gas fuel tank on ships with the additional service feature **gasfuel** or **dualfuel**		1,00
Fresh water tank		0,50
Void spaces		0,50
Dry spaces (inside of machinery spaces, pump room, store rooms, steering gear space, passageways, etc.)		0,50 **(3)**
Container holds	Transverse bulkheads	0,50
	Elsewhere	1,00
Accommodation spaces		0,00
Compartments other than those mentioned above		0,50

(1) 1,0 mm is to be added to the plate surface within 3 m above the upper surface of the chain locker bottom.
(2) For the determination of the corrosion addition of the outer shell plating, the pipe tunnel is considered as for a ballast water tank.
(3) For the direct strength assessment according to Chapter 7, t_{c1} or t_{c2} is to be taken equal to 0,0 mm.

Ch 3, Sec 6, [1.4.6] (amendments January 2017)

Replace the first list by:

- for $75° \leq \varphi_w \leq 90°$:

$$Z_{pl} = \frac{f_w h_w t_w (h_w + t_p)}{2000} + (2\gamma - 1)\frac{A_f (h_{f-ctr} + t_p/2)}{1000}$$

- for $\varphi_w < 75°$:

$$Z_{pl} = \frac{f_w\ h_w\ t_w\ (h_w + t_p)}{2000}\sin\varphi_w + (2\gamma - 1)\frac{A_f\ [(h_{f\text{-}ctr} + t_p/2)\ \sin\varphi_w - b_{f\text{-}ctr}\ \cos\varphi_w]}{1000}$$

Ch 4, Sec 1, [1] (amendments January 2017)

Replace the title of sub-article [1.1] by "Definition".

Ch 4, Sec 2, Symbols

Replace the definition of T_R by the following one:

T_R : Dimensionless roll period, to be taken as:
$T_R = T_\theta\ (g / L)^{0,5}$
without being taken greater than $75 / (L)^{0,5}$

Ch 4, Sec 2, Table 13

Replace the Row "Longitudinal accelerations" as follows:

Table 13 : Load combination factors LCFs for OVA load cases - Strength assessment

Load component		LCF	OVA1-P	OVA2-P	OVA1-S	OVA2-S
Longitudinal accelerations	a_{surge}	C_{XS}	$8,40\ f_{TL} - 0,81$	$0,81 - 8,40\ f_{TL}$	$8,40\ f_{TL} - 0,81$	$0,81 - 8,40\ f_{TL}$
	$a_{pitch\text{-}x}$	C_{XP}	1	− 1	1	− 1
	$a_{yaw\text{-}x}$	C_{XY}	$0,30 + 13,30\ f_{TL}$	$- 0,30 - 13,30\ f_{TL}$	$- 0,30 - 13,30\ f_{TL}$	$0,30 + 13,30\ f_{TL}$
	$g \sin\varphi$	C_{XG}	− 0,70	0,70	− 0,70	0,70

Ch 4, Sec 3, Symbols (amendments January 2017)

Replace the definition of "f_α" by:

f_α : Speed effect coefficient for the reference length, to be taken as, unless otherwise specified:
- for strength assessment: $f_\alpha = 1,0$
- for fatigue assessment: $f_\alpha = 1,0 + C_\alpha\ (F - F_5)$

Replace the reference "Sec 1, [1.2.1]" by "Ch 1, Sec 4, [3.4]" in the definition of "x y z".

Ch 4, Sec 3, [2.1.1]

Replace the definition of θ by:

The roll angle θ, in deg, is to be taken as:

$$\theta = \frac{9000\ (1,25 - 0,025 T_\theta)}{(B + 75)\pi} \cdot f_{fa} \cdot f_{BK}$$

without being taken less than:

$$\frac{1862}{(B + 75)} \cdot f_{fa} \cdot f_{BK}$$

Ch 4, Sec 3, [3.3.3] (amendments January 2017)

Replace item h) by:

h) Two specific load cases $SPLC_{max}$ and $SPLC_{min}$:

- $SPLC_{max}$ is defined with the following LCFs:

  $C_{ZH} = 10,72\ f_{TL} - 0,28$

  $C_{ZR} = 0$

  $C_{ZP} = 1,2 - 6,84\ f_{TL}$

- $SPLC_{min}$ is defined with the following LCFs:

  $C_{ZH} = 0,28 - 10,72\ f_{TL}$

  $C_{ZR} = 0$

  $C_{ZP} = 6,84\ f_{TL} - 1,2$

Ch 4, Sec 4, Symbols (amendments January 2017)

Replace the reference "Sec 1, [1.2.1]" by "Ch 1, Sec 4, [3.4]" in the definition of "x".

Ch 4, Sec 4, [2.1]

Replace requirement [2.1.2] as follows:

2.1.2 Still water loads for the fatigue assessment

The still water bending moment and shear force values and distribution to be used for the fatigue assessment are to be taken from the loading condition as defined in Chapter 9.

Ch 4, Sec 4, [2.2.3] (amendments January 2017)

Replace the formula of "M_{sw-min}" by "$M_{sw-min} = 0$" and delete the definition of "$M_{wv-s-mid}$".

Ch 4, Sec 5, Symbols (amendments January 2017)

Replace the reference "Sec 1, [1.2.1]" by "Ch 1, Sec 4, [3.4]" in the definition of "x, y, z".

Ch 4, Sec 5, [2.2.3]

Replace the first sentence of the definition of "$P_{W,d}$":

$P_{W,d}$: Pressure, in kN/m^2, obtained at side of the exposed deck for HVM and FVM load cases as defined in [1.3], not to be taken less than:

Ch 4, Sec 5, [3.2.2] (amendments January 2017)

Replace the formula of P_{SLI} by:

$$P_{SLI} = 100\frac{h_{SL}^2 - (z - T_{LC})^2}{T_{RZ}^2 \tan\beta}$$

Ch 4, Sec 5, [3.3.1]

Replace the definition of "H" by (amendments January 2017):

H : Wave parameter defined in Ch 4, Sec 3, for a reference length calculated with:

$\alpha = 0,65\ C_{W\text{-}LC}^{-1,3}$

$f_\alpha = 1,0$

Replace the definition of "C_z" by:

C_Z : Coefficient depending on the distance between the draught for the considered loading condition and the calculation point:

- for $z \geq 21,5\ H + T_{LC} - 11$: $C_Z = 10,75\ H - 0,5\ (z - T_{LC})$
- for $z < 21,5\ H + T_{LC} - 11$: $C_Z = 5,5$

Ch 4, Sec 5, Table 33 (amendments January 2017)

Replace the definition of "h_w" by:

h_w : Relative wave elevation, in m, at the waterline:
- for $y \geq 0$, calculated on portside of BR1-P
- for $y < 0$, calculated on starboard side of BR1-S

Ch 4, Sec 6, Symbols

Replace the reference "Sec 1, [1.2.1]" by "Ch 1, Sec 4, [3.4]" in the definition of "x, y, z". (amendments January 2017)

Replace the definition of p_{drop} by the following one:

p_{drop} : Overpressure, in kN/m^2, due to sustained liquid flow through air pipe or overflow pipe in case of overfilling or filling during flow-through ballast water exchange.

When the total area of tank overflow openings is more than twice the sectional area of the related filling pipe, p_{drop} may be taken equal to 0.

Otherwise, p_{drop} is to be defined by the designer, but not to be taken less than 25 kN/m^2.

Insert the definition P_{pv} after p_{drop}

P_{pv} : Setting of pressure relief valve, in kN/m^2, if fitted, but not less than 25 kN/m^2

Replace the définition of ρ_L by the following one:

ρ_L : Density of liquid, in t/m^3, typically:
- 1,025 for ballast water
- 1,0 for fresh water
- 0,5 for methane.

Ch 4, Sec 6, [1.2]

Replace requirements [1.2.1] and [1.2.2] by the following ones:

1.2.1 Normal operations at sea

The static pressure P_{ls} due to liquid in tanks during normal operations at sea, in kN/m^2, is to be taken as:

- for gas fuel tanks: $P_{ls} = \rho_L\ g\ (z_{top} - z) + P_{pv}$
- for other tanks: $P_{ls} = \rho_L\ g\ (z_{top} - z)$

1.2.2 Harbour/sheltered water operations

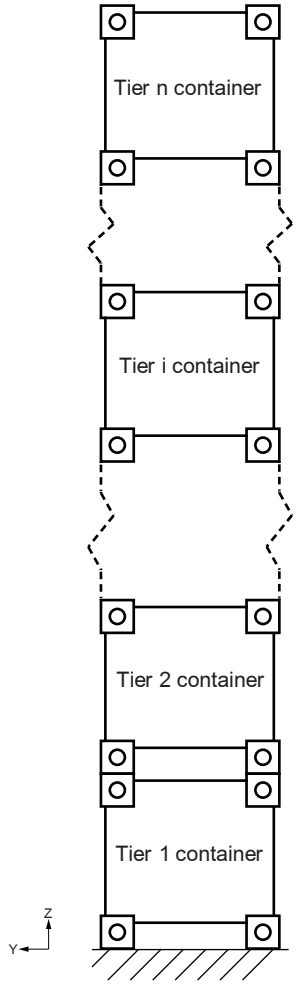
The static pressure P_{ls} due to liquid in tanks for harbour/sheltered water operations, in kN/m^2, is to be taken as:

- for gas fuel tanks: $P_{ls} = \rho_L\ g\ (z_{top} - z) + P_{pv}$
- for other tanks: $P_{ls} = \rho_L\ g\ (z_{top} - z)$

Ch 4, Sec 6

Replace Figure 3 by the following one:

Figure 3: Container levels in a stack



Ch 4, Sec 6, Table 5

Replace the Row "Fuel oil tanks" as follows:

Table 5 : Tank testing design pressures

Compartment	Still water pressure P_{ST}, in kN/m^2
Fuel oil tanks	The greater of the following: $P_{ST} = 10\ [(z_{top} - z) + h_{air}]$ $P_{ST} = 10\ [(z_{top} - z) + 2,4]$ $P_{ST} = 10\ [(z_{top} - z) + 0,1P_{PV}]$ $P_{ST} = 10\ (z_{bd} - z)$

Ch 4, Sec 7

Replace Table 2 by:

Table 2 : Design load scenario for fatigue assessment

				Fatigue (F: S+D)
Load components	**Hull girder**	VBM		$M_{sw\text{-}max} + M_{wv\text{-}LC}$
		HBM		$M_{wh\text{-}LC}$
		VSF		$Q_{sw\text{-}max} + Q_{wv\text{-}LC}$
		HSF		$Q_{wh\text{-}LC}$
		TM		$M_{wt\text{-}LC}$
	Local loads	P_{ex}	Exposed decks	–
			Outer shell	$P_S + P_W$
			Sides of superstructures and deckhouses	–
		P_{in}	Ballast tanks **(1)**	$P_{ls} + P_{ld}$
			Other tanks	
			Watertight boundaries	–
		P_{dk}	Exposed and non-exposed decks for uniform cargo	–
		F_u	Exposed and non-exposed decks for unit cargo	–
(1) Not applicable to prescriptive assessment.				

Ch 4, Sec 8, [3.3.5]

Replace the definitions "HH" and "HL" by:

Homogeneous Heavy (HH):

- homogeneous 40′ containers loaded on deck and in holds
- heavy cargo weight of 40′ containers is to be considered as defined in Ch 4, Sec 8, [3.2.3] and Ch 4, Sec 8, [3.2.4]
- scantling draught is to be considered together with the maximum design still water bending moment in hogging.

Homogeneous Light (HL):

- homogeneous 40′ containers loaded on deck and in holds
- light cargo weight of 40′ containers is to be considered as defined in Ch 4, Sec 8, [3.2.5] and Ch 4, Sec 8, [3.2.6]
- scantling draught is to be considered together with the maximum design still water bending moment in hogging.

Ch 4, Sec 8, [3.3.8] (amendments January 2017)

Replace the last item of the list by:

- the structural analysis is only carried out on the transverse watertight bulkheads.

Ch 4, Sec 8, [4.1] (amendments January 2017)

Replace requirement [4.1.1] by the following requirements [4.1.1] and [4.1.2]:

4.1.1 A single loading condition is to be selected from the loading manual considering the following criteria:

- the resulting still water bending màoment is at least equal to 95% of the maximum permissible still water bending moment ($M_{sw\text{-}max}$)
- the ship is homogeneously loaded
- the cargo holds are loaded up to their top
- the minimum ballast water is carried.

4.1.2 The full length model is generally to be loaded with 40′ containers; 20′ containers might be used to fill holds that cannot be entirely filled in with 40′ containers.

The selection criteria for the loading condition generally leads to a nominal container weight of 28 t / FEU (14 t / TEU). Any significant deviation to this value shall be discussed with the Society.

Ch 6, Sec 2, Table 1

Replace the row "Other tanks" and insert "Note 1" as follows:

Table 1 : Design load sets

Item	Design load set	Load component	Draught	Acceptance criteria	Design load scenario / Loading condition
Other tanks (fuel oil tank, fresh water tank)	TK-1	$P_{in} - P_{ex}$ **(2)**	T_{BAL}	AC-2	Sea-going / Normal ballast condition
	TK-2	$P_{in} - P_{ex}$ **(2)**	0,25 T_{SC}	AC-1	Harbour condition
	TK-3 **(5)**	$P_{in} - P_{ex}$ **(2)**	0,25 T_{SC}	AC-3	Tank testing condition

Note 1: For gas fuel tanks, the design load sets are to be in accordance with NR 529 Gas-fuelled ships.

(1) For outer shell only.

(2) P_{ex} is to be considered for external shell only.

(3) Distributed or concentrated loads only. Need not be combined with simultaneously occurring green sea pressure.

(4) Not applicable to external shell.

(5) Not applicable to gas fuel tanks.

Ch 6, Sec 3, Table 1 (amendments January 2017)

Replace the row "Bulkhead" by:

Element	Location	Area	Net thickness
Bulkhead	Internal tank boundary Transverse/longitudinal watertight bulkhead		$4,5 + 0,015\ L_1\ k^{0,5}$
	Non-tight bulkhead Wash bulkhead Bulkhead between dry spaces		$4,5 + 0,01\ L_1\ k^{0,5}$
	Pillar bulkhead in fore and aft peaks		7,5

Ch 6, Sec 6, [2.2] (amendments January 2017)

Insert the following requirement [2.2.2] and Figure 1 as follows:

2.2.2 Stress concentration in way of hatch corners

When the primary structure is assessed using a 3D beam model, stress concentration factor K_t at the free edge of hatch corners (radius or elliptical type) of upper deck in the cargo hold region (see Fig 1) may be evaluated in head sea condition with the following formula:

$$K_t = f_c\left[1 + \left(\frac{b}{1,68(\ell + 1,6b)}\frac{0,6\ell}{r_b}\right)^{0,65}\right]$$

where:

f_c : Coefficient accounting for an elliptical shape equal to:

$$f_c = \frac{1}{3} + \frac{2r_b}{3r_a}$$

with:

r_b : Length of minor arm of the ellipse

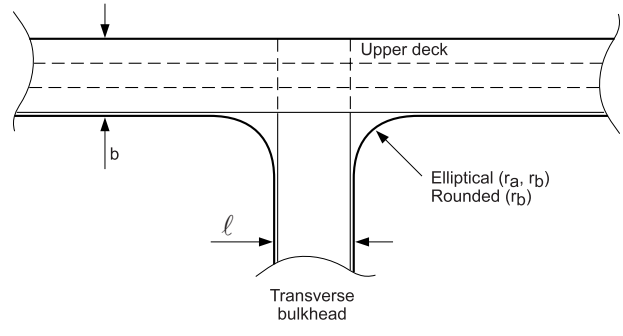
r_a : Length of major arm of the ellipse

f_c is not to be taken less than 0,8 unless proven otherwise, e.g. using a finite element analysis)

ℓ : Width of the cross deck

b : Width of the upper deck.

Figure 1: Hatch corner (upper deck) description



Ch 7, Sec 2, [2.4.2]

Replace item c) in requirement [2.4.2] by:

c) One element between every web stiffener on transverse and vertical web frames, see Fig 3.

Ch 7, Sec 2

Delete Figure 5

Ch 7, Sec 3, [2.1]

Replace requirement [2.1.1] by:

2.1.1 The following structural details located in the midship cargo hold region are to be assessed according to the fine mesh analysis procedure defined in [1.1.3]:

a) ends of hatch coamings, if any in this region

b) openings when required in Ch 7, Sec 2, Tab 1

c) large openings in the upper part of the inner hull and of the side shell in way of cargo holds (e.g. pilot doors, accommodation ladder).

For each above mentioned structural detail, one fine mesh model is required. The selection of the location of this fine mesh model is to be based on the detail which has the maximum yield utilisation factor λ_y.

Ch 7, Sec 3

Replace Table 1 and Table 2:

Table 1 : Screening areas for transverse web frame

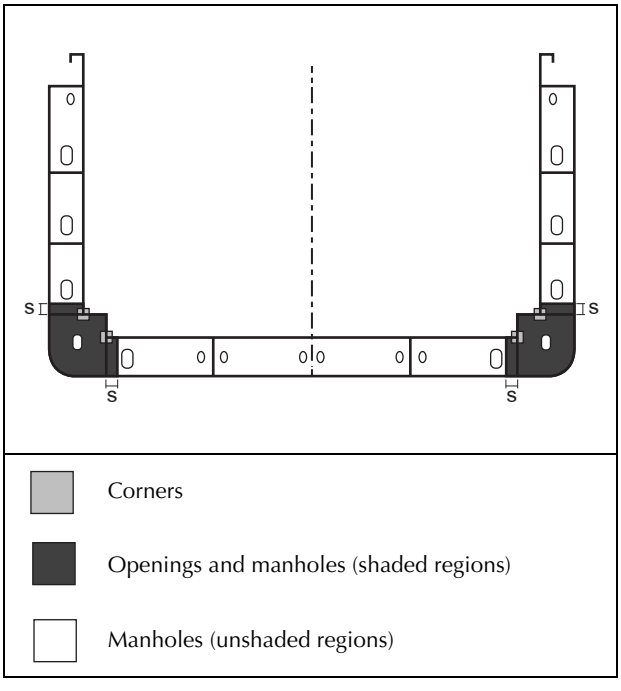
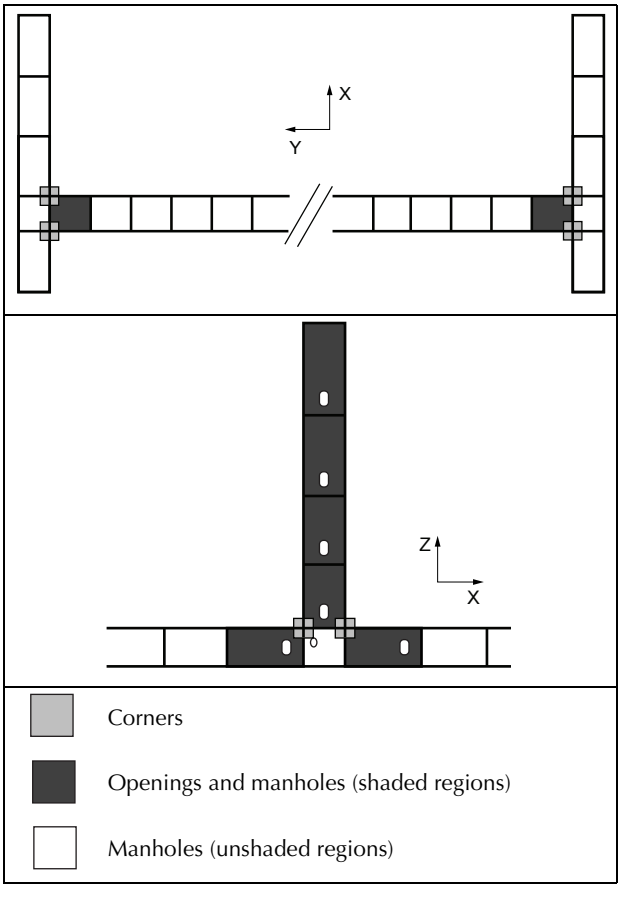


Table 2 : Screening areas for horizontal stringer and transverse bulkhead to double bottom connections



Ch 7, Sec 3, [3.1]

Replace requirement [3.1.1] by:

3.1.1 The following structural details and areas are to be evaluated by screening:

a) Representative hatch corners in way of cargo holds, as shown in Fig 1 (from the second deck to the top of hatch coaming, where second deck means the first complete deck below the main deck), in particular in way of:
   - connection between engine room area and cargo hold areas
   - connections between fuel oil tanks and adjacent cargo holds
   - watertight bulkheads
   - support bulkheads
   - any area with significant scantling discontinuities.

b) Manholes in webs of primary supporting members when required in Sec 2, Tab 1

c) Typical corners of web frame bilge area in way of connection of inner hull and lowermost stringer and connection of inner bottom and longitudinal step bulkhead as well as holes in this area, as shown in Tab 1

d) Typical openings in double bottom girders located in way of watertight bulkheads, as shown in Tab 2

e) Typical uppermost and lowest openings in vertical girders of transverse watertight bulkhead, as shown in Tab 2

f) Typical connection of double bottom girders and vertical girders of transverse watertight bulkheads, as shown in Tab 2

g) Typical connection of horizontal stringers of transverse watertight bulkheads with double hull, as shown in Tab 2

h) Openings in way of fuel oil tanks platforms, when deep fuel oil tanks are located in the cargo hold area (from the second deck to the upper deck)

i) Large brackets toes of primary members in fuel tanks.

Within each group of structural details having the same geometry and the same relative location inside the midship cargo region, the screening verification can be performed for the detail for which the yield utilisation factor λ_y is maximum.

Ch 7, Sec 3, [3.2.1]

Replace the first paragraph of requirement [3.2.1] by:

Stress in areas defined in [3.1], calculated for all the applicable FE load combinations given in [5], is to be checked against the following screening criterion:

$\lambda_{sc} \leq \lambda_{scperm}$

where:

λ_{sc} : Screening factor as defined in Tab 3

λ_{scperm} : Permissible screening factor as defined in Tab 3.

Ch 7, Sec 3, [4.1]

Replace requirement [4.1.1] by:

4.1.1 Evaluation of detailed stress requires the use of refined finite element mesh in way of areas of high stress. This fine mesh analysis can be carried out by fine mesh zones incorporated into the cargo hold model. Alternatively, separate local FE model with fine mesh zones in conjunction with the boundary conditions obtained from the cargo hold model may be used.

Ch 7, Sec 3

Replace Table 3 by:

Table 3 : Screening factors and permissible screening factors

Type of details	Screening factors λ_{sc}	Permissible screening factors λ_{scperm}	
		AC-2 AC-3 **(2)**	AC-1 **(2)**
Openings and manholes **(1)**	λ_y	0,85 λ_{yperm}	
Bracket toes of primary supporting members	Ch 7, Sec 3, Tab 4	1,50	1,20
Connection of primary members	1,67 λ_y	1,50	1,20
Hatch corner area	λ_y	0,95 λ_{yperm}	

(1) The representative element which has the maximum yield utilisation factor around the opening is to be verified against criteria.

(2) See Ch 7, Sec 1, [4] for acceptance criteria definition.

Note 1:

λ_y : Standard mesh yield utilisation factor, as defined in Ch 7, Sec 2, [5.2.3]

λ_{yperm} : Standard mesh permissible yield utilisation factor, as defined in Ch 7, Sec 2, [5.2.3].

Ch 7, Sec 3

Delete Table 5.

Ch 9, Sec 1, [5.1]

Delete existing requirement [5.1.5]. (amendments January 2017)

Insert the following requirement [5.1.3]:

5.1.3 Hull girder loads

The vertical still water bending moment and shear force distribution are to be taken as the maximum permissible value in seagoing operation.

The torsional still water moment is to be taken equal to zero.

Ch 9, Sec 1, [5.2]

Delete existing requirement [5.2.6]. (amendments January 2017)

Insert the following requirement [5.2.3]:

5.2.3 Hull girder loads

The vertical still water bending moment and shear force distribution are to be taken as the maximum permissible value in seagoing operation.

The torsional still water moment is to be taken equal to zero.

Ch 9, Sec 1, [6.1] (amendments January 2017)

Replace requirement [6.1.6] by:

6.1.6 Impact of hydro-elastic effects on damage

For ships greater than 200 m in length, in case the fatigue calculation is performed without taking into account hydro-elastic affects in accordance with requirements for class notation **WhiSp** and NR583, Whipping and Springing Assessment, the damage is to be corrected using the following partial safety factor:

$$\alpha_{HE} = 0,5 + \frac{L}{400}$$

Ch 10, Sec 1 [3.3]

Replace requirement [3.3.3] by:

3.3.3 Side shell plating

The net thickness t of the hull envelope plating, in mm, is not to be less than:

$$t = \frac{0,0158\alpha_p b}{C_d}\sqrt{\frac{P_{FI}}{C_a R_{eH}}}$$

where:

C_d : Plate capacity correction coefficient taken as:
$C_d = 1,2$

C_a : Permissible bending stress coefficient taken as:
$C_a = 1,0$ for acceptance criteria set AC-4.

Ch 11, Sec 4, [8.3]

Add the following requirement [8.3.2]

8.3.2 Maximum displacement

In general, the maximum displacement of the lashing bridge in the transverse direction is to be less than the following typical values:

- 10 mm for 1st tier lashing bridge
- 25 mm for 2nd tier lashing bridge
- 35 mm for 3rd tier and higher lashing bridge.

Greater displacements may be accepted provided they are taken into account in the lashing assessment according to Chapter 14.

Ch 11, Sec 5, [1.1.1] (amendments January 2017)

Replace the reference "NR467, Ch 8, Sec 7" by "NR467, Pt B, Ch 8, Sec 7".

Ch 11, Sec 5, [2.1.1] (amendments January 2017)

Replace the reference "NR467, Ch 8, Sec 8" by "NR467, Pt B, Ch 8, Sec 8".

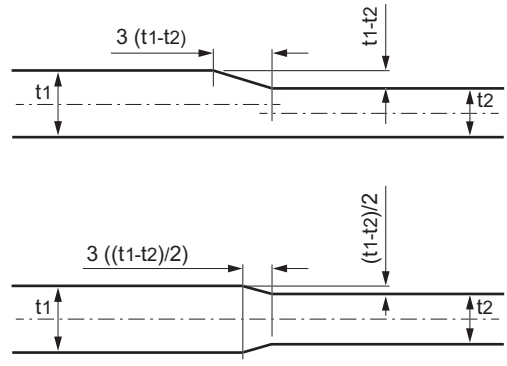
Ch 12, Sec 3, [3.2]

Insert the following Figure A and replace requirement [3.2.1] by the following one:

3.2.1 Taper

In the case of welding of plates with difference in as-built thickness greater than 4 mm on one side, the thicker plate is normally to be tapered. The taper length is to be not less than 3 times the difference in as-built thickness on the considered side (see Figure A).

FIgure A : Taper length



Ch 14, Sec 1, [2.4]

Replace requirement [2.4.3] by the following one:

2.4.3 Containers are to be secured by locking devices fitted at their lower corners at each tier, and capable of preventing horizontal and vertical movements. Bridge fittings are to be used to connect the tops of the rows in the transverse direction.

Alternatively, lashings fitted diagonally or vertically on container corners may be used to prevent vertical movements in addition to centring and stacking cones fitted between the tiers and in way of the base of the stack to prevent horizontal movements.

The upper tier containers are to be secured to the under tier containers by means of locking devices fitted at their corners and located between the two tiers.

For both external and internal lashing (see Fig 4), the vertical and horizontal gap between twistlock and container corner socket or support fitting are to be taken into consideration for the calculation of loads applied to the lashing equipment.

Typical values for vertical gap may be taken as follows:

- 12 mm, for manual and semi-automatic twistlocks
- 20 mm, for fully automatic twistlocks

Typical value for the horizontal gap may be taken as 5 mm.

Ch 14, Sec 1, [3.2]

Replace requirement [3.2.10] by the following one:

3.2.10 Each sample is to be clearly identified in the documents kept on board, as required in NR467, Pt F, Ch 11, Sec 5, [1.3.1].

Ch 14, Sec 1, [4.2]

Delete existing requirement [4.2.2]. (amendments January 2017)

Replace the existing requirement [4.2.1] by the following requirements [4.2.1] and [4.2.2] :

4.2.1 Stack of containers

A stack of containers consists of "n" containers connected vertically by securing devices.

The container located at the tier "i" within a stack is indicated in Fig 8.

4.2.2 Lashing levels

Lashing level "2i" corresponds to the top of the container at tier "i" and lashing level "2i – 1" corresponds to the bottom of the container at tier "i".

Ch 14, Sec 1, [4.3.3] (amendments January 2017)

Delete "n_{w1}" in the formulae of "$F_{W,X,i}$" and "$F_{W,Z,i}$".

Delete the definition of "n_{w1}".

Ch 14, Sec 1, [4.3.4] (amendments January 2017)

Delete "n_{w2}" in the formulae of "$F_{W,Y,i}$" and "$F_{W,Z,i}$".

Delete the definitions of "n_{w2}" and "T_θ".

Ch 14, Sec 1, [4.3] (amendments January 2017)

Replace requirement [4.3.5] by:

4.3.5 Acceleration values

The accelerations considered in [4.3.3] and [4.3.4] are to be derived at the centre of gravity of the stack, considering:

- centre of gravity of each container as defined in Ch 4, Sec 6, [4.1.1]
- the value of GM and k_r as induced by the loading condition. When GM and k_r are not known, the values may be taken as defined in Ch 4, Sec 3, Tab 2 for the Full load condition.

The accelerations for upright and inclined conditions are to be derived according to Ch 4, Sec 3, [3] for the following load cases:

LC1 : Upright condition, maximizing longitudinal acceleration, as defined in Tab 5

LC2, LC3: Inclined condition, maximizing positive or negative transverse acceleration, as defined in Tab 6

LC4 : Inclined condition, maximizing positive or negative vertical acceleration, as defined in Tab 7 and Tab 8.

The wave parameter considered for the calculation of accelerations is depending on the additional class notation:

- for notation **LASHING**, the wave parameter is to be calculated considering the coefficients for strength assessment defined in Ch 4, Sec 3, Tab 1
- for notation **LASHING-WW**, the wave parameter is to be calculated considering the coefficients for worldwide environmental conditions defined in Tab A. In addition, the roll angle θ is to be multiplied by a factor H_{WW} / H

  where:

  H_{WW} : Wave parameter calculated for notation **LASHING-WW**

  H : Wave parameter calculated for the notation **LASHING**.

  The reference length L_{ref} used for H_{WW} and H is to be calculated with:

$$\alpha = \frac{4,6}{T_R^{\,2}}$$

$f_\alpha = 1,0$

- for notation **LASHING (restricted area)**, specific values of wave parameter are to be derived on the basis of direct seakeeping analyses, considering a specific wave scatter diagram related to the considered area. In addition, the roll angle θ is to be multiplied by a factor H_{RA} / H

  where:

  H_{RA} : Wave parameter calculated for notation **LASHING (restricted area)**

  H : Wave parameter calculated for notation **LASHING**.

Note 1: When the ship is equipped with a passive free-surface anti-roll tank, a roll reduction factor can be used according to [4.4], subject to special examination by the Society.

Ch 14, Sec 1 (amendments January 2017)

Insert the following Table A:

Table A : Wave parameter coefficients for the notation LASHING-WW

A_0	A_1	e_1	A_2	e_2	L_c
0,85	1,50	2,20	0,45	1,70	413

Ch 14, Sec 1 (amendments January 2017)

Replace existingTable 4 by:

Table 4 : Accelerations for additional service feature Equipped for carriage of containers

Acceleration	Upright condition	Inclined condition
a_X	1,4 n_{w1} a_{X1}	–
a_Y	–	1,4 n_{w2} a_{Y2}
a_Z	1,4 n_{w1} a_{Z1}	1,4 n_{w2} a_{Z2}

Note 1:

n_{w1} : Coefficient equal to:

- for notation **LASHING**:

  $v_{\omega 1} = 1,0$

- for notation **LASHING-WW**:

$$n_{w1} = 0,95 - \frac{LC_B}{3000}$$

- for notation **LASHING (restricted area)**, n_{w1} is defined on a case-by-case basis

n_{w2} : Coefficient equal to:

- for notation **LASHING**:

  $v_{\omega 2} = 1,0$

- for notation **LASHING-WW**:

$$n_{w2} = 0,8 + \left(\frac{27 - T_R}{50}\right)^2$$

- for notation **LASHING (restricted area)**, n_{w2} is defined on a case-by-case basis

T_R : Roll period, in s, as defined in NR467, Pt B, Ch 5, Sec 3, [2.4], not to be taken greater than 27s.

For ships assigned with additional service feature **Equipped for carriage of containers**, the accelerations for upright and inclined conditions are derived according to NR467, Pt B, Ch 5, Sec 3, [3.4] and defined in Ch 14, Sec 1, Tab 4. In inclined condition, (n_{w2} a_{Y2}) is to be taken not less than 0,35 g for container bays located on deck, and:

- on single island designs, aft of the forward bulkhead of the engine room and forward of 0,65 L
- on twin island designs, outside of the region between the two islands.

Ch 14, Sec 1, Table 7 and Table 8 (amendments January 2017)

Replace the foot of Table 7 and Table 8 by:

Note 1: Stack with centre of gravity located at centreline is considered to be on portside.

(1) SPLC is the specific load case for vertical acceleration as defined in Ch 4, Sec 3, [3.3.3] and with the transverse acceleration a_Y taken equal to 0.

Ch 14, Sec 1, [4.4] (amendments January 2017)

Replace requirement [4.4.1] by:

4.4.1 General

When the ship is equipped with an anti-roll tank (ART) or a stabilization system, a roll reduction factor f_{ART} may be taken into account to reduce the roll angle used in the calculation of the acceleration values (see [4.4.4]).

Ch 14, Sec 1, [4.4.3] (amendments January 2017)

Replace items c) and d) by:

c) Long term analysis

A linear spectral analyis is performed to derive the extreme long term roll angle (θ_{ART}) by combining the roll transfer function for each sea state of the scatter diagram and the corresponding probability of occurence of these sea states.

d) Determination of the roll reduction factor f_{ART}

The roll reduction factor f_{ART} is to be determined as follows:

$f_{ART} = \theta_{ART} / \theta$

where:

θ_{ART} : Extreme long term roll angle including the effect of an anti-roll tank

θ : Extreme roll angle as defined in Ch 4, Sec 3, [2.1.1].

Ch 14, Sec 1, [4.4] (amendments January 2017)

Add the following requirement [4.4.4]:

4.4.4 Acceleration values

The acceleration values considered in [41.1.1] are to be calculated with the extreme roll angle θ multiplied by the roll reduction factor f_{ART}.

Ch 14, Sec 1, [5.1]

Replace requirements [5.1.2] and [5.1.3] by the following [5.1.2], [5.1.3] and [5.1.4]:

5.1.2 The calculations are based on the following assumptions:

- loads due to ship motions (see Ch 14, Sec 1, [4.3]) are independently applied to each stack
- wind loads are applied to each stack, accounting for the number of containers exposed to wind (see Ch 14, Sec 1, [4.5])

5.1.3 The gaps between stacks are to be large enough to avoid contacts between container corners after deformation.

5.1.4 The wind loads are applied in the same direction as the transverse or longitudinal acceleration.

Ch 14, Sec 1, [5.2]

Replace requirement [5.2.1] by the following one:

5.2.1 General

For the purpose of the calculation of the lashing and securing devices, longitudinal, transverse and vertical forces are distributed on the container walls.

Ch 14, Sec 1, [5.2.2]

Replace the last paragraph of requirement [5.2.2] by the following one:

The longitudinal force is considered to be equaly subdivided on the four side longitudinal frames of the container.

Ch 14, Sec 1, [5.2.3]

Replace the last paragraph of requirement [5.2.3] by:

The transverse force is considered spread over the four container corners of each end transverse frames, with the wind forces $F_{W, wind, i}$ equally subdivided on the four corners of the exposed side and the inertial forces $F_{W, Y, i}$ equally subdivided only at the bottom as follows:

- for the top corners of the exposed side:
  $F_{Y, 2i} = 0,25\ F_{Y, wind, i}$
- for the bottom corners of the exposed side:
  $F_{Y, 2i-1} = 0,5\ F_{W, Y, i} + 0,25\ F_{Y, wind, i}$
- for the bottom corners of the non-exposed side:
  $F_{Y, 2i-1} = 0,5\ F_{W, Y, i}$

Ch 14, Sec 1, [5.2.4]

Replace the last paragraph of requirement [5.2.4] by:

The vertical force is considered spread over the four bottom container corners, with the vertical still water forces $F_{S, i}$ and inertial forces $F_{W, Z, i}$ equally distributed as follows:

- for the top corners on both sides:
  $F_{Z, 2i} = 0$
- for the bottom corner on left side:
  $F_{Z, 2i-1} = 0,25\ F_{S, i} + 0,25\ F_{W, Z, i} - 0,45\ H_i\ F_{W, Y, i} / (2B)$
- for the bottom corner on right side:
  $F_{Z, 2i-1} = 0,25\ F_{S, i} + 0,25\ F_{W, Z, i} + 0,45\ H_i\ F_{W, Y, i} / (2B)$

where:

H_i : Height, in m, of the container located at tier "i"

B : Breadth, in m, of the container

$F_{W, Y, i}$: Inertial force for inclined condition, defined in Ch 14, Sec 1, [4.3.4].

Ch 14, Sec 1, [5.4]

Replace requirement [5.4.2] by the following one:

5.4.2 The tension in each lashing device may be calculated imposing equality of displacements of the corner of the container to which the lashing device is secured and the lashing device elongation.

The additional elongation in the lashing device resulting from the vertical and horizontal gap between the twistlock and the corner of the container is to be considered.

When the lashing device is attached to a lashing bridge, the displacement of the lashing bridge in the transverse direction is to be considered. Typical values of the maximum displacement as defined in Ch 11, Sec 4, [8] are to be considered unless greater displacements are obtained from the lashing bridge assessment.

Ch 14, Sec 1

Replace existing Table 10 by the following one:

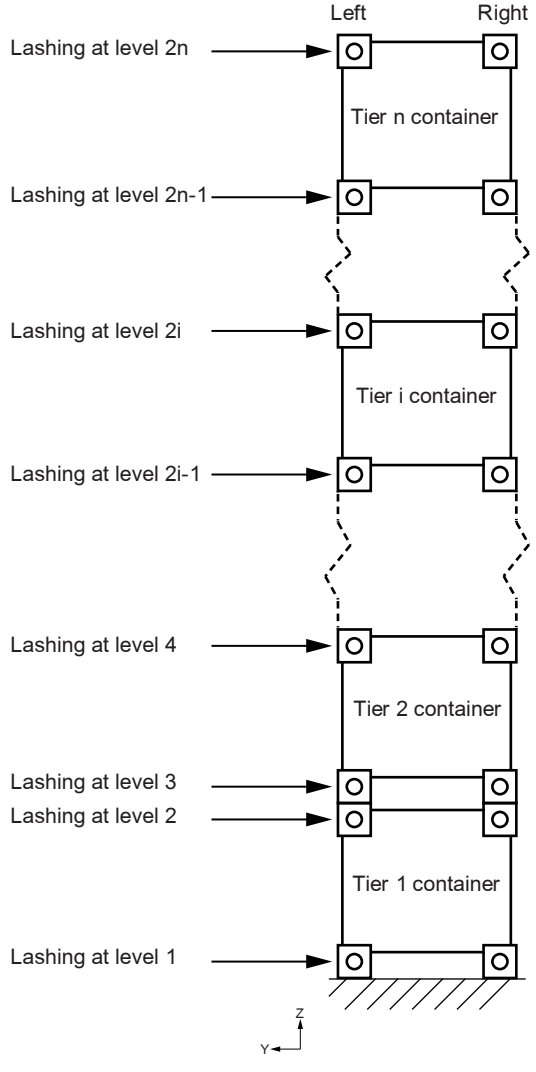
Table 10 : Stiffness of containers

Racking stiffness, in kN/mm	
Wall end	Door end
128 / H_0	32 / H_0
Note 1: H_0 : Height of the container, in feet	

Ch 14, Sec 1

Replace Figure 8 by the following one:

Figure 8: Container tiers and lashing levels in a stack



Ch 14, Sec 1, [6.1.2] (amendments January 2017)

Delete "n_{w2}" in the formula of "W_{MAX}" in item a) and item b).

Delete the definition of "n_{w2}" .

Ch 14, Sec 1, [6.2]

Replace requirements [6.2.1], [6.2.2] and [6.2.3] by the following ones:

6.2.1 For ISO 20, 30, 40 and 45 feet containers, the lashing arrangement is to be such that maximum loads on each container frame, in kN, are less than the values indicated in:

- Ch 14, Sec 1, Fig 9 for transverse and longitudinal racking
- Ch 14, Sec 1, Fig 10 for transverse and vertical compression (in this Figure, ISO containers are identified with reference to ISO 1496-1)
- Ch 14, Sec 1, Fig 11 for transverse and vertical tension.

6.2.2 For ISO open containers, the permissible racking load in longitudinal frames (less than 75 kN in general) is to be specified for the review.

6.2.3 For all other containers, the lashing arrangement is to be such that the maximum loads on each container frame, in kN, are less than:

a) the permissible loads specified on the Container Safety Certification plate (CSC plate) submitted by the designer, or

b) when these values are not provided, the following permissible loads:

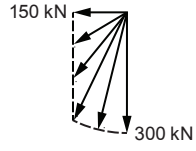
- for the vertical compression: $2{,}25\ m_c\ g$
- for the vertical traction: $0{,}50\ m_c\ g$

where m_c is the maximum container gross weight in tons.

Ch 14, Sec 1

Replace Figure 13 by the following one:

Figure 13: Resultant permissible load on container corners



Ch 14, Sec 1, [6.4.1] (amendments January 2017)

Replace "less than" by "not greater than" in the first paragraph.

Ch 14, Sec 1, [7.1]

Replace requirement [7.1.2] by:

7.1.2 An approved lashing software is to be fitted onboard any ship granted with the additional class notation **LASHING-WW** or **LASHING (restricted area)**.

Ch 14, Sec 1, [7.1] (amendments January 2017)

Replace requirement [7.1.3] by:

7.1.3 A lashing software, if installed onboard a ship, is to be approved and the additional class notation **LI-LASHING** is to be assigned.

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