

Common Structural Rules for Bulk Carriers and Oil Tankers

Technical Background for Corrigenda 1 to 01 January 2015 version

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PART 1

GENERAL HULL REQUIREMENTS

Chapter 3

Pt 1, Ch 3, Sec 5, [3.1.1]

The amendment is to correct an editorial error.

This modification is as per KC ID 1208.

Pt 1, Ch 3, Sec 6, [2.2.1]

To correct in order to clarify reinforcement at knuckles.

Pt 1, Ch 3, Sec 6, [3.1.2], Figure 2

The amendment is to correct Figure 2 regarding stiffener on attached plating with an angle less than 50 deg.

This modification is as per KC ID 1204.

Pt 1, Ch 3, Sec 6, [3.2.5]

These requirements are based on CSR OT, July 2010 (based on DNV Rules (January 2013), Pt 3, Ch 1, Sec 3, C200). The amendment is in line with DNV Rules.

This modification is as per KC ID 1144.

Pt 1, Ch 3, Sec 6, Figure 8 (e)

Typographical error. According to Pt 1, Ch 3, Sec 6, [5.2.2], there is no t_{wt} , but t_w defining net web thickness of primary support member.

Pt 1, Ch 3, Sec 6, Figure 9

Unit of A_w is cm^2 . And unit of t_w , d_w , d_{wc} are mm.

Therefore, unit conversion is necessary.

There is no definition of t_w ; it should be t_{w1} .

Typographical error. According to Pt 1, Ch 3, Sec 6, Figure 9, t_{ws} , not t_w is for the primary support member web stiffener/backing bracket.

Pt 1, Ch 3, Sec 6, [5.1.3]

The amendment is to correct Figure 9 regarding primary supporting member web stiffener details. The definition of t_f for bulb profile is added.

This modification is as per KC ID 1206.

Pt 1, Ch 3, Sec 6, [5.2.3]

The typo is corrected that τ_{wc} should be τ_w .

Pt 1, Ch 3, Sec 6, [8.1.1]

The amendment is to clarify that “longitudinal bulkheads” do not belong to the double side structure.

This modification is as per KC ID 1212.

Pt 1, Ch 3, Sec 7, [1.4.8]

The requirement is to be amended so as to be in line with the original requirement in CSR-OT.

Pt 1, Ch 3, Sec 7, Table 5

The requirement of y and z coordinate is to be corrected so as to be in line, see Figure 23.

Chapter 4

Pt 1, Ch 4, Sec 6, [1.2.2]

The amendment is about clarifying the static pressure due to liquid in ballast holds for harbour/sheltered water operations.

This modification is as per CSR KC ID 1150.

Pt 1, Ch 4, Sec 6, [5.3.1]

In order to clarify how to use the unit load on an internal deck, corresponding interpretation is added that the unit load is applied to a direct analysis for stiffeners or primary supporting members.

This modification is as per CSR KC ID 1085.

Pt 1, Ch 4, Sec 8, [4.2.6] Table 12, 13, 14

The typos are corrected that [$>$], [$<$] should be [\geq], [\leq] respectively.

Chapter 5

Pt 1, Ch 5, Sec 1, [1.2.9]

To amend “lightening holes” with “drain holes” as “lightening holes” are holes of unspecified size, and item b) of 1.2.9 is for small openings.

This modification is as per KC ID 1246.

Pt 1, Ch 5, Sec 3, [3.5.1]

The amendment is to clarify effective net plating thickness with reference of rule.

This modification is as per KC ID 1167.

Pt 1, Ch 5, App1, [1.2.1]

The typo is corrected that $q_D(S)$ should be $q_D(s)$.

Pt 1, Ch 5, App1, [1.2.4]

The typo is corrected that Figure 3 should be Figure 2.

Pt 1, Ch 5, App 1, [1.4.2] and [2.1.2]

The typos are corrected that z_G should be z_n .

This modification is relative to CSR KC ID 1141.

Pt 1, Ch 5, App2, [2.3.1]

The text is moved in order to avoid misunderstanding.

Chapter 6

Pt 1, Ch 6, Sec 4, [2.2.2] and [2.2.3]

There are three requirements in Pt 1, Ch 6, Sec 4, [2.2.2], they are renumbered by a), b) and c) respectively so that they can be referenced to clearly.

The requirements in Pt 1, Ch 6, Sec 4, [2.2.2], which is for bilge plate thickness within 0.4 L amidships, are applicable according to Pt 1, Ch 6, Sec 4, [2.2.3] which is for bilge plate thickness outside 0.4 L amidships. However, it is not explained clearly how the requirements in [2.2.2] are applied to that outside 0.4 L amidships. The amendment is to clarify the rule application that the requirements in Pt 1, Ch 6, Sec 4, [2.2.2] can be applied to the bilge plate within 0.4 L amidships but also that outside 0.4 L amidships.

This modification is as per CSR KC ID 1147 and 1292.

Pt 1, Ch 6, Sec 4, [2.2.2] and [2.2.3]

The amendment is to clarify the rule application that bilge plating which has no longitudinal stiffening members is not applicable to this requirement. In this case, bilge keel is not considered as longitudinal stiffening members.

Chapter 7

Pt 1, Ch 7, Sec 2, [4.3.3]

The typo is corrected that [4.4.7] should be [4.4.6].

Pt 1, Ch 7, Sec 2, [5.2.7], Table 11

The amendment is to correct an editorial error in the table.

This modification is as per KC ID 1267.

Chapter 8

Pt 1, Ch 8, Sec 3, [1.2.1]

The amendment is a rule clarification that the net thickness is adopted.
This modification is as per CSR KC ID 1154.

Pt 1, Ch 8, Sec 3, [2.1.2]

The amendment is to clarify that total vertical shear force is to be considered for each design load combinations.

This modification is as per KC ID 1170.

Pt 1, Ch 8, Sec 4, [2.2.2] Figure 5

The typo is corrected that [UP-B] should be [UP-A].

Pt 1, Ch 8, Sec 4, [2.2.2] Figure 7

FE buckling assessment for hatch coaming is required for double hull bulk carriers as it's for single hull bulk carriers.

This modification is as per CSR KC ID 1075.

Pt 1, Ch 8, Sec 5, [2.2.2] Table 3

The typo is corrected that [$3^{0.5}$] should be [$\sqrt{3}$].

Pt 1, Ch 8, Sec 5, Table 7

Typographical error. The parameter, b_f , is to be amended with, b_{fu} , as this is defined in the figure and used in the formula.

Chapter 9**Pt 1, Ch 9, Sec 2, [2.1.1] Table 16**

The typo is corrected that [3.1] should be [3.2].

Pt 1, Ch 9, Sec 3, [3.1.3]

Correction factor $fc=0.95$ in Pt 1 Ch 9, Sec 1, [5.1.2] applies to all detail types not just welded joints. This requirement is in line with Pt 1, Ch 9, Sec 3, [3.1.2] where fc is included in the calculation of fatigue stress range for welded joints.

This modification is as per CSR KC ID 1050.

Pt 1, Ch 9, Sec 3, [4.1.4]

The typo is corrected parameter in formula for S-N curve that $[2\delta]$ should be $[2 \cdot \log(\delta)]$.

Pt 1, Ch 9, Sec 4, [4.2.4]

Typo has been corrected.

This modification is as per CSR KC ID 1060.

Pt 1, Ch 9, Sec 4, [4.2.6]

The typo is corrected that I_{Fwd} should be $I_{Fwd-n50}$.

The Figure 4 is amended so as to clarify that the relative deflection in one direction is to be considered (i.e. the direction perpendicular to the attached plate before the deformed state).

This modification is as per CSR KC ID 1092.

Pt 1, Ch 9, Sec 4, [5.2.6] Table 4

ID1, ID2 and ID25 illustrated in Table 4 should not include the thickness of web plate of PSM and a corrigendum is made to clarify that.

This modification is as per CSR KC ID 1148.

Pt 1, Ch 9, Sec 5, [3.3.2]

Editorial correction.

Pt 1, Ch 9, Sec 6, [2.2.3] Figure 2

t_{w-n50} , web net thickness, is added to Figure 2 based on Rec. Practice "DNV-RP-C206" since the definition is specified in the text of [2.2.3] but not appear in the current Figure 2.

Pt 1, Ch 9, Sec 6, [6.1] Table 10, 12

Welding requirements in Table 10 applies to connections of transverse bulkhead with lower stool only in ballast hold of bulk carriers.

This modification is as per CSR KC ID 851 and 1356.

Pt 1, Ch 9, Sec 6, [6.1.2]

The typo is corrected that M should be L.

Chapter 10

Pt 1, Ch 10, Sec 1, [3.3.6]

The requirement in Pt 1, Ch 10, Sec 1, [3.3.6 d)] is the same as [4.1.2]. However, [3.3.6 d)] is applied to the bow impact area only, and [4.1.2] is applied to not only the bow impact area but also other area as an additional scantling requirement. So the requirement of [3.3.6 d)] is deleted to eliminate the duplication.

This modification is as per CSR KC ID 1095.

Pt 1, Ch 10, Sec 1, [3.3.6]

The typo is corrected that σ_{cr} should be σ_{crb} .

Pt 1, Ch 10, Sec 4, SYMBOLS

The typo is corrected that [2.2.2] should be [2.1.1].

Chapter 12

Pt 1, Ch 12, Sec 3, [2.3.4]

The typo is corrected that $[f_2]$ should be $[f_3]$.

PART 2 SHIP TYPES

CHAPTER 1

BULK CARRIERS

Pt 2, Ch 1, Sec 3, [1.2.4]

The typo is corrected that [1.1.2] should be [1.1.3].

Pt 2, Ch 1, Sec 3, [4.1.3]

Editorial, t_N should be t as there is no t_N defined in [4.1.2].

Pt 2, Ch 1, Sec 3, [4.1.4]

The typo is corrected that ρ_c should be ρ_{st} .

Pt 2, Ch 1, Sec 5, [5.4.6]

The amendment is to correct reference of maximum plate utilization factor and to clarify the buckling strength method for the web panels in way of openings of the primary supporting members.

This modification is as per KC ID 1190.

Pt 2, Ch 1, Sec 5, [5.5.1]

Editorial correction.

Pt 2, Ch 1, Sec 5, [6.2.4]

This chapter is for bulk carrier which does not carry liquid cargos. The intention is about ballast water, not liquid cargos.

This modification is as per CSR KC ID 1097.

CHAPTER 2

OIL TANKERS

Pt 2, Ch 2, Sec 3, [2.2.2], [2.2.4]

Table 1 of Pt 2, Ch 2, Sec 3 do not define load-set applicable to vertically corrugated bulkhead, but for primary support members.

Editorial corrections:

- Definition of l_{cg} is corrected to l_o as this sentence defines l_o .
- Definition of C_1 is corrected to state “not less than” as originally intended.

Pt 2, Ch 2, Sec 3, [2.2.4] Figure 4

To amend in order to clarify how to measure the bib (breadth of cargo tank at the inner bottom level between hopper tanks, or between the hopper tank and centreline lower stool, in m).