RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part Q Steel Barges

2013 AMENDMENT NO.1

Rule No.38 30th May 2013

Resolved by Technical Committee on 4th February 2013

Approved by Board of Directors on 4th March 2013

Rule No.38 30th May 2013
AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Rules for the survey and construction of steel ships" has been partly amended as follows:

Part Q STEEL BARGES

Chapter 21 PONTOON BARGES

Paragraphs 21.2.2 to 21.2.8 have been renumbered to 21.2.3 to 21.2.9 respectively and paragraphs 21.2.2, 21.2.10 and 21.2.11 have been added as follows.

21.2.2 Section Modulus of Hull

1 The section modulus of the hull for the midship part is not to be less than obtained from the following formulae, whichever is greater:

Z_1: $0.876K_1L^2B(C_b+0.7)(cm^3)$

Z_2: $6.63C\left[1.18K_2L^2BC_b(1+0.039L/B)+Ms\right](cm^3)$

K_1: As obtained from the following formulae:

$L \geq 90m$: $10.75-\left(\frac{300-L}{100}\right)^{3/2}$

$L < 90m$: $0.03L + 5$

C_b: Block coefficient, the ratio of the volume of the moulded displacement corresponding to the load line to *LBd*.

K_2: $0.0028L + 0.46$

C: As given in **Table Q12.1**.

Ms: Longitudinal bending moment in still water specified in **-2** (*kN-m*).

2 The longitudinal bending moments in still water, *Ms*, are taken the maximum sagging and hogging moments calculated for all of designed loaded and ballast conditions by the method deemed appropriate by the Society. Furthermore, in a pusher barge, the effect of the joint part is to be considered to the longitudinal bending moment.

3 For barges less than 90 *metres* in length the requirement of Z_2 in **-1** above may be dispensed with. However, longitudinal bending moment in still water are to be calculated for barges designed for special loading or ballasting.

21.2.~~2~~3 Arrangement

Bottom transverses, side transverses and deck transverses are to be provided at an interval of less than about 3.5 *metres* in one plane.

21.2.~~3~~4 Bottom Longitudinals

The section modulus of bottom longitudinals is not to be less than obtained from the following formula:

$9.5SDl^2$ (cm^3)

S : Spacing of longitudinals (m).

l : Span measured between the adjacent supports of longitudinals (m).

21.2.~~4~~5 Bottom Transverses

The scantlings of bottom transverses are not to be less than obtained from the following formulae:

Section modulus:$7.4SDl^2$ (cm^3)

Thickness of web:$10d_0 + 2.5$ (mm)

S : Spacing of transverses (m).

l : Span measured between the adjacent supports of transverses (m).

d_0 : Depth of web (m).

21.2.~~5~~6 Side Longitudinals

The section modulus of side longitudinals is not to be less than obtained from the following formula.

$9.5Shl^2$ (cm^3)

S : Spacing of longitudinals (m).

l : Span measured between the adjacent supports of longitudinals (m).

h : Vertical distance from the longitudinals to a point of D above the top of keel, but to be taken as $0.3\sqrt{L}$ (m), where the distance is less than $0.3\sqrt{L}$ (m).

21.2.~~6~~7 Side Transverses

The scantlings of side transverses are not to be less than obtained from the following formulae:

Section modulus:$8Shl^2$ (cm^3)

Thickness of web:$10d_0 + 2.5$(mm)

S : Spacing of transverses (m).

l : Span measured between the adjacent supports of transverses (m).

h : Vertical distance from the centre of l to a point of D above the top of keel (m), but to be taken as $0.3\sqrt{L}$ (m), where the distance is less than $0.3\sqrt{L}$ (m).

d_0 : Depth of web (m).

21.2.~~7~~8 Longitudinal Beams

1 The section modulus of longitudinal beams for the midship part is not to be less than obtained from the following formula:

~~$1.14Shl^2$ (cm^3)~~

$0.77Shl^2$ (cm^3)

S : Spacing of longitudinal beams (m).

l : Span measured between the adjacent supports of longitudinal beams (m).

h : Deck load specified in **14.1** (kN/m^2).

2 Beyond the midship part, the section modulus of longitudinal beams may be gradually reduced, but the section modulus is not to be less than obtained from the following formula:

$0.43Shl^2$ (cm^3)

S, h and l :As specified in **-1**.

21.2.~~8~~9 Deck Transverses

The scantlings of deck transverses are not to be less than obtained from the following formulae:

Section modulus:$0.484Shl^2$ (cm^3)

Thickness of web:$10d_0 + 2.5$ (*mm*)

S : Spacing of deck transverses (*m*).

l : Span measured between the adjacent supports of deck transverses (*m*).

h : Deck load specified in **14.1** (kN/m^2).

d_0 : Depth of web (*m*).

21.2.10 Construction of Watertight Bulkheads

Construction of watertight bulkheads is to be in accordance with the requirements in **10.2**. However, in cases where the bulkheads are arranged between void spaces, the increase in plate thickness specified in **10.2.2-1** may be 0.5*mm*.

21.2.11 Shell Plating at the Strengthened Bottom Forward

The thickness of the shell plating at the strengthened bottom forward is to be as required in the following **(1)** to **(3)**:

(1) The thickness of shell plating of the flat bow bottoms forward of 0.15*L* from the fore end to the lower turn of the rake is not to be less than that obtained from the following formula:

$2.15S\sqrt{L} + 2.5(mm)$

S : Spacing of frames, girders or longitudinal shell stiffeners, whichever is the smallest (*m*).

(2) The thickness of shell plating of the rake forward of 0.15*L* from the fore end is not to be less than that obtained from the following formula:

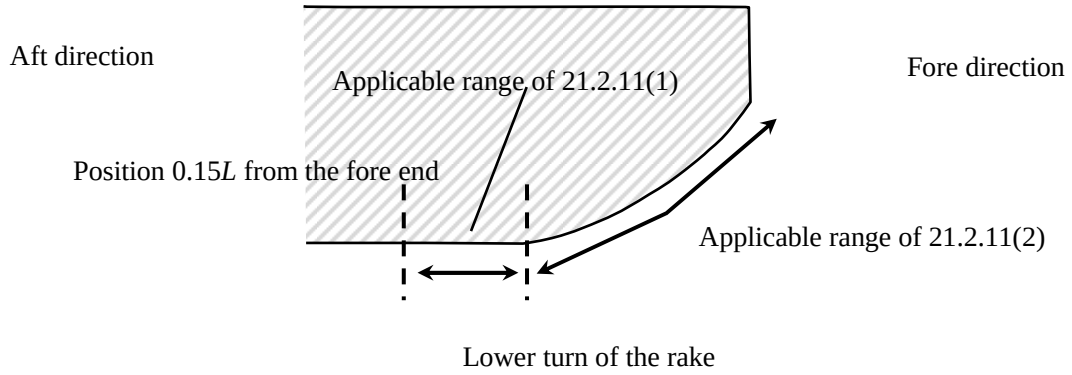
$1.63S\sqrt{L} + 2.5(mm)$

S : As specified in **(1)**

(3) Notwithstanding the requirements of the preceding **(1)** and **(2)**, barges having ship-shape bow forms are to be in accordance with **13.4.2**.

Fig.Q21.1 has been added as follows.

Fig. Q21.1 Shell Plating at the Strengthened Bottom Forward



EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 30 November 2013.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships for which the date of contract for construction is before the effective date.

3. Notwithstanding the provision of preceding **2.**, the amendments to the Rules may apply to ships for which the application is submitted to the Society before the effective date upon request by the owner.