Amendments of Guidance

(External review)

Pt. 3 Hull Structures

2019. 11.

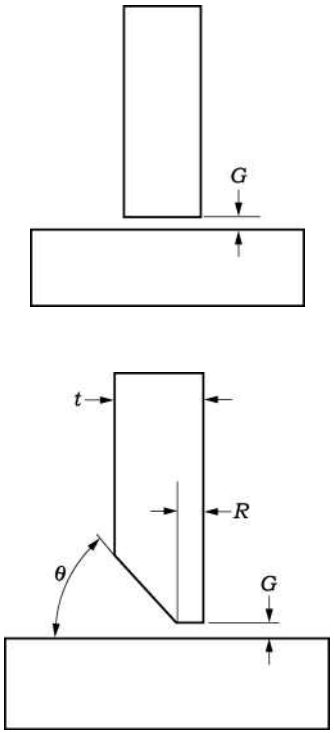
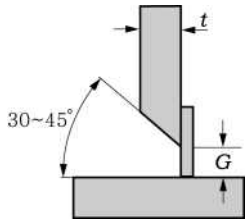
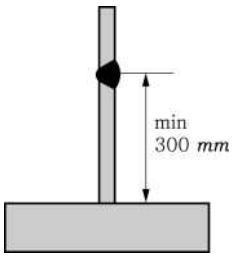
Hull Rule Development Team

Present	Amendment	Note

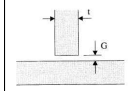
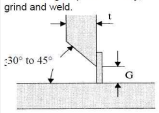
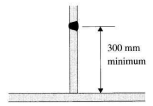
Annex 3-4 Guidance for the Hull Construction Monitoring Procedure

1. ~ 6. <omit>

Table 5 Fillet weld fit-up repair

Detail	Repair Standard	Note
	2 mm $<$ G $\leq$ 5 mm : length of weld to Rule leg by + $(G-2)$	~~For cruciform joints :~~ ~~1) 3 mm $<$ G $\leq$ 6 mm~~ ~~The weld should be full penetration and subject to additional ultrasonic NDE using both 45° and 70° probes, to the satisfaction of the surveyor.~~ ~~2) G $>$ 6 mm~~ ~~The joint is to be adjusted until compliance is reached or an insert plate is to be fitted to the satisfaction of the surveyor.~~
	5 mm $<$ G $\leq$ 16 mm : champer to 30°- 45°, build up with welding on one side, with or without backing bar, remove backing strip if used, back gouge and seal with weld. 	
	G $\leq$ 16 mm or G $>$ $1.5t$ Insert plate of min width 300 mm to be used 	

- IACS Rec. 47 참조
TABLE 9.6 - Typical Fillet Weld Plate Edge Preparation Remedial

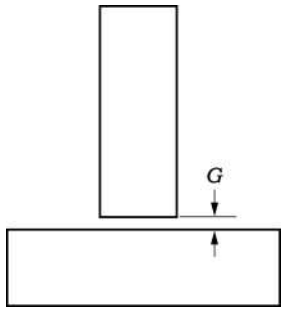
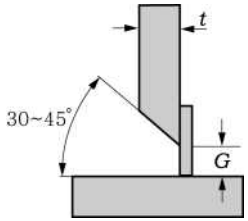
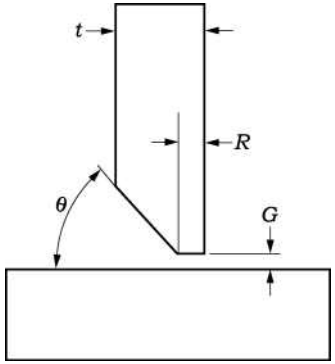
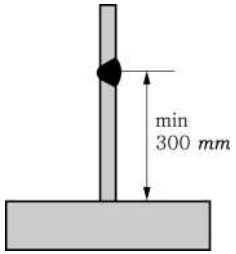
Detail	Remedial standard	Remarks
e Fillet 	3 mm < G ≤ 5 mm – leg length increased to Rule leg + (G-2)	
	5 mm < G ≤ 16 mm or G ≤ 1.5t - chamfer by 30° to 45°, build up with welding, on one side, with backing strip if necessary, grind and weld. 	
	G > 16 mm or G > 1.5t use insert plate of minimum width 300 mm 	

Present	Amendment	Note

Annex 3-4 Guidance for the Hull Construction Monitoring Procedure

1. ~ 6. <same as current>

Table 5 Fillet weld fit-up repair

Detail	Repair Standard	Note
	2 mm $<$ G $\leq$ 5 mm : length of weld to Rule leg by + $(G-2)$	-
	5 mm $<$ G $\leq$ 16 mm : champer to 30°- 45°, build up with welding on one side, with or without backing bar, remove backing strip if used, back gouge and seal with weld. 	
	G $\leq$ 16 mm or G $>$ $1.5t$ Insert plate of min width 300 mm to be used 	

- refer IACS Rec. 47

Amendments of the Guidance

Pt. 3 Hull Structures

(External review)

2019. 11.

Hull Rule Development Team

Present	Amendment	Note
CHAPTER 15 DEEP TANKS <Guidance>	**CHAPTER 15 DEEP TANKS <Guidance>**	
Section 1 <omit>	**Section 1 <same as current>**	
Section 2 Bulkheads of Deep Tank	**Section 2 Bulkheads of Deep Tank**	
202. Bulkhead plates 【See Rule】	**202. Bulkhead plates** 【See Rule】	
1. ~ **3.** <omit>	**1.** ~ **3.** <same as current>	
4. For the thickness of deep tank bulkhead plating in Type A independent tanks, the following value of C_2 and h is to be used for the formula specified in **202.** in the Rules C_2 = 3.6 h = water head, equal to internal pressure in **Pt 7, Ch 5, 403. 2. is to be calculated by dividing 10.**	**4.** For the thickness of deep tank bulkhead plating in Type A independent tanks, the following value of C_2 and h is to be used for the formula specified in **202.** in the Rules C_2 = 3.6 h = water head(m), equal to internal pressure in **Pt 7, Ch 5, 413. 2.** is to be calculated by multiplying 100.	
203. ~ 209. <omit>	**203. ~ 209. <same as current>**	

Amendments of Guidance

(External review)

Pt. 7 Ships of Special Services

2019. 11.

Hull Rule Development Team

Present	Amendment	Note
Annex 7-2 Guidance for the Container Securing Arrangements	**Annex 7-2 Guidance for the Container Securing Arrangements**	
1. ~ 6. <omit>	**1. ~ 6. <same as current>**	
7. Container support structure (2019)	**7. Container support structure (2019)**	
(1) <omit>	(1) <same as current>	
(2) Structural strength evaluation (A) Structure modelling (a) Model extent <omit>	(2) Structural strength evaluation (A) Structure modelling (a) Model extent <same as current>	
(b) FE model (i) <omit> (ii) In general, plate elements should be used and mesh size of the lashing bridge should be approximately $20t \times 20t$ or $150\,\mathrm{mm} \times 150\,\mathrm{mm}$ which is smaller(t is the thinnest plate thickness in mm). (iii) The element size of fine mesh area should not be greater than $50 \times 50\,\mathrm{mm}$ and should be sufficiently small to be able to represent the shape of the structure and to limit stress concentration. In general, the members which have a stress variation in the depth direction should be meshed into 3 sub depths. The minimum required element size of fine mesh area need not be less than the thickness of the plate.	(b) FE model (i) <same as current> (ii) In general, plate elements should be used. (iii) The element size should be sufficiently small to be able to represent the shape of the structure and to limit stress concentration. In general, the members which have a stress variation in the depth direction should be meshed into 3 sub depths. The minimum required element size of fine mesh area need not be less than the thickness of the plate.	
(B) ~ (F) <omit>	(B) ~ (F) <same as current>	
(3) <omit>	(3) <same as current>	
8.~ 6. <omit>	**8.~ 6. <same as current>**	
Appendix 1 ~ 3 <omit>	**Appendix 1 ~ 3 <same as current>**	

Amendments of the Guidance for Approval of Manufacturing Process and Type Approval, Etc.

(External review)

2019. 11.

Hull Rule Development Team

Present	Amendment	Note

CHAPTER 3 TYPE APPROVAL

Section 1 ~ General 24 <omit>

Section 25 Securing Devices

2501. Application <omit>

2502. Type tests

1. <omit>

2. The Surveyor is to be satisfied that the design and materials of the fitting are in accordance with the approved plans. The mode of load application is to represent as closely as possible the in-service operational modes. Jigs are to be employed where necessary in order that satisfactory simulation is obtained. For guidance purposes, test modes which are required for the more commonly used fittings are shown in **Table 3.25.2.**

3. ~ 5. <omit>

Table 3.25.2 Test Loads and Test Modes *(2019)*

Item No	Description	Required test modes		Recommended minimal in kN		
				SWL	Proof load	Breaking load
1~6	<omit>	<omit>		<omit>	<omit>	<omit>
7	Twistlock (single)		Shear load	200	300	400
			Tensile load	250	375	500
			Compression load (bottom)	1100	1300	1500
8	<omit>	<omit>		<omit>	<omit>	<omit>
9	Midlock		Shear load	200	300	400
			Tensile load	250	375	500
			Compression load (bottom)	1100	1300	1500

Present	Amendment	Note

Table 3.25.2 Test Loads and Test Modes *(2019)*

10~12	<omit>	<omit>	<omit>	<omit>	<omit>
13	Pedestal socket	 Pull-out load	250	375	500
		 Tangential load	200	300	400
		 Compression load	1100	1300	1500
14~18	<omit>	<omit>	<omit>	<omit>	<omit>

(Notes)
1. ~ 6. <omit>

Present	Amendment	Note

CHAPTER 3 TYPE APPROVAL

Section 1 ~ General 24 <omit>

Section 25 Securing Devices

2501. Application <omit>

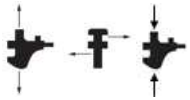
2502. Type tests

1. <omit>

2. The Surveyor is to be satisfied that the design and materials of the fitting are in accordance with the approved plans. The mode of load application is to represent as closely as possible the in-service operational modes. Jigs are to be employed where necessary in order that satisfactory simulation is obtained. For guidance purposes, test modes which are required for the more commonly used fittings are shown in **Table 3.25.2.**

3. ~ 5. <omit>

Table 3.25.2 Test Loads and Test Modes ***(2019)***

Item No	Description	Required test modes		Recommended minimal in kN		
				SWL	Proof load	Breaking load
1~6	<same as current>	<same as current>		<same as current>		
7	Twistlock (single)		Shear load	200	300	400
			Tensile load	250	375	500
			Compression load (bottom)	1200	1400	1600
8	<same as current>	<same as current>		<same as current>		
9	Midlock		Shear load	200	300	400
			Tensile load	250	375	500
			Compression load (bottom)	1200	1400	1600

Present	Amendment	Note

Table 3.25.2 Test Loads and Test Modes *(2019)*

10~12	<same as current>	<same as current>	<same as current>		
13	Pedestal socket	 Pull-out load	250	375	500
		 Tangential load	200	300	400
		 Compression load	1200	1400	1600
14~18	<same as current>	<same as current>	<same as current>		
(Notes) 1. ~ 6. <same as current>					