# RULES FOR CLASSIFICATION(STEEL SHIPS)

(Part 2 Materials and Welding)

2019.07.



### Machinery Rule Development Team

### - Main Amendments -

(1) Enter into force on 1 July 2020 (the date of application for certification of material & welding or the contract date for ship construction)

• To reflect Request for Establishment/Revision of Classification Technical Rules

Present	Amendment	reason
CHAPTER 1 MATERIALS Section 1 ~ Section 2 <omitted> Section 3 Rolled Steels</omitted>	CHAPTER 1 MATERIALS Section 1 ~ Section 2 <same as="" present="" rules="" the=""> Section 3 Rolled Steels</same>	* Request for Establishment/Revision of
<ul> <li>301. Rolled steels for hull structural</li> <li>1. ~ 8. ⟨Omitted⟩</li> <li>9. Quality and repair of defects (2018)</li> <li>(1) ⟨Omitted⟩</li> <li>(2) Repair for surface defects <ul> <li>(A) Grinding repair</li> <li>The surface defects may be removed by local grinding, an be as follows:</li> <li>(a) ~ (d) ⟨Omitted⟩</li> <li>(e) Complete elimination of the defects may be verified by magnetic particle or dye penetrant test procedure at th Surveyor's discretion.</li> <li>(f) ⟨Omitted⟩</li> <li>(B) ~ (D) ⟨Omitted⟩</li> </ul> </li> <li>10. ~ 13. ⟨Omitted⟩</li> </ul>	<ul> <li>301. Rolled steels for hull structural</li> <li>1. ~ 8. (Same as the present Rules)</li> <li>9. Quality and repair of defects (2018)</li> <li>(1) (Same as the present Rules)</li> <li>(2) Repair for surface defects <ul> <li>(A) Grinding repair</li> <li>The surface defects may be removed by local grinding, and be as follows:</li> <li>(a) ~ (d) (Same as the present Rules)</li> <li>(e) Complete elimination of the defects may be performed by a magnetic particle or dye penetrant test procedure at the Manufacturer's discretion.</li> <li>(f) (Same as the present Rules)</li> <li>(B) ~ (D) (Same as the present Rules)</li> </ul> </li> <li>(3) (Same as the present Rules)</li> <li>10. ~ 13. (Same as the present Rules)</li> </ul>	Classification Technical Rules(MET4800-78-2019) is reflected. * In line with IACS UR W11

Present	Amendment	reason
302. ~ 304. ⟨Omitted⟩	302. $\sim$ 304. <same as="" present="" rules="" the=""></same>	
305. Rolled stainless steels	305. Rolled stainless steels	
<ul> <li>1. ~ 3. (Omitted)</li> <li>4. Chemical composition The chemical composition of steels is to comply with the requirements given in Table 2.1.19.</li> </ul>	<ul> <li>1. ~ 3. (Same as the present Rules)</li> <li>4. Chemical composition The chemical composition of steels is to comply with the requirements given in Table 2.1.19.</li> </ul>	* Request for Establishment/Revision of Classification Technical Rules(MET4800-78-2019) is reflected.
Table 2.1.19 Grades and Chemical Composition of Stainless Steels	Table 2.1.19 Grades and Chemical Composition of Stainless Steels	* Ni chomical composition
Grade Chemical composition(%)	Grade Chemical composition(%)	* Ni chemical composition
Grade       C       Si       Mn       P       S       Ni       Cr       Mo       N       Others         (Omitted)       (Omitted)       (Omitted)       12.00~       (Omitted)       (Omitted)         316L       (Omitted)       15.00       (Omitted)       (Omitted)       (Omitted)         (Omitted)       IS.00       (Omitted)       (Omitted)       (Omitted)       (Omitted)         5. ~ 10. (Omitted)       (Omitted)       (Omitted)       (Omitted)       (Omitted)       (Omitted)         306. ~ 311. (Omitted)       (Omitted)       (Omitted)       (Omitted)       (Omitted)       (Omitted)	Grade $C$ $Si$ $Mn$ $P$ $S$ $Ni$ $Cr$ $Mo$ $N$ Others(Same as the present Rules)(Same as the present Rules)(Same as the present Rules)(Same as the present Rules)(Same as the present Rules)(Same as the present Rules)(Same as the present Rules) $S. ~ 10.$ (Same as the present Rules)(Same as the present Rules)(Same as the present Rules) $S. ~ 10.$ (Same as the present Rules)(Same as the present Rules) $S. ~ 311.$ (Same as the present Rules)	range of RSTS 316L is higher than other Societies and International standards/Codes. Adjustment is necessary.

Present	Amendment	reason
Section 4 Steel Tubes and Pipes	Section 4 Steel Tubes and Pipes	
<ul> <li>401. ~ 402. ⟨Omitted⟩</li> <li>403. Stainless steel pipes</li> <li>1. ~ 3. ⟨Omitted⟩</li> <li>4. Chemical composition</li> <li>The chemical composition of stainless steel pipes is to comply with the requirements given in Table 2.1.60.</li> </ul>	<ul> <li>401. ~ 402. ⟨Same as the present Rules⟩</li> <li>403. Stainless steel pipes</li> <li>1. ~ 3. ⟨Same as the present Rules⟩</li> <li>4. Chemical composition</li> <li>The chemical composition of stainless steel pipes is to comply with the requirements given in Table 2.1.60.</li> </ul>	<ul> <li>* Request for Establishment/Revision of Classification Technical Rules(MET4800-78-2019) is reflected.</li> <li>* Ni chemical composition</li> </ul>
Table 2.1.60 Grades and Chemical Composition	Table 2.1.60 Grades and Chemical Composition	range of RSTS 316LTP is higher than other Societies
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	and International standards/Codes.
$\begin{array}{ c c c c c }\hline & & & & & & & & & & & & & & & & & & &$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Adjustment is necessary.
5. ~ 11. 〈Omitted〉 404. ~ 405. 〈Omitted〉	Rules>     Rules>       5. ~ 11. <same as="" present="" rules="" the="">       404. ~ 405. <same as="" present="" rules="" the=""></same></same>	
Section 5 $\sim$ Section 8 <omitted></omitted>	Section 5 $\sim$ Section 8 <same as="" present="" rules="" the=""></same>	

Prese	nt		Amendment		reason
Chapter 9.W		Cha	pter 2 WELDI	NG	
Chapter 2 WELDING		Section 1 $\sim$ S	ection 4 <same as="" t<="" td=""><td>he present Rules&gt;</td><td></td></same>	he present Rules>	
Section 5 Welders and	Welder Performance	Section 5 We Qualif	elders and Welder ication Scheme (2	Performance 2018)	
Qualification Sci	neme (2018)	501. <same as="" p<="" td="" the=""><td>resent Rules&gt;</td><td></td><td></td></same>	resent Rules>		
501. <omitted></omitted>		502. Grades, and rang	e of qualification		
502. Grades, and range of qualific	ation	$1. \sim 5.$ (Same as the	present Rules>		
1. ~ 5. (Omitted)		6. Thickness and outer	diameter of base met	al	
6. Thickness and outer diameter of (1) The welder qualification carrie	<b>base metal</b> ed out on a plate or pipe test	(1) The welder qualification carried out on a plate or pipe test assembly of thickness T is valid for the thickness range given in		* Fillet weld of pipe follows	
Table 2.2.22-1. The qualified th	ickness range for tack welding is	3mm and over.(20	19)	lige for tack welding is	the thickness range of IACS
3mm and over.(2019)		Table 2.2.22-1 Qualified	thickness range for weld	ler qualification	UR W32. However, IACS
Table 2.2.22-1 Qualified thickness rang	e for welder qualification	Credes	Thickness of test	Qualified thickness	UR W32 deal with only
Thickness of test assembly, T(mm)	Qualified thickness range, t(mm)	Grades	assembly, T(mm)	range, t(mm) T < t < 2T	shipyard request to amend
T < 3	$T \le t \le 2T$	Butt/fillet weld of	$3 < T \langle 12$	3 < t < 2T	9606-1 the thickness range
$3 \le T \lt 12$	$3 \le t \le 2T$	Butt weld of pipe	$\frac{12}{12} < T$	3 < t	of pipe fillet weld is
12 ≤ T	$3 \le t$	Fillet weld of pipe	<u>T &lt; 3</u>	$\frac{T \le t \le \text{Larger}(2T)}{\text{or } 3\text{mm}}$	amended. * Request for
		<u>rmet weid of pipe</u>	$3 \le T$	$3 \le t$	Establishment/Revision of
(2) 〈Omitted〉 7. 〈Omitted〉 503. ~ 504. 〈Omitted〉		<ul> <li>(2) <same as="" of="" property="" se<="" second="" td="" the=""><td>esent Rules&gt; nt Rules&gt; s the present Rules&gt;</td><td><u> </u></td><td>Classification Technical Rules(MET4800-78-2019) is reflected.</td></same></li></ul>	esent Rules> nt Rules> s the present Rules>	<u> </u>	Classification Technical Rules(MET4800-78-2019) is reflected.

Amendment		reason
Section 6 Welding Co	Section 6 Welding Consumables	
601. $\sim$ 606. <same as="" present="" r<="" td="" the=""><td>lles&gt;</td><td></td></same>	lles>	
607. Welding consumables for stainless steel		
<b>1. ~ 2.</b> (Same as the present Rulesd)	1. ~ 2. 〈Same as the present Rulesd〉	
3. General provisions for test	3. General provisions for test	
(1) $\langle$ Same as the present Rulesd $\rangle$		
in (2) Steel plates to be used for test asses	mblies are to be as given in	* Request for
Table 2.2.62 according to the grades	of welding consumables, or	Fstablishment/Revision of
equivalent material recognized by the	Society may be used.	Classification Technical
Table 2.2.62 Grades of Steel for Test Assemb	bly	Rules(MET6100-487-2018)
Grade of welding consumables	Grade of steel for test assembly <sup>(1)</sup>	- It is revised to replace steel that are difficult to
RD 308, RY 308, RW 308, RU 308	<b>RSTS</b> 304	supply with equivalent
RD 308L, RY 308L, RW 308L, RU 308L	RSTS 304L	material
RD 309, RY 309, RW 309, RU 309		
RD 309L, RY 309L, RW 309L		
RD 309Mo, RY 309Mo, RW 309Mo, RU 309Mo	<i>RSTS</i> 309 <i>S</i>	
RD 309MoL, RW 309MoL		
<omitted></omitted>		
NOTE :		
(1) Notwithstanding the requirements in this table, mild steel or		
higher strength steel may be used for deposited metal test		
assembly. In this case, test assembly buttered.	ies are to be appropriately	
	Amendment         Section 6       Welding Co         601. ~ 606.        Same as the present Ru         607. Welding consumables for stainless         1. ~ 2.        Same as the present Rulesd>         3. General provisions for test         (1)        Same as the present Rulesd>         (2) Steel plates to be used for test assert         Table 2.2.62 according to the grades         equivalent material recognized by the         Table 2.2.62 Grades of Steel for Test Assemt         Grade of welding consumables         RD 308, RY 308, RW 308, RU 308         RD 308L, RY 308L, RW 308L, RU 308         RD 309, RY 309, RW 309, RU 309         RD 309L, RY 309L, RW 309Mo, RU 309Mo         RD 309Mo, RY 309Mo, RW 309Mo, RU 309Mo         RD 309MoL, RW 309MoL            (Omitted)         NOTE :         (1) Notwithstanding the requirements in higher strength steel may be used assembly. In this case, test assembly buttered.	Amendment         Section 6 Welding Consumables         601. ~ 606. <same as="" present="" rules="" the="">         607. Welding consumables for stainless steel         1. ~ 2. <same as="" present="" rulesd="" the="">         3. General provisions for test         (1) <same as="" present="" rulesd="" the="">         (2) Steel plates to be used for test assemblies are to be as given in Table 2.2.62 according to the grades of welding consumables, or equivalent material recognized by the Society may be used.         Table 2.2.62 Grades of Steel for Test Assembly         Grade of welding consumables       Grade of steel for test assembly<sup>(1)</sup>         RD 308, RY 308, RW 308, RU 308       RSTS 304         RD 308L, RY 308L, RW 308L, RU 308       RSTS 304L         RD 309, RY 309, RW 309, RU 309       RD 309Mo, RY 309Mo, RW 309Mo, RU 309Mo         RD 309Mo, RY 309Mo, RW 309Mo, RU 309Mo       RSTS 309S         RD 309Mo, RY 309MoL       (Omitted)         NOTE :       (1) Notwithstanding the requirements in this table, mild steel or higher strength steel may be used for deposited metal test assembly. In this case, test assemblies are to be appropriately buttered.</same></same></same>

# RULES FOR CLASSIFICATION(STEEL SHIPS)

(Part 2 Materials and Welding)

2019.07.



Hull Rule Development Team

## - Main Amendments -

(1) Enter into force on 1 October 2019 (the date of application for certification of material & welding or the contract date for ship construction)

• To reflect Request for Establishment/Revision of Classification Technical Rules

Present Amendment		reason
Section 5 Welders and Welder Performance Qualification Scheme	Section 5 Welders and Welder Performance Qualification Scheme	
<ul> <li>501. ~ 503. ⟨Omitted⟩</li> <li>504. General requirements for qualification validity <ol> <li>⟨Omitted⟩</li> </ol> </li> <li>2. Maintenance of the approval <ol> <li>Revalidation is to be carried out by the Society. The skill of the welder is to be periodically verified by one of the following: <ol> <li>(a) ~ (b) ⟨Omitted⟩</li> </ol> </li> <li>(c) If, despite the preceding (a) and (b), you have completed the revalidation of the qualification within one month after the expiration date of qualification, you may be deemed to have maintained the approval for the period from the expiration date to the completed, the validity of the qualification is to be as given in (a) or (b).</li> </ol> </li> </ul>	<ul> <li>501. ~ 503. ⟨Same as the present Rules⟩</li> <li>504. General requirements for qualification validity <ol> <li>⟨Same as the present Rules⟩</li> </ol> </li> <li>2. Maintenance of the approval <ol> <li>Revalidation is to be carried out by the Society. The skill of the welder is to be periodically verified by one of the following: <ol> <li>(a) ~ (b) ⟨Same as the present Rules⟩</li> <li>(c) If the Society recognizes the equivalence, qualification shall be deemed to be revalidated.[See Guidance]</li> <li>(d) If, despite the preceding (a) and (c), you have completed the revalidation of the qualification, you may be deemed to have maintained the approval for the period from the expiration date to the completed, the validity of the qualification is to eb as given in (a) or (c).</li> </ol> </li> </ol></li></ul>	<ul> <li>* Request for Establishment/Revision of Classification Technical Rules is reflected.</li> <li>- It is related with welder revalidation of UR W32.</li> </ul>
(2) ~ (3) $\langle \text{Omitted} \rangle$	(2)~(3) (Same as the present Rules)	

# RULES FOR CLASSIFICATION(STEEL SHIPS)

(Part 2 Materials and Welding)

2019.05.



#### Machinery Rule Development Team

### - Main Amendments -

(1) Enter into force on 1 July 2019 (the date of application for certification of material & welding or the contract date for ship construction)

• To reflect Request for Establishment/Revision of Classification Technical Rules

Present	Amendment	reason
CHAPTER 1 MATERIALS	CHAPTER 1 MATERIALS	
Section 1 General	Section 1 General	
101. Application	101. Application [See Guidance]	
1. <omitted></omitted>	1. <same as="" present="" rules="" the=""></same>	
<ul> <li>2. The materials other than those prescribed in this Chapter may be used where specially approved in connection with the design. In such cases, the detailed data relating to the chemical compositions and mechanical properties, etc. of the materials are to be submitted for approval.</li> <li>3. The material equivalent to this Chapter may be used without approval of 2. In such cases, except as otherwise specified, chemical composition and mechanical properties are to be in accord ance with the relevant standards, and the requirements of each Chapter are to be applied for approval of manufacturing process testing and inspection.</li> <li>4. &lt;0mitted&gt;</li> <li>102. ~ 110. <omitted></omitted></li> </ul>	<ul> <li>2. The materials other than those prescribed in this Chapter may be used where specially approved in connection with the design. In such cases, the detailed data relating to the chemical compositions and mechanical properties, etc. of the materials are to be submitted for approval.</li> <li>3. <deleted></deleted></li> <li>3. <deleted></deleted></li> <li>4. </li> <li>4. </li> <li>4. </li> <li>5. <same as="" present="" rules="" the=""></same></li> <li>102. ~ 110. <same as="" present="" rules="" the=""></same></li> <li><a href="https://www.semearchemical.com/">chereafter, same as the present Rules&gt;</a> </li> </ul>	* It is reflected Request for Establishment/Revision of Classification Technical Rules. - For clarity by many inquiries