

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part K Materials

Rules for the Survey and Construction of Steel Ships
Part K **2014 AMENDMENT NO.1**

Rule No.9 26th February 2014
Resolved by Technical Committee on 29th July 2013
Approved by Board of Directors on 24th September 2013

ClassNK
NIPPON KAIJI KYOKAI

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

Part K MATERIALS

Chapter 3 ROLLED STEELS

3.5 Rolled Stainless Steels

3.5.5 Mechanical Properties

Table K3.19 has been amended as follows.

Table K3.19 Mechanical Properties of Stainless Steels

Grade	Tensile test			Hardness test		
	Proof stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation ($L = 5.65\sqrt{A}$)(%)	<u>Brinell</u> <u>hardness</u> <i>HBW</i>	<u>Rockwell</u> <u>hardness</u> <i>HRB</i>	<u>Vickers</u> <u>hardness</u> <i>HV</i>
<i>KSUS304</i>	205min.	520min.	40min.	187max.	90max.	200max.
<i>KSUS304L</i>	175min.	480min.				
<i>KSUS304N1</i>	275min.	550min.	35min.	217max.	95max.	220max.
<i>KSUS304N2</i>	345min.	690min.		248max.	100max.	260max.
<i>KSUS304LN</i>	245min.	550min.	40min.	217max.	95max.	220max.
<i>KSUS309S</i>	205min.	520min.		187max.	90max.	200max.
<i>KSUS310S</i>						
<i>KSUS316</i>						
<i>KSUS316L</i>	175min.	480min.				
<i>KSUS316N</i>	275min.	550min.	35min.	217max.	95max.	220max.
<i>KSUS316LN</i>	245min.		40min.			
<i>KSUS317</i>	205min.	520min.	40min.	187max.	90max.	200max.
<i>KSUS317L</i>	175min.	480min.		217max.	95max.	220max.
<i>KSUS317LN</i>	245min.	550min.		187max.	90max.	200max.
<i>KSUS321</i>	205min.	520min.		217max.	95max.	220max.
<i>KSUS329J1</i>	390min.	590min.	18min.	277max.	29max. ⁽¹⁾	292max.
<i>KSUS329J3L</i>	450min.	620min.	18min.	302max.	32max. ⁽¹⁾	320max.
<i>KSUS329J4L</i>	450min.	620min.	18min.	302max.	32max. ⁽¹⁾	320max.
<i>KSUS347</i>	205min.	520min.	40min.	187max.	90max.	200max.

Note:

(1) Rockwell hardness of *KSUS329J1*, *KSUS329J3L* and *KSUS329J4L* is to C scale value (H_{RC}).

Chapter 5 CASTINGS

5.3 Stainless Steel Castings

5.3.5 Mechanical Properties

Table K5.6 has been amended as follows.

Table K5.6 Mechanical Properties of Stainless Steel Castings

Grade	Tensile test			Brinell hardness <i>HBW</i>
	Proof stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%) ($L = 5.65\sqrt{A}$)	
<i>KSCS13</i>	185 min.	440 min.	26 min.	183 max.
<i>KSCS14</i>	185 min.	440 min.	26 min.	
<i>KSCS16</i>	175 min.	390 min.	31 min.	
<i>KSCS17</i>	205 min.	440 min.	26 min.	
<i>KSCS18</i>	185 min.	440 min.	26 min.	
<i>KSCS19</i>	185 min.	390 min.	31 min.	
<i>KSCS21</i>	205 min.	440 min.	26 min.	

Chapter 6 STEEL FORGING

6.1 Steel Forgings

6.1.6 Mechanical Properties

Sub-paragraph -4 has been amended as follows.

4 Where batch material tests are carried out, the Surveyor may request hardness test on each product material. In this case, the difference in measured hardness between the maximum and minimum values of the steel forgings of the same lot is not to exceed 20 (*HBW*) for steel forgings less than $600N/mm^2$ in the specified tensile strength and is not to exceed 30 (*HBW*) for steel forgings not less than $600N/mm^2$ in the specified tensile strength.

6.2 Stainless Steel Forgings

6.2.6 Mechanical Properties

Table K6.5 has been amended as follows.

Table K6.5 Mechanical Properties

Grade	Tensile test				Hardness test		
	Yield point or proof stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%) ($L = 5.65\sqrt{A}$)	Reduction of area (%)	<u>Brinell</u> hardness <i>HBW</i>	<u>Rockwell</u> hardness <i>HRB</i>	<u>Vickers</u> hardness <i>HV</i>
<i>KSUSF304L</i> <i>KSUSF316L</i>	175min.	450min.	37min.	50min.	187 max.	90 max.	200 max.
Others	205min.	520min.	37min.	50min.			

6.2.7 Mechanical Tests

Sub-paragraph -4 has been amended as follows.

4 The difference in measured hardness between the maximum and minimum values of the stainless steel forgings of the same lot is not to exceed 20 (*HBW*).

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 26 February 2014.