
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part L **Equipment**

GUIDANCE

2011 AMENDMENT NO.2

Notice No.90 1st November 2011

Resolved by Technical Committee on 7th July 2011

AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

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

Part L EQUIPMENT

L2 ANCHORS

L2.1 Anchors

Paragraph L2.1.11 has been added as follows.

L2.1.11 Non-destructive Tests

1 A visual inspection is to be carried out on all visible surfaces of the anchor.

2 The testing procedures and acceptable criteria of the magnetic particle testing are as follows:

(1) Testing procedures are to conform to *ISO 9934-1(2001)*, *ISO 9934-2(2002)*, *ISO 9934-3(2002)*, *JIS Z 2320-1(2007)*, *JIS Z 2320-2(2007)*, *JIS Z 2320-3(2007)* or their equivalent thereto;

(2) Acceptable criteria are to be in accordance with **Table L2.1.11-2(1)** or **Table L2.1.11-2(2)** in the case of cast anchors or rolled steel fabricated anchors respectively.

3 The testing procedures and acceptable criteria of penetrant testing are as follows:

(1) Testing procedures are to conform to *ISO 3452-1(2008)*, *ISO 3452-2(2006)*, *ISO 3452-3(1998)*, *ISO 3452-4(1998)*, *JIS Z 2343-1(2001)*, *JIS Z 2343-2(2009)*, *JIS Z 2343-3(2001)*, *JIS Z 2343-4(2001)* or their equivalent thereto;

(2) Acceptable criteria are to be in accordance with those in **-2(2)** above.

4 The testing procedures and acceptable criteria of ultrasonic testing are as follows:

(1) The ultrasonic flaw detector is, in principle, to be of a reflection type with a frequency range of $1\sim 5\text{MHz}$;

(2) The conditions of ultrasonic testing are, as a standard, to be those specified in the following **Table L2.1.11-4**; and

(3) Anchors are acceptable where bottom echoes are detected and flaw echoes cannot be detected. In cases where indications are detected, the Surveyors make the decision, judging generally from the results of tests using different frequencies or different probes as well as the results of the surface inspections specified in above **-1** to **-3**, except in those cases where the cause is the configuration of the product.

5 Qualification of Operator:

Operators are to have Level 2 qualification or above, and such qualifications are to be certified by a certification body deemed appropriate by the Society, e.g. The Japanese Society for Non-destructive Inspection, in accordance with *ISO 9712(2005)*, *JIS Z 2305(2001)* or the equivalent thereto. Notwithstanding the above, operators having Level 1 qualification can perform the procedures under the supervision of another operator having Level 2 qualification or above.

Table L2.1.11-2(1) has been added as follows.

Table L2.1.11-2(1) Acceptance Criteria for Cast Anchors⁽¹⁾⁽²⁾

<u>Detection area</u>	<u>Kind of defect</u>		
	<u>Crack</u>	<u>Blowhole</u>	<u>Sand inclusion (scab, seizure)</u>
<u>Machined portions</u>	<u>Not accepted</u>	<u>4mm</u>	
<u>Other</u>	<u>Not accepted</u>	<u>10mm</u>	

Notes:

(1) The values of defect sizes in the Table are the actual size.

(2) The degree of concentration of defects is to be as considered appropriate by the Society.

Table L2.1.11-2(2) has been added as follows.

Table L2.1.11-2(2) Acceptance Criteria for Rolled Steel Fabricated Anchors

<u>Type of defect</u>	<u>Acceptance Criteria</u>
<u>Crack</u>	<u>Not accepted</u>
<u>Lack of fusion</u>	<u>Not accepted</u>
<u>Incomplete root penetration</u>	<u>Not accepted</u>
<u>Surface pore</u>	<u>Single pore diameter d (mm) $\leq 0.25a^{(1)}$ with a maximum diameter of 3mm 2.5d as the minimum distance to the adjacent pore which have any dimension greater than 2mm.</u>
<u>Undercut</u>	<u>For fillet welds: depth $\leq 0.8mm$ at any length</u>

Note:

(1) a : Throat of the fillet weld (mm)

Table L2.1.11-4 has been added as follows.

Table L2.1.11-4 Standard Conditions of Ultrasonic Testing

<u>Test frequency</u>	<u>2MHz</u>
<u>Working sensitivity</u>	<u>The echo height against the flaw of the standard test block SII shown in Annex K5.1.9(1) 1.2.7 is to be 20%</u>
<u>Couplant</u>	<u>Machine oil</u>

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 May 2012.
2. Notwithstanding the amendments to the Guidance, the current requirements may apply to anchors other than those for which the application for survey is submitted to the Society on or after the effective date.