RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part M Welding

2012 AMENDMENT NO.2

Rule No.53 15th November 2012

Resolved by Technical Committee on 27th July 2012

Approved by Board of Directors on 25th September 2012

Rule No.53 15th November 2012
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 M WELDING

Amendment 2-1

Chapter 2 WELDING WORKS

2.4 Welding Process

2.4.1 Selection of Welding Consumables

Table M2.1 has been amended as follows.

Table M2.1 Selection of Welding Consumables (rolled steel plate)

Kind and Grade of steel to be welded		Grade of applicable welding consumables (1) (4)
Rolled Steel for Hull	*KA*	1, 2, 3, 51, 52, 53, 54, 52*Y*40, 53*Y*40, 54*Y*40, *L*1, *L*2, *L*3
	KB,KD	2, 3, 52, 53, 54, 52*Y*40, 53*Y*40, 54*Y*40, *L*1, *L*2, *L*3
	KE	3, 53, 54, 53*Y*40, 54*Y*40, *L*1, *L*2, *L*3
	*KA*32, *KA*36	51, 52, 53, 54, 52*Y*40, 53*Y*40, 54*Y*40, *L*2(2), *L*3, 2*Y*42, 3*Y*42, 4*Y*42, 5*Y*42
	*KD*32, *KD*36	52, 53, 54, 52*Y*40, 53*Y*40, 54*Y*40, *L*2(2), *L*3, 2*Y*42, 3*Y*42, 4*Y*42, 5*Y*42
	*KE*32, *KE*36	53, 54, 53*Y*40, 54*Y*40, *L*2(2), *L*3, 2*Y*42, 3*Y*42, 4*Y*42, 5*Y*42
	*KF*32, *KF*36	54, 54*Y*40, *L*2(2), *L*3, 4*Y*42, 5*Y*42
	*KA*40, *KD*40	52*Y*40, 53*Y*40, 54*Y*40, 3*Y*42, 4*Y*42, 5*Y*42, 2*Y*46, 3*Y*46, 4*Y*46, 5*Y*46
	*KE*40	53*Y*40, 54*Y*40, 3*Y*42, 4*Y*42, 5*Y*42, 3*Y*46, 4*Y*46, 5*Y*46
	*KF*40	54*Y*40, 4*Y*42, 5*Y*42, 4*Y*46, 5*Y*46
(Omitted)	(Omitted)	(Omitted)

Notes:

(1) The symbols of welding consumables listed above show the materials which are specified in **Table M6.1**, **Table M6.12**, **Table M6.21**, **Table M6.29** and **Table M6.58**, and have same mark at the end. (For example, "3" shows *KMW*3, *KAW*3, *KSW*3 and *KEW*3, "*L*3" shows *KMWL*3, *KAWL*3 and *KSWL*3, "3 *Y*42" shows *KMW*3 *Y*42, *KAW*3 *Y*42 and *KSW*3 *Y*42.)

(2) Welding consumables of "*L*2" is applicable to steel grade of *KA*32, *KD*32, *KE*32 or *KF*32 only.

(3) Welding consumables of "5*Y*42" is applicable to steel grade of *KL*33 only.

(4) For welding consumables used for the corrosion resistant steel for cargo oil tanks specified in **3.13, Part K**, only welding consumables whose brands are listed in the "Particulars of Approval Conditions" for the corrosion resistant steel for cargo oil tanks are to be used. In cases where welding consumables not listed are used, measures deemed appropriate by the Society are to be taken.

EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 15 November 2012.

Amendment 2-2

Chapter 4 WELDING PROCEDURE AND RELATED SPECIFICATIONS

4.1 General

Table M4.2 has been amended as follows.

Table M4.2 Approved Range of Thickness[1]

Thickness of test assemblies t (*mm*) [2], [3], [4]	Approved range of thickness (*mm*)			
	Butt welding[4]			Fillet welding
	Multi-run technique	Single-run technique or Two-run technique	Large heat input welding process[5]	
$t \leq 100$	0.5t to 2t [6], [7] (100 max)	0.7t to 1.1t [6], [7] (100 max)	0.7t to t	0.5t to 2t [6], [7] (100 max)

Notes:

(1) Welding procedure used by dissimilar process (combination welding) is to be correspondingly applied to **Table M4.2**. In this case, thickness or throat thickness of each welding method is to be *t*.

(2) For unequal plate thickness of butt welds the lesser thickness is ruling dimension.

(3) For fillet welds, the range of approval shall be applied to the web thickness and flange thickness of test piece.

(4) ~~If~~ For T-joints ~~welds are applied to~~ with full penetration, *t* is the thickness of test assembly on the open edge side and the requirements are correspondingly applied to the requirements of butt welding.

(5) Large heat input welding means the welding with a welding heat input of not less than 50*kJ/cm*.

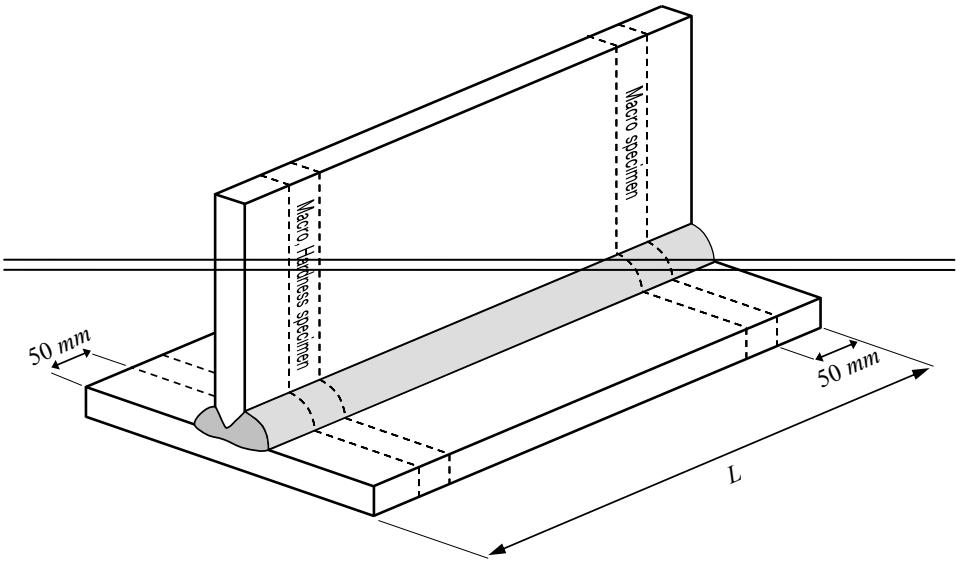
(6) For the vertical-down welding, the test piece thickness *t* is always taken as the upper limit of the range of application.

(7) For test assembly thickness not more than 12*mm*, the specified minimum content is not applicable.

4.4 Tests for T-joints with Full Penetration

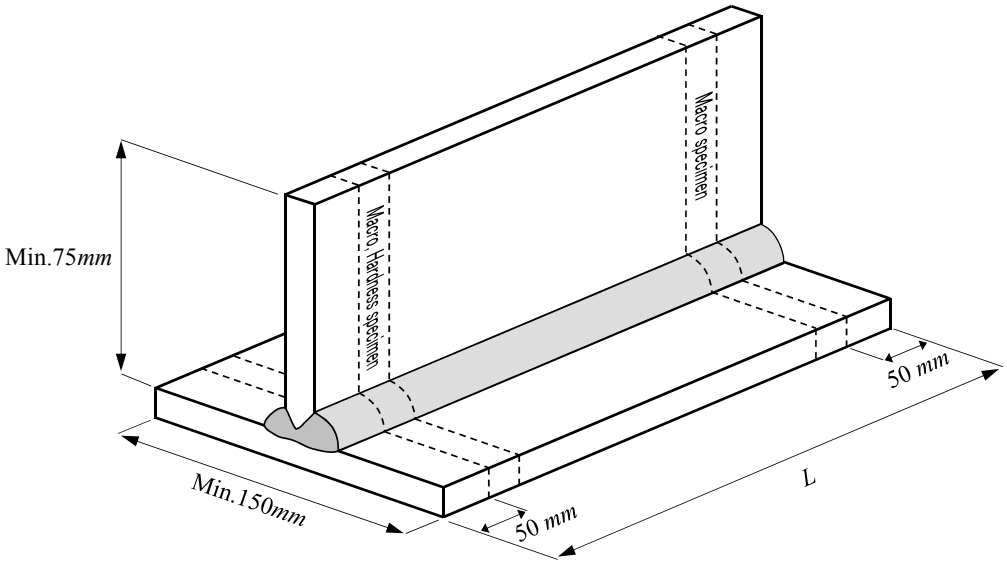
Fig. M4.8 has been amended as follows.

Fig. M4.8 Test Assembly for T-joints with full penetration



~~Note:~~

~~(1) The length of test specimen, *L* is not less than 350*mm*.~~



Note:

(1) The length of test specimen, *L* is not less than 350*mm* for manual welding and semi-automatic welding and not less than 1,000*mm* for automatic welding.

EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 15 November 2012.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to welding procedure other than those for which the application for approval is submitted to the Society on or after the effective date.

Amendment 2-3

Chapter 4 WELDING PROCEDURE AND RELATED SPECIFICATIONS

4.1 General

Table M4.1 has been amended as follows.

Table M4.1 Range of approval for type of weld joint

Type of weld joint for test assembly				Range of approval
Butt Welding	One side	With backing	A	A, C~~, D~~
		Without backing	B	A, B, C, D
	Both side	With gouging	C	C
		Without gouging	D	C, D
Fillet Welding			E	E

EFFECTIVE DATE AND APPLICATION (Amendment 2-3)

1. The effective date of the amendments is 1 January 2013.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to welding procedure for which the application for survey is submitted to the Society before the effective date, or welding procedure for which the application for approval in order to use for ships for which the date of contract for construction* is before the effective date.
*"contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.
For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:
(1) such alterations do not affect matters related to classification, or
(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.
The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part M Welding

GUIDANCE

2012 AMENDMENT NO.1

Notice No.82 15th November 2012

Resolved by Technical Committee on 27th July 2012

Notice No.82 15th November 2012
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 M WELDING

M2 WELDING WORKS

Section M2.2 has been added as follows.

M2.2 Work Scheme

M2.2.1 Welding Application Plan

With regard to corrosion resistant steel for cargo oil tanks, the wording "other items considered necessary by the Society" stipulated in **2.2.1(3), Part M of the Rules** means brands of welding consumables and brands of corrosion resistant steel listed in "Particulars of Approval Conditions" of corrosion resistant steel.

M2.2.2 Welding Procedure and Related Specification

For **2.2.2-2(2), Part M of the Rules**, suffixes added to the grades specified in **Table K3.40, Part K of the Rules** (e.g. "-*RCU*") need not be included.

M2.4 Welding Process

M2.4.1 Selection of Welding Consumables

Sub-paragraph -4 has been added as follows.

4 The wording "measures deemed appropriate by the Society" stipulated in **Note (4)** of **Table M2.1, Part M of the Rules** means applying corrosion protection in accordance with **25.2.3(1), Part C of the Rules** or **22.4.3(1), Part CS of the Rules** to welded parts.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 15 November 2012.