

Welding Procedure Qualification Tests

Amended Rules and Guidance

Rules for the Survey and Construction of Steel Ships Part M

Guidance for the Survey and Construction of Steel Ships Part M

Reason for Amendment

- (1) Regarding the welding procedure qualification tests for butt welded joints, Part M of the Rules specifies the dimensions of test assemblies for automatic welding, manual welding and semi-automatic welding. For rolled stainless steels, however, only the dimensions of test assemblies for manual welding and semi-automatic welding are specified, even though automatic welding is also used for rolled stainless steels. Therefore, relevant requirements were amended to specify the dimensions of test assemblies for the automatic welding of rolled stainless steels.
- (2) Requirements for welding procedure qualification tests, which are based upon IACS Unified Requirement (UR) W28, require that rolled steels for hulls with minimum yield stresses of 355 N/mm^2 or greater and high strength quenched and tempered rolled steel plates for structures be subjected to hardness tests to indicate their characteristics for cold cracking.

However, since materials having the same properties of rolled steels for hulls are included in the rolled steels for low temperature service and steel pipes for low temperatures specified in Part K of Guidance for the Survey and Construction of Steel Ships, relevant requirements for the hardness tests required during their welding procedure qualification tests were amended based upon ISO15614-1, which is used as reference in developing UR W28.

Additionally, although the above welding procedure qualification tests apply to butt welded joints, fillet welding joints and T-joint with full penetration, there is inconsistency in parts of the requirement related to the application of hardness tests and the treatment of approval ranges of thickness among these welded joints.

Therefore, relevant requirements were amended for the consistency of these requirements.

Outline of Amendment

- (1) Specified the dimensions of butt welded joint test assemblies for the automatic welding of rolled stainless steels.
- (2) Added requirements for the hardness tests of rolled steels for low temperature service and steel pipes for low temperature with minimum yield stresses of 355 N/mm^2 or greater and specifies the upper limits of the hardness test values.
- (3) Amended relevant requirements related to hardness tests for T-joints with full penetration so that they are consistent with requirements related to the hardness tests for other welding joints.
- (4) Specified that the upper limit of the approval range of thickness for rolled steels for low temperature service and steel pipes for low temperatures is to be the thickness of the test assembly when said upper limit value exceeds the specified upper limit value

of the hardness test.