

Welding Procedure Tests

Amended Rules

Rules for the Survey and Construction of Steel Ships Parts GF, and N

Reason for Amendment

The IGF Code, which specifies safety requirements for ships using low-flashpoint fuels, and the IGC Code, which specifies safety requirements for ships carrying liquefied gases in bulk, include requirements for tensile tests to be carried out during welding procedure tests. These requirements also cover cases where weld metal tensile strengths are lower than parent metal tensile strengths (hereinafter referred to as “undermatching”).

Whereas there are requirements related to undermatching specified for welded joints of aluminium alloys, there are no such requirements specified for welded joints other than aluminium alloys.

Therefore, amendments to the IGF Code and the IGC Code to clarify the treatment of undermatching during welding procedure tests were respectively adopted as resolutions MSC.475(102) and MSC.476(102) at the 102nd session of the IMO Maritime Safety Committee (MSC 102) held in November 2020.

Accordingly, relevant requirements are amended based upon resolutions MSC.475(102) and MSC.476(102).

Outline of Amendment

Revise requirements for undermatching in tensile tests during welding procedure tests.

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

Part GF SHIPS USING LOW-FLASHPOINT FUELS

Chapter 16 MANUFACTURE, WORKMANSHIP AND TESTING

16.3 Welding of Metallic Materials and Non-destructive Testing for the Fuel Containment System (with reference to *IGF Code* 16.3)

16.3.3 Welding Procedure Tests for Fuel Tanks and Process Pressure Vessels*

Sub-paragraph -5(1) is amended as follows.

5 Each test is to satisfy the following:

- (1) Tensile tests: cross-weld tensile strength is not to be less than the specified minimum tensile strength for the appropriate parent materials. For materials such as aluminium alloys, reference is to be made to **6.4.12(1)(a)iii**) with regard to the regulations for weld metal strength of under-matched welds (where the weld metal has a lower tensile strength than the parent metal). In every case, the position of fracture is to be recorded for information;
((2) and (3) are omitted.)

Part N SHIPS CARRYING LIQUEFIED GASES IN BULK

Chapter 6 MATERIALS OF CONSTRUCTION AND QUALITY CONTROL

6.5 Welding of Metallic Materials and Non-destructive Testing (*IGC Code 6.5*)

6.5.3 Welding Procedure Tests for Cargo Tanks, Process Pressure Vessels and Secondary Barriers*

Sub-paragraph -5(1) is amended as follows.

5 Each test is to satisfy the following requirements:

- (1) Tensile tests: cross-weld tensile strength is not to be less than the specified minimum tensile strength for the appropriate parent materials. For materials such as aluminium alloys, reference is to be made to **4.18.1(3)** with regard to the requirements for weld metal strength of under-matched welds (where the weld metal has a lower tensile strength than the parent metal). In every case, the position of fracture is to be recorded for information;

((2) and (3) are omitted.)