

Subpart 57.03—Procedure Qualifications

§ 57.03-1 General requirements.

(a) (*Modifies QW 201 and QB 201*). In order to obtain Coast Guard approval of a weld procedure to be used on welded fabrication that is required to meet the requirements of this part each manufacturer or contractor must do the following:

(1) Each manufacturer or contractor must submit to the cognizant Officer in Charge, Marine Inspection, for approval, a welding or brazing procedure specification for the particular welding or brazing process to be used. The welding or brazing procedure specification must include a sketch showing joint preparation. Suggested forms showing the information which is required in the welding or brazing procedure specification are in QW 480 and QB 480 of section IX of the ASME Code.

(2) Each manufacturer or contractor must submit to the cognizant Officer in Charge, Marine Inspection, for approval, the results of the physical tests required by section IX of the ASME Code.

(b) (*Modifies QW 202.1 and QW 451*). To obtain approval of the welding procedure, fabricators desiring to use any welding process for applications involving temperatures below -18°C (approx. 0°F) must conduct a procedure qualification test in accordance with the requirements of paragraph (a) of this section and the following additional requirements:

(1) The test piece must be large enough so that sufficient material is available for the tests prescribed in QW 451 of the ASME Code, plus toughness tests and a macro-etch specimen.

(2) To obtain approval the fabricator must conduct toughness tests and qualify in accordance with § 54.05 of the subchapter. Results of toughness tests must be submitted for approval to the cognizant Officer in Charge, Marine Inspection.

(3) The macro-etch specimen must be submitted with the test results required by paragraph (a) of this section. Macro-etch specimens must not be obtained by flame or arc cutting from the test piece. Weld reinforcement must remain in place unless the production

welds are to be machined or ground. Backing rings must also be left in place unless they are to be removed in production.

(4) Low temperature procedure qualification thickness ranges are as indicated in Table 57.03-1(b).

TABLE 57.03-1(b)—LOW TEMPERATURE WELD PROCEDURE QUALIFICATION THICKNESS RANGES

Thickness, "t" of test plate or pipe as welded (inches)	Range of thickness of materials qualified by test plate or pipe (inches)	
	Minimum	Maximum
$1/16$ to $3/8$, inclusive	$1/16$	$3/8$
Over $3/8$ but less than $3/4$	$3/8$	$3/4$
$3/4$ to 3, inclusive	$3/4$	***

*For thicknesses less than $5/8$ inch, the thickness of the test plate or pipe is the minimum thickness qualified.

**Where "t" is the thickest material over $3/4$ inch to be used in production.

(5) The limits for heat input production, as measured in Joules/inch, must be at or below the maximum heat input applied to the procedure test plate. The word "maximum" must not be interpreted as either nominal or average.

(c) [Reserved]

(d) For quenched and tempered steels, the Commandant may prescribe special testing to assure that the welding procedure produces weldments which are not prone to low energy fracture through the heat affected zone.

(e) Welding procedures that utilize type E 6012, E 6013, E 6014, E 6024, E 7014, or E 7024 electrode will be approved only for the specific type, size, and brand electrode used. If a different type, size, or brand of electrode is used, a new procedure qualification test must be conducted.

(f) Welding or brazing procedure approvals cannot be transferred from one plant to another plant of the same company or from one company to another.

(g) (*Modifies QW 253, QW 254, and QW 255*). Item QW 402.4 is an essential variable for all procedure specifications.

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