with Appendix P of Section VIII of the ASME Code.

(d) Weldments and all materials used in pressure vessel type cargo tanks operating at ambient temperatures and constructed of materials listed in Table UCS–23 must pass Charpy impact tests in accordance with UG–84 at a temperature of −20 °F or colder, except as provided by paragraphs (d)(1), (d)(2), and (d)(3) of this section.

(1) Charpy impact tests are not required for any of the following ASTM materials if the thickness for each is 5/8 inch or less, unless otherwise indicated:

(i) A–182, normalized and tempered.

(ii) A–302, Grades C and D.

(iii) A–336, Grades F21 and F22 that are normalized and tempered.

(iv) A–387, Grades 21 and 22 that are normalized and tempered.

(v) A–516, Grades 55 and 60.

(vi) A–533, Grades B and C.

(vii) All other plates, structural shapes and bars, and other product forms, except for bolting, if produced to a fine grain practice and normalized.

(2) Charpy impact tests are not required for any of the following ASTM materials if the thickness for each is 1¼ inch or less:

(i) A–203.

(ii) A–508, Class 1.

(iii) A–516, normalized.

(iv) A–524.

(v) A–537.

(vi) A–612, normalized.

(vii) A–662, normalized.

(viii) A–724, normalized.

(3) Charpy impact tests are not required for any of the following bolt materials:

(i) A–193, Grades B5, B7, B7M, and B16.

(ii) A–307, Grade B

(iii) A–325, Type 1.

(iv) A–449.

[CGFR 68–82, 33 FR 18828, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9977, June 17, 1970; CGD 73–133R, 39 FR 9178, Mar. 8, 1974; CGD 74–289, 44 FR 26007, May 3, 1979; CGD 77–069, 52 FR 31626, Aug. 21, 1987; CGD 85–061, 54 FR 50964, Dec. 11, 1989; USCG–1999–5151, 64 FR 67178, Dec. 1, 1999; USCG–2000–7790, 65 FR 58460, Sept. 29, 2000]

§54.25–15 Low temperature operation—high alloy steels (modifies UHA–23(b) and UHA–51).

(a) Toughness tests for the materials listed in UHA–51(a) of the ASME Code for service temperatures below −425 °F., UHA–51(b)(1) through (5) for service temperatures below 0 °F., and UHA–51(c) for all service temperatures, shall be performed in accordance with the requirements of subpart 54.05. These requirements are also applicable to nonpressure vessel type, low temperature tanks and associated secondary barriers, as defined in §38.05–4 in subchapter D (Tank Vessels) of this chapter. Such tests are required regardless of the vessel's design stress. Service temperature is defined in §54.25–10(a)(2).

(b) Materials for pressure vessels with service temperatures below −320 °F. shall be of the stabilized or low carbon (less than 0.10 percent) austenitic stainless steel type, produced according to the applicable specifications of Table UHA–23 of the ASME Code. These materials and their weldments shall be tested for toughness according to the requirements of subpart 54.05 except that the Charpy V-notch testing acceptance criteria will be in accordance with UHT–6(a)(4) and (5) of the ASME Code."

(c) Except as permitted by §54.05–30, the allowable stress values used in the design of low temperature pressure vessels may not exceed those given in Table UHA–23 of the ASME Code for temperatures of −20 °F. to 100 °F.

[CGFR 68–82, 33 FR 18828, Dec. 18, 1968, as amended by CGD 73–133R, 39 FR 9178, Mar. 8, 1974; CGD 73–254, 40 FR 40164, Sept. 2, 1975]

§54.25–20 Low temperature operation—ferritic steels with properties enhanced by heat treatment (modifies UHT–5(c), UHT–6, UHT–23, and UHT–82).

(a) For service temperatures below 0 °F. but not below the designated minimum service temperature, steel conforming to the specifications of Table 54.25–20(a) may be used in the fabrication of pressure vessels and nonpressure vessel tanks and associated secondary barriers, as defined in §38.05–4 of subchapter D (Tank Vessels) of this chapter. The ultimate and yield