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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 section VIII of the ASME Boiler and Pressure Vessel 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 section VIII of the ASME Boiler and Pressure Vessel 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; USCG–2003–16630, 73 FR 65171, Oct. 31, 2008]

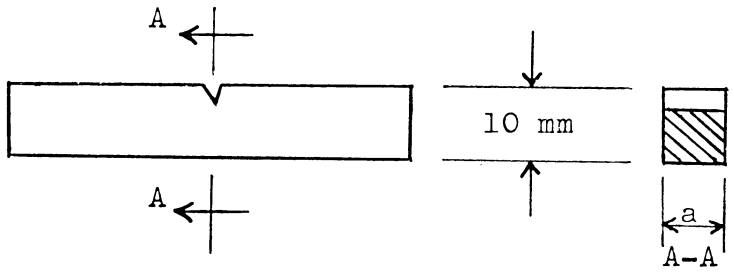
§ 54.25–20 Low temperature operation—ferritic steels with properties enhanced by heat treatment (modifies UHT–5(c), UHT–6, UHT–23, and UHT–82).

(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 strengths shall be as shown in the applicable specification and shall be suitable for the design stress levels adopted. The service temperature shall not be colder than −320 °F. Service temperature is defined in § 54.25–10(a) (2).

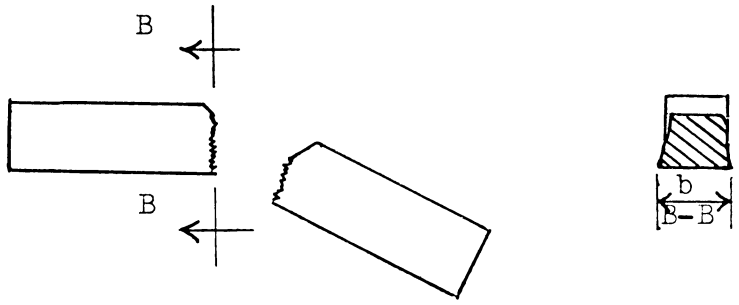
TABLE 54.25–20(a)

Steel	Minimum service temperature, °F.
A–333, 9 percent Ni, grade 8	−320
A–334, 9 percent Ni, grade 8	−320
A–353, 9 percent Ni, double normalized and tempered	−320
A–522, 9 percent Ni, NNT, Q and T, forging	−320
A–553, 9 percent Ni, quenched and tempered	−320

(b) The materials permitted under paragraph (a) of this section shall be tested for toughness in accordance with the requirements of UHT–6 of section VIII of the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 54.01–1) except that tests shall be conducted at the temperature specified in § 54.05–6 in lieu of that in UHT–5(c) of section VIII of the ASME Boiler and Pressure Vessel Code.



CHARPY V-NOTCH SPECIMEN



BROKEN SPECIMEN

LATERAL EXPANSION = (b-a)

(c) The qualification of welding procedures, welders and weld-production testing for the steels of Table 54.25–20(a) must conform to the requirements of part 57 of this subchapter and to those of subpart 54.05 of this part except that the acceptance criteria for Charpy V-notch testing must be in accordance with UHT–6(a)(4) of section VIII of the ASME Boiler and Pressure Vessel Code.

(d) The values of absorbed energy in foot-pounds and of fracture appearance in percentage shear, which are recorded for information when complying with paragraphs (b) and (c) of this section shall also be reported to the marine inspector or the Commandant, as applicable.

(e) Except as permitted by §54.05–30, the allowable stress values may not exceed those given in Table UHT–23 of section VIII of the ASME Boiler Pressure and Vessel Code for temperatures of 150 °F and below.

[CGFR 68–82, 33 FR 18828, Dec. 18, 1968, as amended by CGD 73–133R, 39 FR 9179, Mar. 8, 1974; USCG–2000–7790, 65 FR 58460, Sept. 29, 2000; USCG–2003–16630, 73 FR 65171, Oct. 31, 2008]

§54.25–25 Welding of quenched and tempered steels (modifies UHT–82).

(a) The qualification of welding procedures, welders, and weld-production testing must conform to the requirements of part 57 of this subchapter. The requirements of 46 CFR 57.03–1(d)