Appendix C to Part 192

1 GENERAL ...

2 BASIC TEST

(a) The test welds must be made on NPS 12 or less pipe (Appendix C, Section I). It is suggested ~~the~~ that specific pipe sizes for tests be typical of those anticipated to be encountered most frequently by the welder.

(b) Four test specimen coupons ~~should~~ must be prepared for a root bend test (Appendix C, Section I). For pipe sizes NPS 2 or above, the test specimen coupons ~~should~~ may be prepared as shown in API Std 1104, Figures 3 and 4 (see listing in §192.7, not IBR for Appendix C) ~~Figure CA (1) and taken from the locations shown in Figure CA (2)~~. Two test welds are needed for pipe sizes less than NPS 2 with the specimen coupons taken at alternate quadrants of each weld, such as shown in API Std 1104, Figure 3 ~~Figure CA (3)~~.

(c) A guided bend test jig proportioned as shown in API Std 1104, Figure 9 ~~Figure CB~~ is suggested for the root bend test. The root of the weld should be placed down on the die with the weld at mid-span. The plunger should be forced down until the curvature of the test coupon is approximately "U" shaped.

3 ADDITIONAL TESTS FOR WELDERS OF SERVICE-LINE CONNECTIONS TO MAINS

(a) This test is made by welding a service-line connection fitting to a segment of pipe having a nominal pipe size typical of that frequently encountered, or an NPS 4 pipe segment. Nipples may be used for welder tests in place of a service-line connection fitting.

(b) Where large-diameter service-line connection fittings or large main branching tees are anticipated to be encountered by the welder, it may be appropriate to give the welder an additional test for such configurations. The test weld branch nipple should be destructively tested following API Std 1104, Section 5.8, Testing of Welded Joints — Fillet Welds, and Section 6.5.6, Sampling of Test — Fillet Welds (see listing in §192.7, not IBR for Appendix C).

4 PERIODIC TESTS FOR WELDERS OF SMALL SERVICE LINES

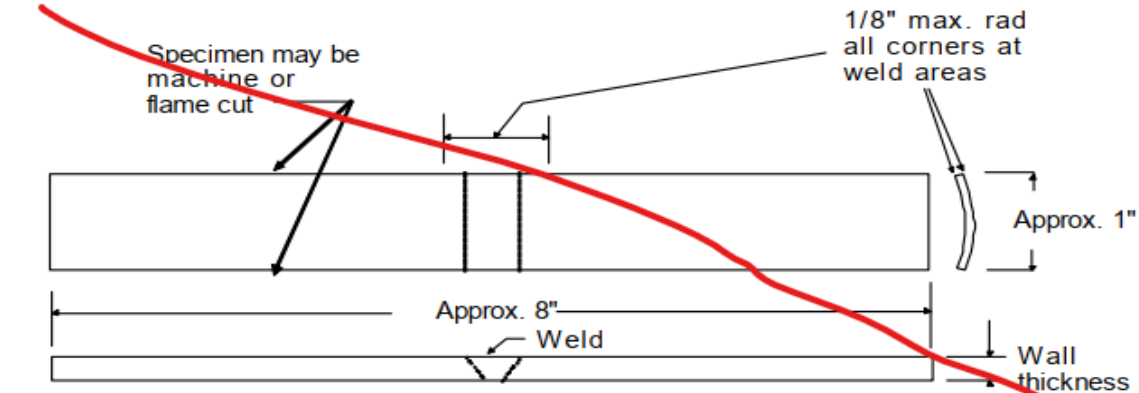
(a) This weld test should be accomplished using pipe of NPS ¾, ~~to~~ NPS 1, or other size typically encountered by the welder when requalifying to weld pipelines of less than NPS 2.

(b) The beveling, root opening, and weld details should conform to the specifications of the procedure under which the welder is to be requalified.

(c) One test specimen coupon is needed from each of two weld samples prepared as suggested for the Basic Test ~~shown in Figure CA (1)~~. The test jig should conform to the Basic Test guidelines ~~Figure CB~~.

Letter Ballot Note: The drawings in GM Appendix C are proposed to be removed due to discrepancies with API 1104 (which appears to be the original source).

Root Bend Test Specimen



Weld reinforcement shall be removed from both faces flush with the surface of the specimen. Specimen shall not be flattened prior to testing.

FIGURE CA (1)

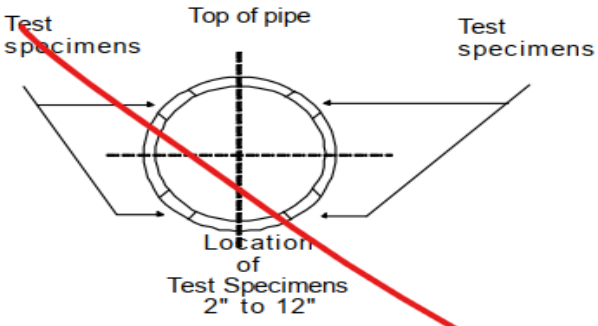


FIGURE CA (2)

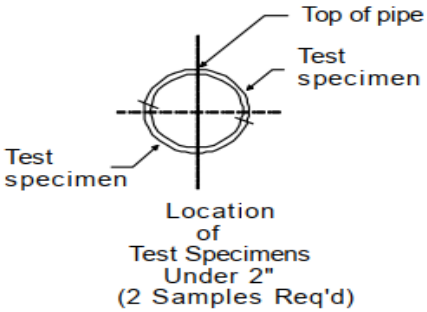
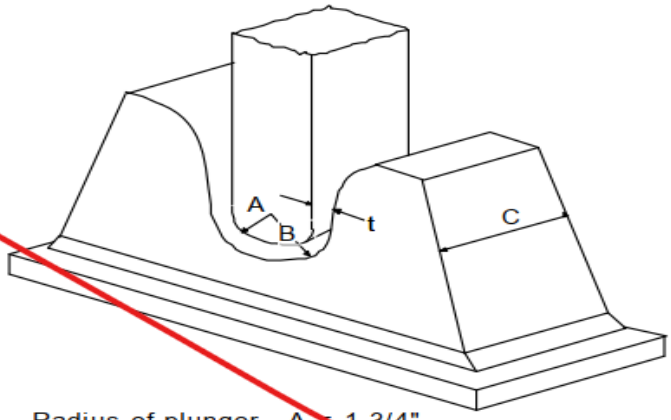


FIGURE CA (3)

Jig for Guided Bend



Radius of plunger A = 1 3/4"
Radius of die B = 2 15/16"
Width of die C = 2"
Thickness of specimen t = 0.500" max.

FIGURE CB