

1 **(September 8, 2020)**

2 **Furnishing St. Piling**

3 Welding for steel pipe piling shall conform to AWS D1.1/D1.1M, latest edition,  
4 Structural Welding Code, and Section 6-03.3(25), except that all weld filler metal  
5 shall be low hydrogen material selected from Table 4.1 in AASHTO/AWS  
6 D1.5M/D1.5:2020 Bridge Welding Code.

7  
8 Welding and joint geometry for the seam, whether it be longitudinal or helical, shall  
9 be qualified in accordance with Clause 4, Qualification, of the AWS D1.1/D1.1M,  
10 latest edition, Structural Welding Code. In addition, charpy V-notch (CVN) testing  
11 in accordance with Clause 4, Part D, of the AWS D1.1/D1.1M, latest edition,  
12 Structural Welding Code, shall be performed. CVN testing shall include five tests at  
13 0°F. The acceptance threshold for the five samples shall meet an average value of  
14 20-foot-pounds CVN for the set of test coupons and a minimum value of 15-foot-  
15 pounds CVN for any individual test coupon. The Contractor may submit  
16 documentation of prior qualification to the Engineer to satisfy this requirement.

17  
18 Dimensional tolerances shall conform to the material specification that the steel  
19 pipe piling is manufactured under, and, at a minimum, the following requirements:

- 20  
21 1. Out-of-roundness shall be within 1-percent of the nominal outside  
22 diameter.  
23  
24 2. Deviation from a straight line, parallel to the centerline of the pile, shall not  
25 exceed 0.001 times the length of the pile.  
26  
27 3. The maximum radial offset of the strip/plate edges shall be 1/8-inch. The  
28 offset shall be transitioned with a taper weld and the slope shall not be  
29 less than a 1 in 2.5 taper.  
30  
31 4. The bead height of weld reinforcement shall not exceed 3/16-inch.  
32  
33 5. Misalignment of weld beads for double-sided welded pipe shall not exceed  
34 1/8-inch.  
35  
36 6. The wall thickness shall not be less than 95-percent or greater than 110-  
37 percent of the specified nominal thickness.  
38

39 All seams and skelp splices shall be complete penetration welds. Skelp splices in  
40 spiral welded (helical seam) pipe shall not be located within 12 inches of a girth  
41 shop or field weld.  
42

43 All skelp splices shall be 100 percent radiographically or ultrasonically inspected in  
44 accordance with either API 5L Annex E Section E.4 or E.5, or Table 6.2 and Clause  
45 6 Part E, F or G in AWS D1.1/D1.1M, latest edition, Structural Welding Code.  
46 Additionally, 10-percent of the total length of seam welds for both longitudinal and  
47 helical welded pipe, and one pipe diameter length of seam centered on any skelp  
48 splice intersection, shall be randomly inspected as specified above. If repairs are  
49 required in more than 10-percent of the welds examined, additional inspection shall  
50 be performed. The additional inspection shall be made on both sides of the repair  
51 for a length equal to 10-percent of the length of the pipe outside circumference. If

1 repairs are required in more than 10-percent of welds examined in the second  
2 sample, 100-percent of the entire seam on the pile shall be inspected.  
3  
4 All seams and splices shall be 100 percent visually inspected in accordance with  
5 the acceptance criteria for statically loaded non-tubular connections in Table 6.1 of  
6 the AWS D1.1/D1.1M, latest edition, Structural Welding Code. Repairs shall  
7 conform to Section 5.26 of the AWS D1.1/D1.1M, latest edition, Structural Welding  
8 Code, using approved repair and weld procedures.  
9  
10 Each length of steel pipe pile shall be marked with paint stencil, no closer than six  
11 inches to the end of the pipe, with the name of the manufacturer, material  
12 specification and grade of pipe, steel heat number, nominal pipe diameter, and wall  
13 thickness.