The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

**AWS Errata Sheet**

The following Errata have been identified and will be incorporated into the next reprinting of AWS D1.1/D1.1M:2020, *Structural Welding Code-Steel*

Page 9, term **dihedral angle**: a return is missing between “See local dihedral angle” and “discontinuity”

**dihedral angle.** See local dihedral angle.

**discontinuity.** An interruption of the typical structure of a material, such as a lack of homogeneity in its mechanical or metallurgical, or physical characteristics. A discontinuity is not necessarily a defect.

Page 11, the symbol should be \( \phi \) not \( \theta \).

**groove angle, \( \phi \) (tubular structures).** The angle between opposing faces of the groove to be filled with weld metals, determined after the joint is fit-up.

Page 11, the term **interpass temperature** is missing the asterisk.

**interpass temperature.** In a multipass weld, the temperature of the weld area between weld passes.

Page 12, the symbol should be \( \Psi \) not \( \theta \).

**local dihedral angle, \( \Psi \) (tubular structures).** The angle, measured in a plane perpendicular to the line of the weld, between tangents to the outside surfaces of the tubes being joined at the weld. The exterior dihedral angle, where one looks at a localized section of the connection, such that the intersecting surfaces may be treated as planes.

Page 13, the term **preheat temperature, welding** is missing the asterisk.

**preheat temperature, welding.** The temperature of the base metal in the volume surrounding the point of welding immediately before welding is started. In a multiple-pass weld, it is also the temperature immediately before the second and subsequent passes are started.

Page 14, top of page *single electrode,* *parallel electrode,* * multiple electrode moved to below the definition of SAW.

**Submerged arc welding (SAW).** An arc welding process that uses an arc or arcs between a bare metal electrode or electrodes and the weld pool. The arc and molten metal are shielded by a blanket of granular flux on the workpieces. The process is used without pressure and with filler metal from the electrode and sometimes from a supplemental source (welding rod, flux, or metal granules).

---

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)
*single electrode.* One electrode connected exclusively to one power source which may consist of one or more power units.

*parallel electrode.* Two electrodes connected electrically in parallel and exclusively to the same power source. Both electrodes are usually fed by means of a single electrode feeder. Welding current, when specified, is the total for the two.

*multiple electrodes.* The combination of two or more single or parallel electrode systems. Each of the component systems has its own independent

Page 42, Table 4.5 entitled “Fatigue Stress Design Parameters (see 4.14.1)”
- Description 5.6 replace “Formula 4” with “Formula 5”.
- Description 5.7 replace “Formula 4” with “Formula 5”.
- Description 8.2 replace “Formula 3” with “Formula 4”.
- Description 8.4 replace “Formula 3” with “Formula 4”.

Page 63, Clause 5.4.1
- Replace the reference “5.4.1.1” with “5.4.1.1 through 5.4.1.9.”

Page 69, Table 5.2 entitled “Essential Variables for Prequalified WPSs (see 5.2.1)”
- Item (4) Base Metal Preheat Category(s) replace “(See Table 5.4)” with “(See Table 5.8)”.

Page 71, Table 5.3 “Approved Base Metals for Prequalified WPSs (see 5.3)”
- Remove the underlines from steel specification requirements shown for ASTM A847

Page 72, Table 5.3 entitled “Approved Base Metals for Prequalified WPSs (see 5.3)”
- Replace “Group III, ASTM A710, Grade A, Class 2 ≤ in [20 mm]” with “Group III, ASTM A710, Grade A, Class 2 ≤ in [25 mm]”

Page 76, Note 8
- Replace “Annex U” with “Annex M”.

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)

Page 79, Table 5.8 entitled “Prequalified Minimum Preheat and Interpass Temperature (see 5.7)”

- Category B on page 79 lists the Category C Minimum Preheat and Interpass Temperatures instead of the Category B Minimum Preheat and Interpass Temperatures. See corrected Table.

<table>
<thead>
<tr>
<th>Category</th>
<th>Steel Specification</th>
<th>Welding Process</th>
<th>Thickness of Thickest Part at Point of Welding</th>
<th>Minimum Preheat and Interpass Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Steel Specification</strong></td>
<td><strong>Welding Process</strong></td>
<td><strong>Thickness of Thickest Part at Point of Welding</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>in</strong></td>
<td><strong>mm</strong></td>
<td><strong>°F</strong></td>
</tr>
<tr>
<td><strong>B (cont’d)</strong></td>
<td></td>
<td>1/8 to 3/4 incl.</td>
<td>3 to 20 incl.</td>
<td>32°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 3/4 thru 1-1/2 incl.</td>
<td>Over 20 thru 38 incl.</td>
<td>50°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 1-1/2 thru 2-1/2 incl.</td>
<td>Over 38 thru 65 incl.</td>
<td>150°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 2-1/2 thru 3 incl.</td>
<td>Over 65 thru 90 incl.</td>
<td>225°F</td>
</tr>
</tbody>
</table>

Table 5.8 (Continued)

Prequalified Minimum Preheat and Interpass Temperature (see 5.7)
Page 81, Notes for Figures 5.1 and 5.2; Footnote g

-Footnote g should read: “g If fillet welds are used in statically loaded structures to reinforce groove welds in corner and T-joints, these shall be equal to T1/4, but need not exceed 3/8 in [10 mm]. Groove welds in corner and T-joints of cyclically loaded structures shall be reinforced with fillet welds equal to T1/4, but need not exceed 3/8 in [10 mm].”

Page 88, Figure 5.1 (Continued)—Prequalified CJP Groove Welded Joint Details (See 5.4.1) (Dimensions in Inches), Joint Detail Single-bevel-groove weld (4), T-joint (T), Corner joint (C)

-delte “ALL DIMENSIONS IN mm”

Page 96, Figure 5.1 (Continued)—Prequalified CJP Groove Welded Joint Details (See 5.4.1) (Dimensions in Millimeters)

-Replace Spacer = 1/8 x R with 3 x R
-Replace Spacer = 1/4 x R with 6 x R

Page 99, Figure 5.1 (Continued)—Prequalified CJP Groove Welded Joint Details (See 5.4.1) (Dimensions in Millimeters)

-Replace Spacer = 1/8 x R with 3 x R
-Replace Spacer = 1/4 x R with 6 x R

Page 104, Figure 5.2— Prequalified PJP Groove Weld Joint Details (see 5.4.2) (Dimensions in Inches)

-Replace the title of the Figure with “Prequalified PJP Groove Welded Joint Details (see 5.4.2) (Dimensions in Inches)”

Page 122, Figure 5.4—Prequalified Skewed T-Joint Joint Details (Nontubular) (See 5.4.3.2)

-Note 1. (Sn), (Sn’) = Weld size dependent on magnitude of root opening (Rn) (see 7.21.1). (n) represents 1 through 5.
-Replace “(n) represents 1 through 5” with “(n) represents 1 through 6.”
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)

Page 140, Table 6.2 entitled “WPS Qualification—CJP Groove Welds: Number and Type of Test Specimens and Range of Thickness Qualified (see 6.5)”

- The metric dimensions were added to the Nominal Base Metal Thickness Column. See corrected Table.

<table>
<thead>
<tr>
<th>Nominal Plate Thickness (T) Tested, in [mm]</th>
<th>Reduced Section Tension (see Fig. 6.10)</th>
<th>Root Bend (see Fig. 6.8)</th>
<th>Face Bend (see Fig. 6.8)</th>
<th>Side Bend (see Fig. 6.9)</th>
<th>Nominal Base Metal Thickness Qualified, in [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 ≤ T ≤ 3/8 [3 ≤ T ≤ 10]</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>(Footnote d)</td>
<td>1/8 [3]</td>
</tr>
</tbody>
</table>

1. Tests on Plate a

2. Tests on ESW and EGW c

---

a See Figures 6.6 and 6.7 for test plate requirements.

b For square groove welds that are qualified without backgouging, the maximum thickness qualified is limited to the test thickness.

c See Figure 6.5 for test plate requirements.

d For 3/8 in [10 mm] plate thickness, a side-bend test may be substituted for each of the required face- and root-bend tests.
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)

Pages 142 and 143, Table 6.5 entitled “PQR Essential Variable Changes Requiring WPS Requalification for SMAW, SAW, GMAW, FCAW, and GTAW (see 6.8.1)”

-Several of the columns had no X and no shading. Shading has been added. See the portion of the Table that has been corrected.

<table>
<thead>
<tr>
<th>Essential Variable Changes to PQR Requiring Requalification</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMAW</td>
</tr>
<tr>
<td><strong>Process Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>(12) A change in the amperage for each diameter used by:</td>
<td>To a value not recommended by manufacturer</td>
</tr>
<tr>
<td>(13) A change in type of current (ac or dc) or polarity (electrode positive or negative for dc current)</td>
<td>X</td>
</tr>
<tr>
<td>(14) A change in the mode of transfer</td>
<td>X</td>
</tr>
<tr>
<td>(15) A change from CV to CC output</td>
<td>X</td>
</tr>
<tr>
<td>(16) A change in the voltage for each diameter used by:</td>
<td>&gt; 7% increase or decrease</td>
</tr>
<tr>
<td>(17) An increase or decrease in the wire feed speed for each electrode diameter (if not amperage controlled) by:</td>
<td>&gt; 10%</td>
</tr>
</tbody>
</table>

-Several of the columns had an X and shading. Shading has been removed. See the portion of the Table that has been corrected.

<table>
<thead>
<tr>
<th>Essential Variable Changes to PQR Requiring Requalification</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMAW</td>
</tr>
<tr>
<td><strong>SAW Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>(22) A change of &gt; 10%, or 1/8 in [3 mm], whichever is greater, in the longitudinal spacing of the arcs</td>
<td>X</td>
</tr>
<tr>
<td>(23) A change of &gt; 10%, or 1/8 in [3 mm], whichever is greater, in the lateral spacing of the arcs</td>
<td>X</td>
</tr>
<tr>
<td>(24) An increase or decrease of more than 10° in the angular orientation of any parallel electrode</td>
<td>X</td>
</tr>
<tr>
<td>(25) For mechanized or automatic SAW; an increase or decrease of more than 3° in the angle of the electrode</td>
<td>X</td>
</tr>
<tr>
<td>(26) For mechanized or automatic SAW; an increase or decrease of more than 5° normal to the direction of travel</td>
<td>X</td>
</tr>
</tbody>
</table>
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)

Page 144, Table 6.5 item (27)
- Replace “6.10” with “10.8”

Page 144, Table 6.5 item (33)
- Replace “7.22.4.1” with “7.21.4.1”

Page 147, Table 6.7 entitled “PQR Supplementary Essential Variable Changes for CVN Testing Applications Requiring WPS Requalification for SMAW, SAW, GMAW, FCAW, GTAW (see 6.8.1), and ESW/EGW (see 6.8.2)”
- Several of the columns had no X and no shading. Shading has been added.
- Item (9)-replaced “signal” with “single” See the portion of the Table that has been corrected.

<table>
<thead>
<tr>
<th>Variable</th>
<th>SMAW</th>
<th>SAW</th>
<th>GMAW</th>
<th>FCAW</th>
<th>GTAW</th>
<th>ESW/EGW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filler Metal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) A change in the AWS A5.X Classification, or to a weld metal or filler metal classification not covered by A5.X specifications. Carbon and low-alloy steel FCAW and GMAW-Metal Cored electrodes previously classified under A5.18, A5.20, A5.28, or A5.29 and reclassified under A5.36 without change of manufacturer or brand name, and meeting all of the previous classification requirements used in PQR/WPS CVN qualification shall be acceptable without requalification.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(4) A change in the Flux/Wire classification</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) A change in either the electrode or flux trade name when not classified by an AWS specification</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>(6) A change from virgin flux to crushed slag flux</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>(7) A change in the manufacturer or the manufacturer’s brand name or type of electrode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preheat/Interpass Temperature

<table>
<thead>
<tr>
<th>Variable</th>
<th>SMAW</th>
<th>SAW</th>
<th>GMAW</th>
<th>FCAW</th>
<th>GTAW</th>
<th>ESW/EGW</th>
</tr>
</thead>
<tbody>
<tr>
<td>(8) An increase of more than 100°F [56°C] in the maximum preheat or interpass temperature qualified</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Postweld Heat Treatment

<table>
<thead>
<tr>
<th>Variable</th>
<th>SMAW</th>
<th>SAW</th>
<th>GMAW</th>
<th>FCAW</th>
<th>GTAW</th>
<th>ESW/EGW</th>
</tr>
</thead>
<tbody>
<tr>
<td>(9) A change in the PWHT temperature and/or time ranges. The PQR test shall be subject to 80% of the aggregate times at temperature(s). Total time(s) may be applied in single or multiple heating cycle(s).</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Page 182, Figure 6.26-Second figure
- Replace “3/4 in [75 mm]” with “3/4 in [20 mm]”
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)

Page 184, Figure 6.28—CVN Test Specimen Locations (see 6.27.1).

-For Single V-Groove or Single U-Groove, the second Figure had a dimension of $T \leq \frac{1}{2}$ in [12 mm] instead of $T > \frac{1}{2}$ in [12 mm]. See corrected Figure.

Notes:
2. B = Locate notch in HAZ when CVNs in the HAZ are specified.
3. The Engineer may specify a notch location a specific distance from the fusion line in lieu of location B.

Figure 6.28—CVN Test Specimen Locations (see 6.27.1)
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

<table>
<thead>
<tr>
<th>Shank Diameter (C)</th>
<th>Length Tolerances (L)</th>
<th>Head Diameter (H)</th>
<th>Minimum Head Height (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8</td>
<td>±0.010 – 0.010</td>
<td>3/4 ± 0.010</td>
<td>9/32</td>
</tr>
<tr>
<td>1/2</td>
<td>±0.010 – 0.010</td>
<td>1 ± 0.010</td>
<td>9/32</td>
</tr>
<tr>
<td>5/8</td>
<td>±0.010 – 0.010</td>
<td>1-1/4 ± 0.010</td>
<td>9/32</td>
</tr>
<tr>
<td>3/4</td>
<td>±0.015 – 0.015</td>
<td>1-1/4 ± 0.010</td>
<td>3/8</td>
</tr>
<tr>
<td>7/8</td>
<td>±0.015 – 0.015</td>
<td>1-3/8 ± 0.010</td>
<td>3/8</td>
</tr>
<tr>
<td>1</td>
<td>±0.020 – 0.020</td>
<td>1-5/8 ± 0.010</td>
<td>1/2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shank Diameter (C)</th>
<th>Length Tolerances (L)</th>
<th>Head Diameter (H)</th>
<th>Minimum Head Height (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>±0.25 – 0.25</td>
<td>19 ± 0.40</td>
<td>7.1</td>
</tr>
<tr>
<td>13</td>
<td>±0.25 – 0.25</td>
<td>25 ± 0.40</td>
<td>7.1</td>
</tr>
<tr>
<td>16</td>
<td>±0.25 – 0.25</td>
<td>32 ± 0.40</td>
<td>7.1</td>
</tr>
<tr>
<td>19</td>
<td>±0.40 – 0.40</td>
<td>32 ± 0.40</td>
<td>9.5</td>
</tr>
<tr>
<td>22</td>
<td>±0.40 – 0.40</td>
<td>35 ± 0.40</td>
<td>9.5</td>
</tr>
<tr>
<td>25</td>
<td>±0.40 – 0.40</td>
<td>41 ± 0.40</td>
<td>12.7</td>
</tr>
</tbody>
</table>

**Figure 9.1—Dimension and Tolerances of Standard-Type Headed Studs (see 9.2.1)**

Page 286, Clause 10.5.5

- First paragraph after the equations, replace Q2 with Θ2.

- Replace “Electrode minimum specified tensile strength = 60-70 ksi” with

**Electrode minimum specified tensile strength = 60 – 70 ksi**

<table>
<thead>
<tr>
<th>Type</th>
<th>ASD</th>
<th>LRFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>E60XX and E70XX—</td>
<td>1.35</td>
<td>1.5</td>
</tr>
<tr>
<td>Higher strengths—</td>
<td>1.60</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Page 287, Clause 10.9.1

- Replace the reference to “Figure 5.1” with “Figure 5.2”.

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)
Page 290, Clause 10.16.1, second paragraph, second sentence.
- Replace the reference “6.17.1.2” with “6.17”.

Page 291, Clause 10.16.2
- Replace the first sentence with “Tack welder qualification shall qualify for tubular thickness greater than or equal to 1/8 in [3 mm] and all diameters, but does not include CJP butt joints and T-, Y-, and K-connections welded from one side.”

Page, 292, Clause 10.21.1.1(f)
- Replace “1/4 in [4 mm]” with “1/4 in [6 mm]”

Page 305, Table 10.8 entitled “WPS Qualification—Production Welding Positions Qualified by Plate, Pipe, and Box Tube Tests”
- In the column “Weld Type” insert a horizontal line between “CJP Groove” and “Fillet”

Page 305, Table 10.8 entitled “WPS Qualification—Production Welding Positions Qualified by Plate, Pipe, and Box Tube Tests” footnote c is missing the word “Figure” and footnote g has the wrong references.
- Footnote c should read “For production joints of CJP T-, Y-, and K-connections that conform to either Figure 10.9, 10.10, or 10.11 and Table 10.7, use Figure 10.20 detail for testing. For other production joints, see 10.14.4.1.”
- Footnote g should read “Limited to prequalification joint details (see 5.4.1 and 5.4).”

Page 309, Table 10.12 entitled “Welder and Welding Operator Qualification—Production Welding Positions Qualified by Pipe and Box Tube Tests (see 10.16.1)
- A missing return for “Test Positions” has 2Gf and 5Gf incorrectly on the same line.
- Footnote f references the incorrect Figures. The referenced Figures should be Figure 10.17(A), Figure 10.17(A), Figure 10.17(B), respectively. See corrected Table and Footnote f.
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

A missing return for “Test Positions” has 2G\(^f\) and 5G\(^f\) incorrectly on the same line.

Footnote \(f\) references the incorrect Figures. The referenced Figures should be Figure 10.17(A), Figure 10.17(A), Figure 10.17(B), respectively. See corrected Table and Footnote \(f\).

### Table 10.12
Welder and Welding Operator Qualification—Production Welding Positions Qualified by Pipe and Box Tube Tests (see 10.16.1)

<table>
<thead>
<tr>
<th>Weld Type</th>
<th>Test Positions(^a)</th>
<th>Qualification Test</th>
<th>Production Plate Welding Qualified</th>
<th>Production Pipe Welding Qualified</th>
<th>Production Box Tube Welding Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groove(^e) (Pipe or Box)</td>
<td>1G Rotated(^d) \n 2G(^f) \n 5G(^f) \n 6G(^f) \n (2G + 5G)(^f)</td>
<td>Groove CJP Groove PJP Fillet(^b)</td>
<td>Butt Joint CJP(^c) PJP(^d) CJP(^e) PJP(^d) Fillet(^b) Butt Joint CJP(^e) PJP(^d) CJP(^e) PJP(^d) Fillet(^b)</td>
<td>Butt Joint CJP(^e) PJP(^d) CJP(^e) PJP(^d) Fillet(^b) Butt Joint CJP(^e) PJP(^d) CJP(^e) PJP(^d) Fillet(^b)</td>
<td>Butt Joint CJP(^e) PJP(^d) CJP(^e) PJP(^d) Fillet(^b) Butt Joint CJP(^e) PJP(^d) CJP(^e) PJP(^d) Fillet(^b)</td>
</tr>
<tr>
<td>TUBULAR Pipe Fillet</td>
<td>1F Rotated \n 2F Rotated \n 4F \n 5F</td>
<td>All All All All All All All All All</td>
<td>All(^f) All All All All All All All All All</td>
<td>All(^f) All All All All All All All All All</td>
<td>All(^f) All All All All All All All All All</td>
</tr>
</tbody>
</table>

CJP—Complete Joint Penetration
PJP—Partial Joint Penetration
\(^a\) See Figures 10.12 and 10.13.
\(^b\) See 10.14 for dihedral angle restrictions for tubular T-, Y-, K-connections.
\(^c\) Qualification using box tubing (Figure 10.20) also qualifies welding pipe equal to or greater than 24 in [600 mm] in diameter.
\(^d\) Not qualified for welds having groove angles less than 30° (see 10.14.4.2).
\(^e\) Groove weld qualification shall also qualify plug and slot welds for the test positions indicated.
\(^f\) Qualification for welding production joints without backing or backgouging shall require using the Figure 10.17(A) joint detail. For welding production joints with backing or backgouging, either Figure 10.17(A) or Figure 10.17(B) joint detail may be used for qualification.
\(^g\) Not qualified for joints welded from one side without backing, or welded from two sides without backgouging.

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

*(Errata Notice: 12/09/2021)*

---

**Table 10.13 (Continued)**  
Welder and Welding Operator Qualification-Number and Type of Specimens and Range of Thickness and Diameter Qualified (Dimensions in Millimeters) (see 10.16)

Tests on Pipe or Tubing.

<table>
<thead>
<tr>
<th>Production CJP Groove Butt Joints</th>
<th>Number of Specimens</th>
<th>Qualified Dimensions</th>
<th>Nominal Plate, Pipe or Tube Wall Thickness Qualified, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1G and 2G Positions Only</td>
<td>5G, 6G, and 6GR Positions Only</td>
<td>Nominal Pipe or Tube Size Qualified, mm</td>
</tr>
<tr>
<td>Type of Test Weld</td>
<td>Nominal Size of Test Pipe, mm</td>
<td>Nominal Test Thickness, mm</td>
<td>Face Bends</td>
</tr>
<tr>
<td>Groove ≤ 100</td>
<td>Unlimited</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Groove &gt; 100 ≤ 10</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Groove &gt; 100 &gt; 10</td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Qualified Dimensions

<table>
<thead>
<tr>
<th>Production T-, Y-, or K-Connection CJP Groove Welds</th>
<th>Number of Specimens</th>
<th>Nominal Pipe or Tube Size Qualified, mm</th>
<th>Nominal Wall or Plate Thickness Qualified, mm</th>
<th>Dihedral Angles Qualified,</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1G and 2G Positions Only</td>
<td>5G, 6G, and 6GR Positions Only</td>
<td>Nominal Pipe or Tube Size Qualified, mm</td>
<td>Nominal Plate, Pipe or Tube Wall Thickness Qualified, mm</td>
</tr>
<tr>
<td>Type of Test Weld</td>
<td>Nominal Size of Test Pipe, mm</td>
<td>Nominal Test Thickness, mm</td>
<td>Side Bends</td>
<td>Macroetch</td>
</tr>
<tr>
<td>Pipe Groove (Fig. 10.20)</td>
<td>≥ 150 O.D.</td>
<td>≥ 12</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Pipe Groove (Fig. 10.21)</td>
<td>&lt; 100 O.D.</td>
<td>≥ 5</td>
<td></td>
<td>Footnote h</td>
</tr>
<tr>
<td>Box Groove (Fig. 10.22)</td>
<td>Unlimited</td>
<td>≥ 12</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Qualified Dimensions

<table>
<thead>
<tr>
<th>Production T-, Y-, or K-Connection Fillet Welds</th>
<th>Number of Specimens</th>
<th>Nominal Pipe or Tube Size Qualified, mm</th>
<th>Nominal Wall or Plate Thickness Qualified, mm</th>
<th>Dihedral Angles Qualified,</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1G and 2G Positions Only</td>
<td>5G, 6G, and 6GR Positions Only</td>
<td>Nominal Pipe or Tube Size Qualified, mm</td>
<td>Nominal Plate, Pipe or Tube Wall Thickness Qualified, mm</td>
</tr>
<tr>
<td>Type of Test Weld</td>
<td>Nominal Size of Test Pipe, D</td>
<td>Nominal Test Thickness, mm</td>
<td>Fillet Weld Break</td>
<td>Macroetch</td>
</tr>
<tr>
<td>5G position (Groove)</td>
<td>Unlimited</td>
<td>≥ 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option 1 — Fillet (Fig. 6.25)</td>
<td></td>
<td>≥ 12</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Option 2 — Fillet (Fig. 6.22)</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option 3 — Fillet (Fig. 10.16)</td>
<td></td>
<td>≥ 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* See Table 10.12 for appropriate groove details.

---

Page 310, Table 10.13 (millimeters) for Production T-, Y-, K-Connection Fillet Welds, Type of Test Weld:

- Replace “Option 1-Fillet (Figure 10.21)” with “Option 1-Fillet (Figure 6.25)”
- Replace Option 1-Fillet (Figure 10.18)” with “Option 1-Fillet (Figure 6.22)”
All welds shall be visually inspected (see 6.23.1).
Also qualifies for welding any fillet or PIP weld size on any thickness of plate, pipe or tubing.
Radiographic examination of the test pipe or tubing may be made in lieu of the bend tests (see 6.17.1.1).
For 10 mm wall thickness, a side-bend test may be substituted for each of the required face- and root-bend tests.
The minimum pipe size qualified shall be 1/2 the test diameter or 100 mm, whichever is greater.
For dihedral angles < 30°, see 10.18.1; except 6GR test not required.
Two root and two face bends.
Two plates required, each subject to the test specimen requirements described. One plate shall be welded in the 3F position and the other in the 4F position.

Page 321, Figure 10.5
- Replace the “E” in the Table with “S” (three places)
- Replace “E = 1.07 t” with “S = 1.07t” (eliminated the space between the 1.07 and t)
See corrected Figure.

<table>
<thead>
<tr>
<th>MIN L FOR</th>
<th>HEEL &lt; 60°</th>
<th>SIDE ≤ 100°</th>
<th>SIDE 100-100°</th>
<th>SIDE 110-120°</th>
<th>TOE &gt; 120°</th>
</tr>
</thead>
<tbody>
<tr>
<td>S = 0.7t</td>
<td>1.5t</td>
<td>t</td>
<td>1.1t</td>
<td>1.2t</td>
<td>1t</td>
</tr>
<tr>
<td>S = t</td>
<td>1.5t</td>
<td>1.4t</td>
<td>1.6t</td>
<td>1.8t</td>
<td>1.4t</td>
</tr>
<tr>
<td>S = 1.07t</td>
<td>LARGER OF</td>
<td>1.5t OR 1.4t</td>
<td>1.75t</td>
<td>2.0t</td>
<td>FULL BEVEL</td>
</tr>
<tr>
<td></td>
<td>1.5t</td>
<td></td>
<td></td>
<td></td>
<td>BEVEL 60°</td>
</tr>
</tbody>
</table>

Notes:
1. t = thickness of thinner part.
2. L = minimum size (see 10.2.1 which may require increased weld size for combinations other than 36 ksi [250 MPa] base metal and 70 ksi [485 MPa] electrodes).
3. Root opening 0 in to 3/16 in [5 mm] (see 7.21).
4. Not prequalified for φ < 30°. For φ < 60°, the Z loss dimensions in Table 10.5 apply. See Table 10.12 for welder qualification position requirements.
5. See 10.5.2.2 for limitations on β = d/D.
6. Ψ = dihedral angle.

Figure 10.5—Fillet Welded Prequalified Tubular Joints Made by SMAW, GMAW, and FCAW (see 10.8.1)
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)
O3. UT Procedure

All UT shall be performed in conformance with a written procedure which shall contain a minimum of the following information regarding the UT method and examination techniques:

(1) The types of weld joint configurations to be examined
(2) Acceptance criteria for the types of weld joints to be examined (additional criteria when the acceptance criteria of Clause 8, Part C are not invoked by the Engineer)
(3) Type of UT equipment (manufacturer, model number, serial number)
(4) Type of transducer, including frequency, size, shape, angle and type of wedge if it is different than that in 8.21.6 or 8.21.7
(5) Scanning surface preparation and couplant requirements
(6) Type of calibration test block(s) with the appropriate reference reflectors
(7) Method of calibration and calibration interval
(8) Method for examining for laminations prior to weld evaluation if the method is different from 8.25.5
(9) Weld root index marking and other preliminary weld marking methods
(10) Scanning pattern and sensitivity requirements
(11) Methods for determining discontinuity location height, length and amplitude level
(12) Transfer correction methods for surface roughness, surface coatings and part curvature, if applicable
(13) Method of verifying the accuracy of the completed examination. This verification may be by re-UT by others (audits), other NDE methods, macroetch specimen, gouging or other visual techniques as may be approved by the Engineer
(14) Documentation requirements for examinations, including any verifications performed
(15) Documentation retention requirements.

The written procedure shall be qualified by testing mock-up welds which represent the production welds to be examined. The mock-up welds shall be sectioned, properly examined, and documented to prove satisfactory performance of the procedure. The procedure and all qualifying data shall be approved by an individual who has been certified Level III in UT by testing in conformance with ASNT SNT-TC–1A and who is further qualified by experience in examination of the specific types of weld joints to be examined.

Pages 476 and 477 bottom right side of the page,
-Replace reference “L-9” with “P-9”

Page 481, Form P-10 Note 3:
-Replace “e3qual” with “equal”

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)
The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)
Page 628, Index term “nondestructive testing, quality control”  
-Replace “11.6.2” with “11.7.2”

Page 628, Index term “Partial Joint Penetration (PJP) groove welds, allowable stress ranges”  
-Replace “C-11.4.2” with “C-11.5.2”

Page 628, Index term “peening”  
-Replace “C-11.4.1” with “C-11.5.1”

Page 629, Index term “quality control tests”  
-Replace “11.6, C-11.6” with “11.7, C-11.7”

Page 630, Index term “repairs, base metal”  
-Replace “11.2, C-11.2” with “11.3, C-11.3”

Page 630, Index term “repairs, design for”  
-Replace “11.3, C-11.3” with “11.4, C-11.4”

Page 630, Index term “repairs, existing structures”  
-Replace “11.6, C-11.6” with “11.7, C-11.7”

Page 630, Index term “replacement, for strengthening and repair”  
-Replace “11.3.4” with “11.4.4”

Page 630, Index term “restoration, for strengthening and repair”  
-Replace reference “11.3.4” with “11.4.4”

Page 630, Index term “sequencing of welds”  
-Replace “11.5.6, C-11.5.6” with “11.6.6, C-11.6.6”

Page 631, Index term “strengthening procedures, existing structures”  
-Replace “11.6, C-11.6” with “11.7, C-11.7”

Page 631, Index term “stresses, analysis, for strengthening and repair”  
-Replace “11.3.2” with “11.4.2”

Page 632, Index term “temperature requirements, minimum ambient temperature”  
-Replace “C-11.3” with “C-11.6.5”

Page 632, Index term “TIG dressing”  
-Replace “Fig. C-11.3 to Fig. C-11.6” with “Fig. C-11.8”

The purpose of an errata sheet is to notify the public that a published standard has a typographical error. Errata sheets provide a list of errors and their corrections on an AWS standard introduced during the publication stages.

(Errata Notice: 12/09/2021)