

**Table 6.1**  
**Visual Inspection Acceptance Criteria (see 6.9)**

Discontinuity Category and Inspection Criteria	Statically Loaded Nontubular Connections	Cyclically Loaded Nontubular Connections	Tubular Connections (All Loads)								
<b>(1) Crack Prohibition</b> Any crack shall be unacceptable, regardless of size or location.	X	X	X								
<b>(2) Weld/Base-Metal Fusion</b> Complete fusion shall exist between adjacent layers of weld metal and between weld metal and base metal.	X	X	X								
<b>(3) Crater Cross Section</b> All craters shall be filled to provide the specified weld size, except for the ends of intermittent fillet welds outside of their effective length.	X	X	X								
<b>(4) Weld Profiles</b> Weld profiles shall be in conformance with 5.24.	X	X	X								
<b>(5) Time of Inspection</b> Visual inspection of welds in all steels may begin immediately after the completed welds have cooled to ambient temperature. Acceptance criteria for ASTM A 514, A 517, and A 709 Grade 100 and 100 W steels shall be based on visual inspection performed not less than 48 hours after completion of the weld.	X	X	X								
<b>(6) Undersized Welds</b> The size of a fillet weld in any continuous weld may be less than the specified nominal size (L) without correction by the following amounts (U):  <table style="margin-left: 20px; border: none;"> <tr> <td style="text-align: center;">L, specified nominal weld size, in [mm]</td> <td style="text-align: center;">U, allowable decrease from L, in [mm]</td> </tr> <tr> <td style="text-align: center;">≤ 3/16 [5]</td> <td style="text-align: center;">≤ 1/16 [2]</td> </tr> <tr> <td style="text-align: center;">1/4 [6]</td> <td style="text-align: center;">≤ 3/32 [2.5]</td> </tr> <tr> <td style="text-align: center;">≥ 5/16 [8]</td> <td style="text-align: center;">≤ 1/8 [3]</td> </tr> </table> In all cases, the undersize portion of the weld shall not exceed 10% of the weld length. On web-to-flange welds on girders, underrun shall be prohibited at the ends for a length equal to twice the width of the flange.	L, specified nominal weld size, in [mm]	U, allowable decrease from L, in [mm]	≤ 3/16 [5]	≤ 1/16 [2]	1/4 [6]	≤ 3/32 [2.5]	≥ 5/16 [8]	≤ 1/8 [3]	X	X	X
L, specified nominal weld size, in [mm]	U, allowable decrease from L, in [mm]										
≤ 3/16 [5]	≤ 1/16 [2]										
1/4 [6]	≤ 3/32 [2.5]										
≥ 5/16 [8]	≤ 1/8 [3]										
<b>(7) Undercut</b> (A) For material less than 1 in [25 mm] thick, undercut shall not exceed 1/32 in [1 mm], with the following exception: undercut shall not exceed 1/16 in [2 mm] for any accumulated length up to 2 in [50 mm] in any 12 in [300 mm]. For material equal to or greater than 1 in [25 mm] thick, undercut shall not exceed 1/16 in [2 mm] for any length of weld. (B) In primary members, undercut shall be no more than 0.01 in [0.25 mm] deep when the weld is transverse to tensile stress under any design loading condition. Undercut shall be no more than 1/32 in [1 mm] deep for all other cases.	X										
<b>(8) Porosity</b> (A) CJP groove welds in butt joints transverse to the direction of computed tensile stress shall have no visible piping porosity. For all other groove welds and for fillet welds, the sum of the visible piping porosity 1/32 in [1 mm] or greater in diameter shall not exceed 3/8 in [10 mm] in any linear inch of weld and shall not exceed 3/4 in [20 mm] in any 12 in [300 mm] length of weld. (B) The frequency of piping porosity in fillet welds shall not exceed one in each 4 in [100 mm] of weld length and the maximum diameter shall not exceed 3/32 in [2.5 mm]. Exception: for fillet welds connecting stiffeners to web, the sum of the diameters of piping porosity shall not exceed 3/8 in [10 mm] in any linear inch of weld and shall not exceed 3/4 in [20 mm] in any 12 in [300 mm] length of weld. (C) CJP groove welds in butt joints transverse to the direction of computed tensile stress shall have no piping porosity. For all other groove welds, the frequency of piping porosity shall not exceed one in 4 in [100 mm] of length and the maximum diameter shall not exceed 3/32 in [2.5 mm].	X										
		X	X								
		X	X								

Note: An "X" indicates applicability for the connection type; a shaded area indicates non-applicability.