

Part I

APPENDIX B. SUPPLEMENTAL WELDER QUALIFICATION TESTING PROCEDURE

Scope

This appendix supplements Part I, Section 3.3.1 and provides for qualification testing of welders required to perform critical welds in steel moment frames designed for seismic applications.

Test Plate

The test plate thickness shall be 1-1/2 inch. The web plate thickness shall be 1 inch. The access hole and groove angle shall be as indicated in Figure B-1. The groove angle shall be 30°, with a root opening of 3/8 inch. Steel backing shall be 3/8 inch thick and at least 1 inch wide. Weld tabs 3/8 inch thick and 1-1/2 inches long shall be attached at each end of the joint. The column plate, representing the column flange and tack welded to the test plate, shall be a minimum 3/8 inch thick, and shall be separated from the test plate by 1/4 inch. The length of test weld shall be 12 inches minimum, not including weld tabs. See Figure B-1.

Welding Operation

The welder shall fit and tack weld the test assembly from prefabricated parts, and shall perform all the groove welding. Backgouging, cutting, tack weld removal, and grinding operations listed in this paragraph may be performed by another welder. Following welding, the backing bar shall be removed by air carbon arc cutting, the joint root backgouged to solid weld metal, and the root backwelded until flush. The weld tabs shall be removed by thermal cutting or air carbon arc cutting, then ground smooth and flush with the test plate. The vertical restriction plate and web shall then be removed, tack welds ground to a depth 1/8 inch below the surface, and the weld surface ground smooth. Should another procedure be used on the project for the removal of the backing bar or weld tabs, then that procedure shall be used for this testing.

Testing

Either radiographic testing (RT) in accordance with *AWS D1.1*, Section 4.30.3 or side-bend tests in accordance with this section may be performed. When side-bend tests are to be performed, the flat test plate shall be cut to prepare three transverse side-bend tests, with each test specimen 3/4 inch thick. Two side-bend specimens shall be from near the middle of the joint at the web, and one side-bend specimen shall be from near either end of the joint. Testing shall be in accordance with *AWS B4.0-92, Standard Methods for Mechanical testing of Welds*, Section A1.

Alternatively, radiographic testing may be performed for the full length of the weld in accordance with *AWS D1.1*, Section 4.30.3.

Acceptance

All three test specimens must pass the transverse side-bend tests. If radiographic testing is used, the specimen must satisfy *AWS D1.1*, Section 4.30.3.1.

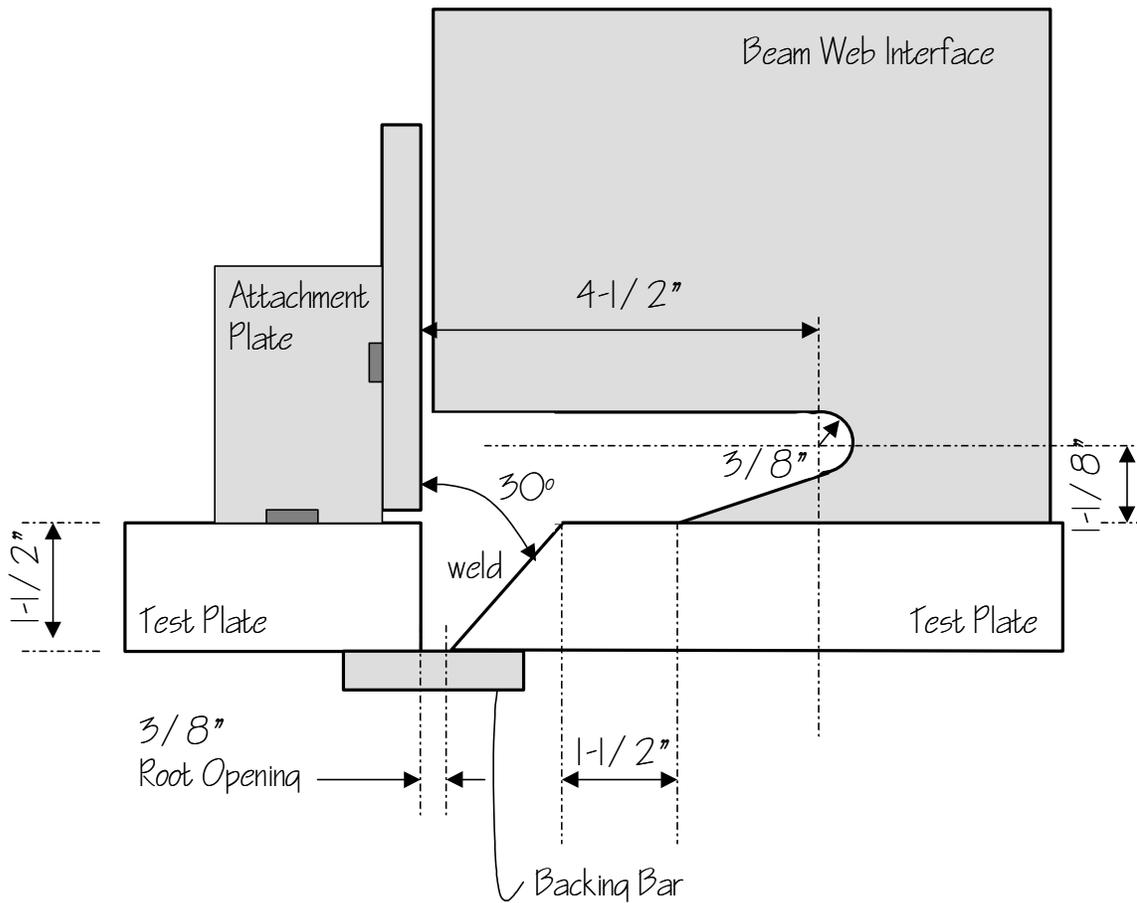


Figure B-1 Supplemental Welder Qualification Test Assembly