

Use this checklist to evaluate any welder qualifications prior to performing field welding piling or expansion joints. For other field welding, see Notes section below.

Check	Review Item
①	<p>Name: Verify welder’s certification with a separate picture ID at time of welding.</p>
②	<p>Acceptable Documents: Documentation must match applicable welding procedure used in current welding situation. Required documents include:</p> <ul style="list-style-type: none"> • Welder and Welding Qualification Test Record • Welding continuity records proving the welding process has been performed: <ul style="list-style-type: none"> ○ If the Welder and Welding Qualification Test Record has a CWI stamp that is dated within the last six months, no further documentation is needed. ○ If older than six consecutive months, a continuity record is needed. At least one entry on the continuity record is needed for every six consecutive months verifying the use of the welding process. Example: test date ten years ago = 19 continuity records (two continuity records per year minus the original six months). <p>③ Welding continuity records or performance record must include the following information:</p> <ul style="list-style-type: none"> • Date, from-to, welding process was performed • Welding process performed • Employer • Supervisor signature • Date tested
④	<p>Welding Process: The process the qualification test was taken for. The welder is only qualified for that process listed on the test.</p> <ul style="list-style-type: none"> • SMAW (stick welding) = typical requirement in most standard details (pile splices, expansion joints, etc.) • FCAW (wire feed) = permitted with proper qualification and Engineer’s Approval.
⑤	<p>Backing: This includes either a back-up ring, plate, or a weld performed from two sides where the weld metal is the backing. Testing with backing qualifies the welder to weld with a backer in place only. Tests done without backing qualify the welder to weld with or without a backer.</p> <p>Typically, H-pile can be without backing and CIP pile is with backing. Backing is not required for welded field splices in expansion joints.</p>

Check	Review Item
⑥	<p>Base Metal: This is the metal used for the test and belongs to a group of base metals listed in the AWS D1.1 Welding Code. The welder is qualified to weld all base metals listed in D1.1 when they test with a listed base metal. The most common base metal used in qualification tests is A36 and permits the welder to weld on the following materials listed Spec Book:</p> <ul style="list-style-type: none"> • CIP Piling = ASTM A252 Grade 3 • H-piles = ASTM A572 Grade 50 • Joints = ASTM A709
⑦	<p>Test Plate Thickness: Test will either be done on 1-inch material or 3/8-inch. If taken on 1-inch material the welder is qualified for all material thicknesses, testing on 3/8-inch material only qualifies the welder to weld up to and including 3/4-inch material.</p>
⑧	<p>Position Tested: This is the position the weld test was performed. (Plate tests)</p> <ul style="list-style-type: none"> • Permitted positions for pile splice with piling driven in ground: 2G, 3G • Permitted positions for pile splice laying on ground: call for assistance, see Notes section • Permitted positions for expansion joint splices: 3G • Permitted position for studs hand-welded to a horizontal flat plate: 1F <p>Testing on plate qualifies the welder to weld on plate (H-piles and Joints) and pipe over 24 inches in diameter. To weld CIP Piling with a diameter of 24 inches or less, the welder must be qualified for base metal diameter of 24 inches or less for a groove weld procedure.</p> <p><i>For reference:</i></p> <p>1G- Flat Groove Weld / 1F Flat Fillet Weld – Flat is “F” 2G- Horizontal Groove Weld / 2F Horizontal Fillet Weld – Horizontal is “H” 3G- Vertical Groove Weld / 3F Vertical Fillet Weld – Vertical is “V” 4G- Overhead Groove Weld / 4F Overhead Fillet Weld – Overhead is “OH”</p>
⑨	<p>Electrodes: An approved electrode storage/usage plan is required for E70XX per AWS D1.1. No storage/usage requirements for E60XX.</p>
	<p>Notes: If any of the information above is missing or does not match the requirements, it is possible the welder is not qualified to perform the weld or more information is necessary. If further guidance is needed during review of Welder Qualification Records or field welding of other elements not covered within this checklist is necessary, please contact Andy Fritz at the Bridge Office.</p>

Last updated: 11/17/2022

Welder Qualification Test Record

Name: (1) - Verify with photo ID _____ ID: _____ 5

(2) Supporting Welding Procedure Specification (WPS): SMAW-MS-1

Date Welded: May 24, 2012

Variables

Process

(4) Type: Shielded Metal Arc Welding
Electrode: Single
(5) Backing, Yes: X No: _____
Current/Polarity: DCEP

Position

Position tested: Vertical
Vertical Progression: Up

Base Metals

(6) Material Specification: A36 to A36
(7) Plate Thickness: 1"
Groove angle: 45°

Filler Metals

AWS Specification: AWS A5.1
(9) AWS Classification: E7018
ASME F Number: F4

Shielding Gas


Composition: Not applicable

(8) Position Qualified: Flat, horizontal and vertical positions. Groove and fillet welds. (1G, 2G, 3G, 1F, 2F, 3F)

Thickness Range Qualified: Grooves and fillets 1/8" through unlimited, plates and structural shapes.

Visual Inspection Results Acceptable: Yes <input checked="" type="checkbox"/> No _____
Guided Bend Test Results Type: 3G - Side Bend 1: Satisfactory Type: 3G - Side Bend 2: Satisfactory

Weld test witnessed by: SIGNATURE


 Name
 CWI 89060641
 QC1 EXP. 6/1/2013
DAA

Test Specimens Prepared and Inspected by:
By: PRINTED NAME _____ Date: June 06, 2012

We, the undersigned, certify that the statements in this record are correct and that the test weld, was prepared, welded and tested in accordance with the requirements of Clause 4, Part C, AWS D1.1, 2010 Structural Welding Code - Steel.

Authorized By: SIGNATURE _____ Date: 6-14-12

WELDER QUALIFICATION TEST RECORD

Name: Master (1) Identification No: _____
 Welding Procedure Specification No. UBC-SMAW 3G+4G (2) Date: **/**/**

L.J. SHOSTEN Training Center	Record Actual Values Used in Qualification	Qualification Range
Variables		
Process/Type(4)	SMAW (4)	
Electrode (single or multiple)	SINGLE	SMAW(4)
Current / Polarity	DCEP	
Position	3G+4G(8)	1,2,3,4G + 1,2,3,4F(8)
Weld Progression(8)	Vertical (Up)	Vertical (Up)
Backing (Yes or No)(5)	YES(5)	BACKING REQUIRED(5)
Material / Spec.(6)	A 36(6)	
Base Metal		
Thickness: (Plate)(7)		
Groove	0.375"(7)	0.125" TO 0.750"(7)
Fillet	NA	ALL
Thickness: (Pipe/tube)(7)		
Groove	N/A	0.125" TO 0.750"(7)
Fillet	N/A	ALL
Diameter: (Pipe)(8)		
Groove	N/A	24" and OVER(8)
Fillet	N/A	ALL
Filler Metal		
Spec. No.(9)	AWS A 5.1	
Class	E 7018, 1/8"(9)	
F-No.	F-4	F1, F2, F3,F4
Gas/Flux type	N/A	
Other	N/A	N/A

VISUAL INSPECTION					
Acceptable YES or NO <u>YES</u>					
Guided Bend Test Results					
	Type	Result		Type	Result
	3G FACE	ACCEPTABLE		4G FACE	ACCEPTABLE
	3G ROOT	ACCEPTABLE		4G ROOT	ACCEPTABLE
Fillet Test Results					
Apperance <u>N/A</u>		Fillet Size <u>N/A</u>			
Fracture Test Root Penetration <u>N/A</u>		Macroetch <u>N/A</u>			
(Describe the location, nature, and the size or tearing of the specimen.)					

Inspected by(2) **Dante Vitullo CWI**
 Organization: **Carpenters and Joiners Training Center** Date: **04/07/09**

RADIOGRAPHIC TEST RESULTS					
Film Identification					
Number	Results	Remarks	Number	Results	Remarks
N/A					

Interpreted by _____ Test Number _____
 Organization _____ Date _____

We, the undersigned, certify that the statements in tehis record are correct and that the test welds were prepared, welded, and tested in conformance with the requirements of Section 4 AWS D1.1/D1.1M, (2010) Stuctural Welding Code-Steel
 year

Manufaturer or Contractor: **Carpenters and Joiners Training Center** Authorized By(2) _____ Date: _____

Weld Bead Reference

A good weld bead will be straight with uniform waves with no slag, cracking or holes as seen here.



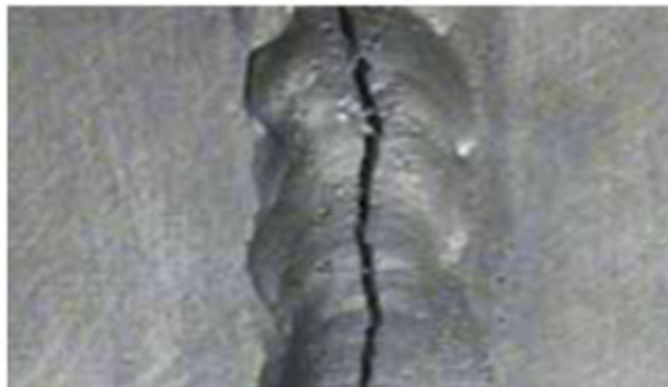
Below are examples of a bad weld bead and need to be addressed and is NOT acceptable.



Porosity



Inclusion



Cracks

Weld Bead Reference

Below are examples of a bad weld bead and need to be addressed and is NOT acceptable.



Under Filling



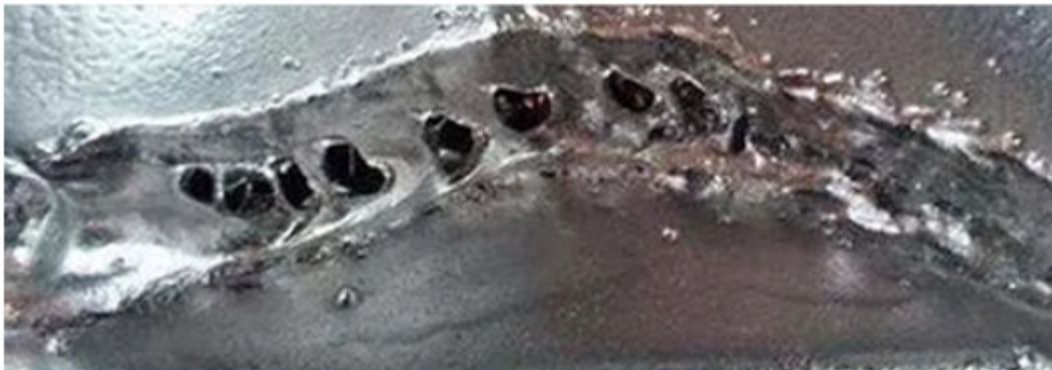
Spatter



Incomplete Penetration



Incomplete Fusion



Slag Inclusions

AWS D1.1, General – states the performance qualification test required by this code are specifically devised test to determine a welders' welding operators or tack welders' ability to produce sound welds.

Only AWS certified welders allowed to perform the welding for permanent work.

Additional items:

- 1) Check that the welding equipment is in good working condition.
- 2) Check that welding surfaces are clean and free of rust.
 - a. If surface is galvanized or painted, the coating must be removed prior to welding. A repair procedure should be provided prior to welding.
- 3) Check that base metal minimum temperature is met.
- 4) Check the base metal surface preparation required by plan.
 - a. CIP Piling (B201): Back-up ring present, beveled pile shell
 - b. Steel H Piles (B202): Beveled pile steel
 - c. Expansion Joint (5-397.627 and 5-397.628): Groove extrusion steel

If deviation from E60XX electrode in the field is requested, E7018 or FCAW (wire feed) the following must be adhered to:

- Submit a weld procedure specification to the engineer for approval before welding is performed.
 - The 7018 and FCAW proposal is acceptable for use with the following requirements:
 - Provide operational and QC procedures for proper welding consumable storage and exposure.
 - Provide WPS compliant to AWS D1.1.
 - Provide QC procedure for welding operations ensuring proper joint details, joint cleanliness, preheating, WPS implementation, and inspection.
 - Provide Welder Qualifications compliant to AWS D1.1 for material, process, and position.
- 7018 rods - Dry the electrodes for at least 2 hours at a temperature between 450°F and 500°F prior to use. Redry electrodes if not used within 4 hours. Do not redry electrodes more than one time. Do not use electrodes which have dried out and cracked, or those which have been wet. Store all low hydrogen electrodes in suitable ovens held at a temperature of at least 250°F.
- Do not weld when surfaces are wet or exposed to rain, snow, or wind.
- Remove any moisture from fog, dew, etc. that is present before welding.