

2024 Pipe Welding Competition

FACT SHEET

Project Manager

Joel Dutton, TD Industries

For questions related specifically to the pipe welding competition, contact Joel Dutton at joel.dutton@tdindustries.com or (281) 460-2670. For all event questions, contact Jarrell Jackson, National Craft Championships director, at (202) 595-1789 or jackson@abc.org.

Specific Competition Eligibility

The pipe welding practical performance test includes one welding process: SMAW. A welder who is deemed certified by his/her employer in concurrence with the AWS QC7-93 Supplement F performance test description F2 or any other nationally recognized code in which the welder has achieved journey-level status cannot be certified longer than six months prior to the date of the National Craft Championships as a pipe welder in the SMAW only process.

Please note: The AWS QC7-93 Supplement F performance test description F2 is a pre-qualified welding procedure, qualified and written by the American Welding Society. This welding procedure is used in the ABC National Craft Championships practical performance test. The AWS QC7-93 Supplement F performance test description F2 also describes in detail the restricted weld test jig required by AWS and used in the ABC National Craft Championships pipe welding practical performance test.

Online Exam

The online exam must be completed before competitors arrive on site, at a local NCCER Accredited Training Sponsor or Assessment Center. Accommodations will be made for extreme circumstances with prior approval of the NCC director. All competitors must sit for the online exam or face disqualification from the NCC. The online exam continues to make up 25% of one's overall competition score. It is the responsibility of the sponsor organization to schedule test sessions directly with NCCER. Test registration and guidelines will be available in January 2024.

Practical Performance Test Description

Each competitor will perform two tasks, one in the 2G restricted position and one in the 5G restricted position, utilizing knowledge and skills applicable to pipe welding and weldment assembly. Welding in the 5G position will be done with uphill progression. All welding will be performed using E-6010 electrodes for root pass and E-7018 for fill and cap on 5-inch sch.80 (0.375-inch wall) pipe.

Welding Task: Pipe Welding

Each competitor will be issued two pipe coupons for each portion of the test. The task will be judged in the 2G and 5G position. The AWS QC7-93 Supplement F performance test description F2 will be used for judging the pipe welding practical performance test. The project manager will inform the competitors regarding the steps they expect the competitors to follow during the procedure and answer any questions on the day of the competitor practical performance test site orientation as well as the morning of the test. Each completed test will be stenciled with the competitor's number by the judge(s) upon completion of the weld or if time runs out. The finished coupon cannot be removed from their individual work areas until the judges and the project manager give approval.

Lastly, safety, work planning and housekeeping will be judged as a high priority during the test as well as disassembly/cleanup. These are also identified on the following pipe welding sample score sheet.

Knowledge and Skills Required

The knowledge and skills for this competition and the written exam are based on the following modules of the NCCER welding curriculum:

- Weld Quality #29106-09
- Joint Fit-Up and Alignment #29110-09
- Base Metal Preparation #29105-09
- Open Root Pipe Welds #29301-10
- SMAW Beads and Fillet Welds #29109-09
- SMAW Electrodes #29108-09
- AWS QC7-93 Supplement F performance test description F2 will be used and can be requested for review (excluding thermal cutting criteria) from AWS, P.O. Box 351040, Miami, FL 33135. The supplemental F is used for pipe performance test only. Each competitor will perform the pipe welding procedure equally.
- SMAW Equipment and Setup #29107-09
- Welding Safety #29101-09
- Application of OSHA Safety Standards
- Core Curriculum

Tools Required

Each competitor should bring only the tools listed below to the competition. Tools may be examined prior to the practical performance test. Tools that are not on this list will be stored and cannot be used until the competition has concluded. If a tool, necessary to complete the practical performance test, is not listed, the National Craft Championships Committee will provide it. If you use or prefer to use a self-darkening lens in your welding hood, be sure to bring either replacement batteries and/or lenses as these are not available. **“Pancake” style welding hoods or hoods where safety glasses can’t be worn underneath are NOT acceptable and are not allowed.**

- Appropriate 100% cotton, long-sleeve shirt
- Welding helmet with a minimum No. 10 filter lenses (Hard hat attachment hoods or head-mounted, ratchet-type welding hoods are acceptable)
- Leather gauntlet-type welding gloves (SMAW)
- Chipping hammer
- Hand brush C/S
- 6-inch or 9-inch channel-lock pliers
- 10-inch or 12-inch adjustable wrench
- 12-inch half-round file with handle
- 2 to 3 lb. hammer
- Leather work shoes or boots.

Optional items that are allowed but not required:

- Leather sleeves
- Leather rod pouch
- Flashlight (welder’s choice)
- Spacer for root opening

NCC-Furnished Tools/Equipment:

- 4 ½-inch angle grinder safe use and inspection requirements.
 - Guard must be in place and secured.
 - Handle must be in place.
 - Cord must be inspected prior to use and can’t be frayed or have exposed wires.
 - Grinder must be unplugged prior to removing and/or installing grinding discs or wire wheels.
- Fume extraction unit must be used while welding but can be turned off when no welding is taking place
- Face shield for grinding and buffing, approved hard hat and earplugs
- 4½-inch grinding discs and wire wheels
- Ear protection
- Safety glasses

- Hard hat
- Face shield and safety glasses must be properly worn while grinding and buffing
- Knee pads

Exceptions to the provided PPE, with prior approval from the respective project manager, are prescription glasses, which must be covered with the proper safety glasses required by OSHA.

Sample Score Sheet

The following sample score sheet is provided to give competitors an **example** of the criteria that may be included in the practical performance test. **However, this score sheet is only a sample and not intended to act as a study guide in preparation or to imply specific criteria that will be judged during the actual practical performance test.**

**ABC National Craft Championships
Pipe Welding Sample Score Sheet**

Judging Criteria	Competitor Identification Numbers						
	Maximum Points						
Fit up and tacks – 2G							
Root pass – 2G							
Fill passes – 2G							
Cap – overall appearance - 2G							
Fit up and tacks – 5G							
Root pass – 5G							
Fill passes – 5G							
Cap – overall appearance - 5G							
Quality of workmanship, proper use of tools and equipment							
Project disassembly							
Sub-Total							
Safety-housekeeping							
Use of PPE							
Use of power tools							
Sub-Total							
Total Score							