



2025 TIG (GTAW) Pipe Welding Competition

FACT SHEET

Project Manager

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For questions related specifically to the TIG (GTAW) pipe welding competition, contact Chris Henning, project manager, at (985)212-4153 or chenning@wearescpss.org. For all event questions, contact Jarrell Jackson, National Craft Championships director, at (202) 595-1789 or jackson@abc.org.

Specific Competition Eligibility

In this specific competition, the GTAW welding process is used for the practical performance test. 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 welder in the GTAW welding 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 for the practical performance test in the NCC. 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 NCC pipe welding practical performance test.

Written Exam

Competitors will have one (1) hour to complete the 50-question exam. Every competitor should thoroughly understand the craft in which he/she is registered. All exams/tests are based on the standardized craft training process. In addition to the knowledge and skills required for each competition, all competitors should have completed the NCCER Core Curriculum modules. All competitors must sit for the exam or face disqualification from the NCC. The written exam makes up 25% of one's overall competition score. ABC will provide pencils, scratch paper, and a calculator for mathematical problems (if necessary). Scientific/graphing calculators and loose notes are prohibited. No reference materials are permitted. *Please refer to the 2025 NCC Guidebook for more details.*

Practical Performance Test Description

Each competitor will complete three butt welds. In the A.M session of the competition, the competitor will receive two pre beveled sections of 3" schedule 40 carbon steel pipe and a matching 90 degree elbow. The competitor will tack a short section of pipe to both sides of the elbow and mount it to the table. One weld will be in the 2G position and the second in the 5G position. For the PM session, the competitor will receive one set of pre beveled 6" schedule 40 carbon steel pipe coupons to be welded in the 6G position. ER70s-6 wire will be utilized.

Welding Task: (GTAW) Pipe Welding

Each competitor will be issued all required materials as needed, only weld quality will be judged, The AWS – QC7-93 Supplemental F Performance Test description F2 will be used for judging the (GTAW) Pipe Welding Practical Performance Test. The project manager will inform the competitors regarding the steps competitors are to follow during the procedure, and answer any questions on the day of the test Site Orientation and 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 when the time limit is reached.

The finished coupon cannot be removed from their individual work areas until the judges and the Project Manager give approval.

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 (GTAW) 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 #29106-15
 - Joint Fit-Up and Alignment #29110-15
 - Base Metal Preparation #29105-15
 - GTAW Plate # 29208-15
 - GTAW Carbon Steel Pipe 29304-15
 - GTAW Equipment and Filler Metals #29207-09
 - Welding Safety #29101-09
 - Application of OSHA Safety Standards
 - Core Curriculum
- 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.

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 #10 filter lenses (Hard hat attachment hoods or head-mounted, ratchet-type welding hoods are acceptable)
- Leather premium-type heat protection TIG gloves (GTAW)
- Hand brush CS
- 6- or 9-inch Channellock pliers
- 10- or 12-inch adjustable wrench
- 12-inch half-round file with handle
- 2- to 3 lb. hammer
- Leather safety toe work shoes or boots.

Optional items that are allowed:

- Knee pads
- Flashlight (welder’s choice)
- Spacer for root opening
- 7-inch Tungsten tote holder
- TIG finger heat shield

NCC-furnished tools/equipment:

- 4½-inch angle grinder that meets industry standards
- 4½-inch grinding discs and wire wheels
- TIG gasket insulator
- TIG Collet, TIG large gas lens
- TIG torch—17FV-12-R 150 A/C flex valve 12.5-foot power cable
- #6, 8 and 10 cup nozzle
- 1/8-inch x 7-inch Tungsten
- Power cable adapter
- Green inert gas hose
- Inert gas regulator

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 TIG (GTAW) Pipe Welding Sample Score Sheet

Judging Criteria	Competitor Identification Numbers						
	Maximum Points						
Fit up and tacks – 5G							
Root pass – 5G							
Fill passes – 5G							
Cap – overall appearance - 5G							
Fit up and tacks – 2G							
Root pass – 2G							
Fill passes – 2G							
Cap – overall appearance - 2G							
Quality of workmanship, proper use of tools and equipment							
Project disassembly							
Sub-Total	160						
Safety-housekeeping							
Use of PPE							
Use of power tools							
Sub-Total	40						
Total Score	200						