



2023 Sheet Metal Competition

FACT SHEET

Project Manager

Shon Smith, ACI Mechanical

For questions related specifically to the sheet metal competition, contact Shon Smith at ssmith@acimech.com. For all event questions, contact Jarrell Jackson, National Craft Championships director, at (202) 595-1789 or jackson@abc.org.

Specific Competition Eligibility

The sheet metal competition has no competition-specific eligibility requirements. Please refer to overall eligibility requirements listed in the guidebook.

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 2023.

Practical Performance Test Description

Each competitor will perform several tasks utilizing knowledge and skills applicable to sheet metal fabrication, installation, field layout and field measurement. This task will be drawn from both residential and commercial construction. The competitor will be issued a drawing and materials. Working on a wood sub-floor or a steel overhead structure, the competitor will be required to lay out, fabricate and install a duct system as per plans consisting of elbows, transitions, offsets, round pipe, taps and straight joints. The materials used will consist of some prefabricated fittings and accessories. All other pieces will be fabricated from metal blanks, cut to approximate size, which are provided to complete the project.

Knowledge and Skills Required

The knowledge and skills for this competition are based on all levels of the NCCER Series Sheet Metal curriculum, with emphasis on the following modules:

- Introduction to the Sheet Metal Trade
- Fasteners, Hangers and Supports
- Installation of Air Distribution Accessories
- Insulation
- Introduction to Sheet Metal Layout and Processes
- Trade Math One
- Fabrication One: Parallel Line Development
- Air Properties and Distribution
- Sheet Metal Duct Fabrication Standards
- Trade Math Three: Field Measuring and Fitting
- Air Systems Principles of Airflow
- Comprehensive Blueprint and Specification Reading
- Fabrication Three: Triangulation
- Architectural Sheet Metal
- Shop Production and Organization

- Trade Math Two
- Fabrication Two: Radial Line Development
- Blueprints and Specifications
- Air Balance
- Fabrication Four: Comprehensive Review
- Bend Allowances

Tools Required

Each competitor should bring the tools listed on the following page to the competition. Tools may be examined prior to the practical performance test and additional tools will be stored 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:

- Left and right aviation snips (offset snips acceptable)
- Sheet metal hammer
- 12- to 14-inch tinner snips
- Hand seamer
- Flat-tip screwdriver
- Scratch awl or scribe
- Center punch
- 10-foot tape measure (minimum)
- 6-inch or 2-foot level
- Dividers
- Pencil/Sharpie-type marker
- 12-inch combination square (minimum)
- Flexible steel rule (24-inch minimum)
- 12-inch Malco (or equal) folding tool
- Adjustable wrench

Competitors should also be familiar with the safe operation of the following tools to be provided on site:

- Pittsburgh machine
- Hand-crank flanging machine
- Cordless drill and impact
- Metal brake

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
Sheet Metal Sample Score Sheet**

Judging Criteria	Competitor Identification Numbers					
	Maximum Points					
Radius elbow						
Straight duct						
Transition						
Offset						
Square to round						
Starter/tap						
Installed to plans						
General appearance						
Pre-plan/efficiency						
SUBTOTAL:	150					
Safe Practices						
PPE/tool use						
Safety—housekeeping						
SUBTOTAL:	50					
GRAND TOTAL:	200					
Tie Breaker #1						
Tie Breaker #2						

SAMPLE