



201, Sheet Metal Competition

FACT SHEET

Project Manager

Shon Smith, ACI Mechanical

For questions related specifically to the sheet metal competition, contact Shon Smith, 2017 sheet metal project manager, (515) 509-8443 or ssmith@acimech.com. For all event questions, contact Lisa Nardone, National Craft Championships director, (202) 595-1789 or nardone@abc.org.

Specific Competition Eligibility

The sheet metal competition has no competition-specific eligibility requirements. Please refer to overall eligibility requirements listed on page 3 of the guidebook.

Written Exam

Every competitor should have a thorough understanding of 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 Contren® Learning Series Core Curriculum modules. Reference materials and calculators are not permitted in the written exam.

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 layout, 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 pre-fabricated 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 Contren® Learning Series Sheet Metal curriculum, with particular 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
- Trade Math Two
- Basic Piping Practices
- Fabrication Two: Radial Line Development
- Bend Allowances
- Blueprints and Specifications
- Air Properties and Distribution
- Sheet Metal Duct Fabrication Standards
- Soldering
- Fiberglass Duct
- Trade Math Three: Field Measuring and Fitting
- Air Systems
- Introduction to Welding, Brazing, and Cutting
- Principles of Refrigeration
- Principles of Airflow
- Comprehensive Blueprint and Specification Reading
- Fabrication Three: Triangulation
- Architectural Sheet Metal
- Shop Production and Organization
- Air Balance
- Louvers, Dampers, and Access Doors
- Fume and Exhaust System Design
- Fabrication Four: Comprehensive Review

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' tape measure (minimum)
- Level (6" or 2')
- Dividers
- Pencil/Sharpie-type marker
- 12-inch combination square (minimum)
- Flexible steel rule (24" 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 onsite:

- 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	MAX POINTS	1	2	3	4	5	6	7	8	9	10
A Radius Elbow	20										
B Straight Duct	10										
C Transition	20										
D Offset	10										
E Square 2 Round	40										
F Starter/Tap	10										
G Installed to Plans	20										
H General Appearance	10										
I Pre Plan/Efficiency	10										
TOTAL	150	0	0	0	0	0	0	0	0	0	0
J Safe Practices	30										
K PPE / Tool Use	10										
L Housekeeping	10										
SAFETY TOTAL	50	0	0	0	0	0	0	0	0	0	0
TOTAL POINTS:	200	0	0	0	0	0	0	0	0	0	0