

SkillsUSA 2010 Contest Projects

Welding Fabrication

Click the “Print this Section” button above to automatically print the specifications for this contest. Make sure your printer is turned on before pressing the button.

National SkillsUSA Welding Fabrication Competition Update – 2010

Please review these instructions for the national competition in June. Now is the time to brainstorm, practice, and design your project to be built. Your team will have 6.5 hours to complete your project. Keep in mind your team & project will be judged throughout your 6.5 hours. Manage your time wisely. **Please note a CD of your design must be ready to turn in at orientation. (See items supplied by teams)**

Project Theme:

- Barbeque Grill

Material List Supplied by Committee

- **Quantity 4: 1/8" x 36" x 24" mild steel plate**
- **Quantity 2: 1/8" x 24" x 24" mild steel plate**
- **Quantity 4: Steel Hinges: 4.5" X 4.5"**
- **Quantity 2: Caster Wheels Stationary 4" X 4-1/2"**
- **Quantity 2: Caster Wheels Swivel 4" X 4-1/2"**
- **Quantity 3: 1/8" x 1" x 1" 10 ft length angle iron**
- **Quantity 1: 1/4" x 48" x 24" expanded steel mesh**

Welding Consumables Supplied by Committee:

- .045 Lincoln Electric SuperArc L-56 (AWS ER70S-6)
- .045 Lincoln Electric Ultracore 71A85 (AWS E71T-1/9)
- 3/32" Hobart ER70S-2 GTAW Filler Rods
- 3/32" Hobart E7018 SMAW Electrodes
- 1/8" Hobart E6010 SMAW Electrodes

Minimum Project Requirements:

- 5 SMAW Welds of 3" or greater (Two 3F vertical up welds required)
- 5 GMAW Welds of 3" or greater (Two 3F vertical up welds required)
- 5 GTAW Welds of 3" or greater (Two 3F vertical up welds required)
- 5 FCAW Welds of 3" or greater (Two 3F vertical up welds required)
- total of 25" of cut material using OFC process
- 75% of Total Weight of Material is required for project. **Bonus points awarded for least amount of unused material.**

Judging Categories:

- Safety
- Welding Skills
- Cutting Skills
- Teamwork
- Fabrication Accuracy
- Blueprint minimum requirements
 - Title block
 - Proper Critical Dimensions
 - No tolerances are acceptable
 - Proper Welding Symbols
 - Proper Finishing Symbols
 - Proper views needed to fabricate the project
- Written Test
- Verbal Project Description of design

Items Supplied by Teams: (These are in addition to what is listed in the

technical standards 2010)

- All Personal Protective Equipment
- **A CD containing all electronic file(s) must be turned in at orientation: a (.pdf) file and a (.dxf) file**
- **(4)Printed 11"x 17"Copies of Project Print(s) : 1 set for team, 2 sets for judges, 1 set for chairman**
- Teams may bring own hand tools but are not needed to complete the project

- No templates may be used

Tools Supplied by Committee to each team:

- Welding Machines
 - Miller Electric Syncrowave 250 used for SMAW/GTAW
 - Lincoln Electric PowerMig 350MP for GMAW/FCAW
- Environmental Equipment
 - 1 Environmental Extraction Unit per team(Miller Electric or Lincoln Electric)
- Harris Calorific OFC Torches
- Materials from Bill of materials
- Metabo grinders
- Tape Measures
- All other shop tools needed to complete the project
- Teams may use their own hand tools however no templates may be used

Other tools

- There will be a limited number of Mag Drills provided for drilling. If you choose to drill holes, you must provide your own drill bits. There will not be enough drills for each team to have one.
- If a team's project calls for a hole to be drilled and the drill is unavailable, the holes may be cut using OFC with no penalty.

Other Information

- Include steel hinges and caster wheels on your prints. When fabricating, sometimes parts are not supplied with the correct dimensions. If the dimensions are different than your prints, "on the job" corrections will be made with no penalty.