Dear Instructors,

You received a letter to inform you of, and invite your students to participate in, the AWS Reading Section’s 34th Annual Welding Competition.

HELD ON: March 19, 2011   (Rain Date March 26th)

TIME: 8:00 am to noon

LOCATION: Mt Joy Vo-tech   (Welding Lab)
           432 Old Market Street
           Mount Joy, Pa 17552

All contestants must be members of AWS to participate in the competition. Please provide the names of each contestant and either their membership number or attach a copy of the completed membership application and fee. Checks are to be made payable to “American Welding Society.”

First Level – Up to 500 hours training

Name of Participant ____________________________, member no. ____________.

Second Level – 500 hours to 1000 hours training

Name of Participant ____________________________, member no. ____________.

Third Level – Greater than 1000 hours training

Name of Participant ____________________________, member no. ____________.

A contestant may compete at a higher level if desired. However, a contestant with higher training hours may not compete at a lower level. Each school may have one contestant compete per level. Schools do not need to have all levels represented at the competition to participate.

AN AWARDS BANQUET IS SCHEDULED FOR APRIL 21, 2011

Please direct questions to Tracy Davenport at 717-279-6834 or t-daven@comcast.net.
2011
Reading Section AWS
Welding Competition
FIRST YEAR STUDENT

EQUIPMENT
1. Welding machine and gas cutting equipment
2. Correct personal protective equipment and shop tools

MATERIALS USED
1. One piece of 3/8” x 12” x12” carbon steel (SA-285-C)
2. Electrodes:
   a. 1/8” diameter – E7024
   b. 5/32” diameter – E6010
   c. 1/8” diameter - E6010

PROCESS
1. Shielded Metal Arc Welding
2. Oxyfuel gas cutting
TEST DESCRIPTION

1. Flame cut a piece of 3/8" x 12" x 12” carbon steel plate as shown in figure #1
2. Fit the two pieces as shown in figure #2
3. The welding will be done in the horizontal (2F) position while alternating one side to the other to minimize distortion.
4. The first pass on each side will be made using the 1/8” diameter electrode.
5. The size of the completed welds shall agree with the welding symbol given.
Evaluation

1. Judges will evaluate the following during the welding process as indicated on the enclosed judges sheet for the first year student.
2. The size of the fillet welds will be checked, any weld resulting in too much or not enough weld will subtract points from the students score.
3. Appearance of the 30 degree bevel cut will be evaluated along with the angle of the cut being measured to ensure compliance to the specified size.
4. The safe use of equipment and overall shop safety will also be evaluated.
5. The ability to follow instruction and blueprint comprehension will also be judged.
6. Wearing of correct shop dress and personal protective equipment shall also be considered in the scoring of the student.
Reading Section 100 of the
American Welding Society
First year Students Test

Oxyfuel Gas Cutting Test
Figure 1
First Year Students
Reading Section 100 of the American Welding Society
First year Students Test

Metal Arc Welding Test
Figure 2
First Year Students
2011

Reading Section AWS
Welding Competition
Second Year Students

Equipment
1. Welding machine and gas cutting equipment
2. Correct shop dress and equipment

Materials Used
1. Two pieces of 3/8" x 6" x 8" carbon steel (SA-285-C)
2. Electrodes:
   A- 1/8" diameter- E6010
   B- 5/32" diameter- E6010

**Process**

1. Shielded metal arc welding
2. Oxyfuel gas cutting
Test Description

1. Fit-up the two 3/8” x 6” x 8” plates with the beveled edges together, see figure # 1 root opening of 1/8”.
2. The weld will be made using stringer beads in the flat position. The cover pass may be a weave bead.
3. The root pass will be made using the 1/8” diameter E6010 electrode, and the balance of the welding will be made using the 5/32” diameter E6010 electrode.
4. The cover pass shall provide for a maximum reinforcement of 1/8”.
5. Contestants will prepare the weld test plate for their bend test. They will cut two coupons, one for a face bend and one for a root bend. Each coupon shall be 1-1/2” wide. The edges will be ground smooth, with both sides flush, and a 1/8” radius on the corners of the coupon. The plates will be stamp marked after they are tacked together, but before the root pass is made.

If the stamp marks are removed during coupon making a 10 point deduction will occur.
Evaluation

1. Judges will evaluate during the welding process as indicated on the enclosed judges sheet for the second year students.

2. The coupons will be bent in a guided bend fixture. The evaluation of the bends, by the judges will be included and become part of the total evaluation as recorded by the judges.

3. Root and Face bend:
   a. The convex surface of the bend test specimens shall be visually examined for surface discontinuities.
   b. For acceptance, the surface shall contain no discontinuities exceeding the following.
      1. 1/8” measured in any direction on the surface.
      2. 3/8” the sum of the greatest dimensions of all discontinuities exceeding 1/32” but less than or equal to 1/8”.
      3. 1/4” the maximum corner crack except when that corner crack resulted from a visible slag inclusion or other fusion type discontinuity, then the 1/8” maximum shall apply.

4 Safe use of equipment and shop safety.

5 Ability to follow instructions and blue prints.

6 Correct shop dress and equipment.
Shielded Metal Arc Welding Test
Figure 1
Second Year Students
2011

Reading Section AWS

Welding Competition

Third Year Student

Equipment

1. Welding machine and gas cutting equipment
2. Correct shop dress and equipment

Materials Used

1. Two pieces of 1” x 6” x 8” carbon steel
2. One piece of 1/4” x 3” x10” carbon steel
3. Electrodes:
   a. 3/32” diameter – E7018 (root pass)
   b. 1/8” diameter – E7018
c. 5/32” diameter – E7018 (optional for cover pass)

Process

1. Shielded metal arc welding

**Note:** Radiography is used for 3rd year test
no tack welds shall be in the test area.
Test Description

1. Fit-up the two 1” x 6” x 8” plates with the beveled edges together, see figure #1. Tack welds may be made in the flat position. The plate must be welded and cleaned in the vertical-up (3G) position. Maximum cover reinforcement of 1/8” allowed.

2. The weld will be made using stringer beads and/or weave beads.

3. Students will have \(\frac{1}{2}\) hour to tack and weld the root pass.

4. After the test block has been judged on the root pass, the contestant will have 1 hour to finish the test. (unfinished plates will not be radiographed)
Evaluation

1. Judges will evaluate during welding process as indicated on the enclosed judges sheets for the third year students.

2. The completed test plate will be radiographed. Chapter six of the AWS D1.1 code will be the governing specification. The evaluation of the radiographs will be included and become part of the total evaluation as recorded by the judges.

3. Safety

4. Ability to follow blue print and contest instructions.

5. Appearance of the root pass and the cover pass.

6. Correct shop dress and equipment
Shielded Metal Arc Welding Test
Figure 1
Third Year Students