

2026 SkillsUSA Nebraska Welding Fabrication High School Qualification Project

High schools that wish to field 3-student teams for the 2026 Welding Fabrication contest in April will be selected through a qualification process as described below. **Each of the 3 students on the high school team will complete the two sample weldments described and detailed in the shop prints provided.**

The sample weldments will then be **postmarked (or dropped off) by Friday, January 30th**. The projects will then be scored to form a composite score for each school. Based upon that composite score, the top 10 schools will be given an opportunity to participate in the April state competition.

The weld projects:

The projects are designed to evaluate each student's ability in: blueprint reading and part layout; Fabrication Technique; Oxygen-Acetylene cutting (OA); and GMAW, GTAW & SMAW welding processes.

The GTAW & GMAW project is comprised of 2 steel sheet metal pieces approximately 1/8' thick (11 gage or 10 gage), measuring 6 inches long by 3" to 4" wide. (The width is not critical as long as each of the 2 pieces is identical.) They will be put together in a lap weld configuration with a GTAW lap weld on one side, utilizing 1/16" dia. filler metal. Then a GMAW weld on the opposite side will utilize .035 dia. filler metal. (Edges are NOT to be welded.) The overlap between the 2 pieces shall be ½ the width of each piece.

The OA-SMAW project will start with one piece of ¼' or 5/16" steel plate 7" x 5" and will be cut via the OA process into the 2 pieces depicted. The cut edge may be chipped of slag and wire brushed to clean it up but may not use a grinder. Then the 2 pieces will be welded with SMAW process as depicted in the drawing. One side will use E7018 electrode, and the opposite side will use either E6010 or E6011 electrode.

The weldments may be produced in any welding position that is desired by the student. In addition, GMAW may be employed to tack weld each project as well. But the tack welds must be consumed by the specified weld.

Ship **all 3 students' test welds (6 projects)** together to: Attn. Kiley Palmertree/SkillsUSA, Klute Inc. 1313 Road G, York, NE 68467. **The package must be postmarked (or dropped off) by Friday, January 30th.** There will be no extension; plan accordingly and prepare for missed school days due to inclement weather. We will report on the finalist on Friday, February 13th, or sooner if possible.

And speaking of grading, please review the criteria used to evaluate these projects. Basically, the same categories that are used for the State contest. Please let me emphasize once again the **Fabrication** category, which is defined as "fit and finish." Most submitted projects lose out on all the points due to heavy levels of spatter, weld slag, and sharp edges and sharp corners left on the projects. That amounts to nearly 300 points per team and makes a huge difference between the teams that make it to the state contest and those that barely miss out and are left behind. A grinder or sanding disc can be used to polish up the projects. (But not allowed to be used on the actual OA-cut edge/surface.)

Grading Criteria for HS Qualification Projects

OA Cutting - Straightness of cut, cut lines shall be straight and be relatively perpendicular (90 degrees) to the surface of the plate, continuity /lack of scalloping, cleanliness of the cut & minimal residual slag on or near the cut edge.

GTAW- Right size along entire length, size consistency, flat/convex face, no porosity & undercut, and crater filled. No melt through to the backside. Grinding on the actual finished weld is not permitted.

GMAW -Right size along entire length, size consistency, flat/convex face, no porosity & undercut, and crater filled. No melt through to the backside. Grinding on the actual finished weld is not permitted.

SMAW Looking for total length, right size (including equal leg length), consistency of the entire length, flat or slightly convex face, toes washed in, no undercut, tie in (weld will require more than one rod), good wash in at start (not cold), and crater filled at the end. Slag removed for inspection. Grinding on the actual finished weld is not permitted.

Fabrication - parts placement and orientation, squareness of parts, sharp edges vs rounded to be safer to handle, removal of spatter & wire whiskers, all slag removed from SMAW

Blueprint Reading - Are all parts in the right locations? Are all welds in the right locations and of the specified size?