

Hello All-

We are officially one week from the competition!

With this being said, there has been some slight adjustments in regarding our weld competition and additional updates. Please see below:

**Pre-Meeting:** 4:30 PM – 5:00 PM

**Contest:** 7 AM – 12:45 PM

**Location:**

SLCC Welding Lab

1060 N. Flyer Way

Salt Lake City, UT 84116

## 2022 Skills Welding Schedule

	Tack	FCAW	GMAW	SMAW	Written Test	GTAW	OFC	BREAK
7:00 - 7:10 AM	WELCOME! Introductions, Site Host, Sponsors, & Judges							
7:10 - 7:30 AM	Drawing Review							
7:35 - 8:05 AM	1 to 8				17 to 24	9 to 12	13 to 16	25 to 27
8:10 - 8:40 AM	9 to 16	1 to 8			25 to 27	17 to 20	21 to 24	
8:45 - 9:15 AM		9 to 16	1 to 8			25 to 27	17 to 20	21 to 24
9:20 - 9:50 AM			9 to 16	1 to 8		21 to 24	25 to 27	17 to 20
9:55 - 10:25 AM	17 to 24			9 to 16				1 to 8, 25 to 27
10:30 - 11:00 AM	25 to 27	17 to 24			1 to 8			9 to 16
11:05 - 11:35 AM		25 to 27	17 to 24		9 to 16	1 to 4	5 to 8	
11:40 - 12:10 PM			25 to 27	17 to 24		5 to 8	1 to 4	9 to 16
12:15 - 12:45 PM				25 to 27		13 to 16	9 to 12	17 to 24, 1 to 8

**Contest:**

We have an update widget design which will include one steel widget that includes FCAW,SMAW, and GMAW welds. One aluminum widget that will be welded GTAW and one steel plate to be cut with OFC. Below are the thicknesses of material:

<b>Material Thickness</b>	<b>In.</b>
GTAW-Aluminum	.125"
FCAW- Steel	.25"
SMAW-Steel	.25"
GMAW- Steel	.25"
OFC- Steel	.5"

In addition, below is the following filler metal that will be used:

<b>Filler Metal</b>
3/32" ER4043
.045" E71T-M
.035" ER70S-6
1/8" E7018
1/8" E6010

The types of machines that will be provided are:

- Flextec 350X/LN25X Feeder
- Flextec 350X/LF72 Feeder
- Lincoln Power Wave C300
- Miller Dynasty 280

**Judging**

The below sheets outline the form of judging we will be done for the contest. The exact criteria might be abbreviated versions or modified slightly to fit our widget and welds, but will follow the same "YES" / "NO" template. In addition, we will be spot checking during the welding contest for appropriate WFS, amps, volts, and proper safety

'A'=YES it meets this criteria  
 'B' = NO it does NOT meet this criteria  
 **SMAW FINAL**

1	Has surface slag, spatter, and smoke been removed from all of the joints and surrounding areas?
2	Is the Project Assembled In Accordance to the Drawing?
3	Does the overall workmanship display consistency among all welds? (ALL WELDS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTINUITIES)
4	Weld # _____ Crack Propagation. Any crack is unacceptable. Are there no visible cracks? (Yes= "Yes, there are no visible cracks)
5	Weld # _____ Crater Cross Section. All craters should be filled to provide the specified weld size, except for the end of intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?
6	Weld # _____ Overall bead width not to exceed 1/16 in. variation in width (from max to min) for any weld face. Does the weld meet this requirement?
7	Weld # _____ Porosity. No visible porosity is acceptable, Does the Weld Meet this Requirement?
8	Weld # _____ Undercut. Not to exceed 1/32 in depth for a total accumulated length of 1/2in. Does the weld meet this requirement?
9	Weld # _____ Undersized Welds. Weld Size not to be larger by anything greater than 1/16 in. anywhere along the weld length and no smaller than specified on the drawing. Does the weld size meet this requirement?
10	Weld # _____ Weld Profiles. Fillet welds can be slightly concave, flat, or slightly convex with the crown not to exceed 3/32 in. above flush. Groove Welds can be flush with an even crown not to exceed 3/32 in. Does this weld meet this requirement?
11	Weld # _____ Weld/Base metal Fusion. Complete fusion shall exist between base and weld metal. Does the weld display complete fusion with no cold lap?
12	Weld # _____ There shall be no Arc Marks outside the weld area. Does the weld meet this requirement?

Assembly  
 Questions

NOTE: This Final criteria is designed to follow AWD D1.1 table 6.1 Visual Inspection criteria as a start, but much more difficult. Picking three top performing welds requires that the evaluation is more strict than code. We hope to eventually add tiers of quality to these questions that fall in line with the World Skills Welding Scoring Criteria which is extremely strict to be able to separate near perfect welds to determine a rank. In the future as competition welding performance improves over time these questions will evolve.



Figure 1 – OFC Go,  
No-go Gauge.

'A'=YES it mees this criteria  
'B' = NO it does NOT meet this criteria  
**OFC FINAL**

**NOTE: This scoring criteria uses go-no go gauges to measure the cut. The Gauge is cut 0.1 in. to either side of the line. You may find you need to eliminate or add questions.**

1	Does the bevel angle stay within +/- 5 degrees in any location along its entire length? (Use angle finder tool)
2	Does the cut quality of the BEVEL face display minimal undulations that do not exceed an inconsistency greater than 1/32 in?
3	Does the cut quality of the LARGE SHAPE face display minimal undulations that do not exceed an inconsistency greater than 1/32 in?
4	Does the cut quality of the SMALL SHAPE face display minimal undulations that do not exceed an inconsistency greater than 1/32 in?
5	Does the cut quality of the THIRD SHAPE face display minimal undulations that do not exceed an inconsistency greater than 1/32 in?
6	Does the cut stay inside the diameter of the Go / no-go gauge for The Large SHAPE?
7	Does the cut stay inside the diameter of the Go / no-go gauge for The Small SHAPE?
8	Does the cut stay inside the diameter of the Go / no-go gauge for The THIRD SHAPE?
9	Does the Go / no-go gauge fit inside of the Large Shape?
10	Does the Go / no-go gauge fit inside of the Small Shape?
11	Does the Go / no-go gauge fit inside of the THIRD SHAPE?
12	Is the Bevel accuracy along its length Straight to within no more than a variation of 1/8 in.? (Set two parallel lines along the entire length of the bevel and no point should fall outside that window)

'A'=YES it meets this criteria  
 'B' = NO it does NOT meet this criteria  
**GMAW FINAL**

Assembly  
 Questions

1	Has surface slag, spatter, and smoke been removed from all of the joints and surrounding areas?
2	Is the Project Assembled In Accordance to the Drawing?
3	Does the overall workmanship display consistency among all welds? (ALL WELDS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTUNITUES)
4	Weld # _____ Crater Cross Section. All craters should be filled to provide the specified weld size, except for the end of intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?
5	Weld # _____ Overall bead width not to exceed 1/16 in. variation in width (from max to min) for any weld face. Does the weld meet this requirement?
6	Weld # _____ Porosity. No visible porosity is acceptable, Does the Weld Meet this Requirement?
7	Weld # _____ Undercut. Not to exceed 1/32 in depth for a total accumulated length of 1/2in. Does the weld meet this requirement?
8	Weld # _____ Undersized Welds. Weld Size not to be larger by anything greater than 1/16 in. anywhere along the weld length and no smaller than specified on the drawing. Does the weld size meet this requirement?
9	Weld # _____ Weld Profiles. Fillet welds can be slightly concave, flat, or slightly convex with the crown not to exceed 3/32 in. above flat. Groove Welds can be flush with an even crown not to exceed 3/32 in. Does this weld meet this requirement?
10	Weld # _____ Weld/Base metal Fusion. Complete fusion shall exist between base and weld metal. Does the weld display complete fusion with no cold lap?
11	Weld # _____ There shall be no Arc Marks outside the weld area. Does the weld meet this requirement?
12	All other Fillet Welds Undersized Welds. Weld Size not to be larger by anything greater than 1/16 in. anywhere along the weld length and no smaller than specified on the drawing. Do all remaining fillet welds meet this requirement?

**NOTE: This Final criteria is designed to follow AWD D1.1 table 6.1 Visual inspection criteria as a start, but much more difficult. Picking three top performing welds requires that the evaluation is more strict than code. We hope to eventually add tiers of quality to these questions that fall in line with the World Skills Welding Scoring Criteria which is extremely strict to be able to separate near perfect welds to determine a rank. In the future as competition welding performance improves over time these questions will evolve.**

'A'=YES it meets this criteria  
 'B' = NO it does NOT meet this criteria  
**FCAW FINAL**

Assembly  
 Questions

1	Has surface slag, spatter, and smoke been removed from all of the joints and surrounding areas?
2	Is the Project Assembled In Accordance to the Drawing?
3	Does the overall workmanship display consistency among all welds? (ALL WELDS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTUNITUES)
4	Weld # _____ Crater Cross Section. All craters should be filled to provide the specified weld size, except for the end of intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?
5	Weld # _____ Overall bead width not to exceed 1/16 in. variation in width (from max to min) for any weld face. Does the weld meet this requirement?
6	Weld # _____ Porosity. No visible porosity is acceptable, Does the Weld Meet this Requirement?
7	Weld # _____ Undercut. Not to exceed 1/32 in depth for a total accumulated length of 1/2in. Does the weld meet this requirement?
8	Weld # _____ Undersized Welds. Weld Size not to be larger by anything greater than 1/16 in. anywhere along the weld length and no smaller than specified on the drawing. Does the weld size meet this requirement?
9	Weld # _____ Weld Profiles. Fillet welds can be slightly concave, flat, or slightly convex with the crown not to exceed 3/32 in. above flat Groove Welds can be flush with an even crown not to exceed 3/32 in. Does this weld meet this requirement?
10	Weld # _____ Weld/Base metal Fusion. Complete fusion shall exist between base and weld metal. Does the weld display complete fusion with no cold lap?
11	Weld # _____ There shall be no Arc Marks outside the weld area. Does the weld meet this requirement?
12	All other Fillet Welds Undersized Welds. Weld Size not to be larger by anything greater than 1/16 in. anywhere along the weld length and no smaller than specified on the drawing. Do all remaining fillet welds meet this requirement?

NOTE: This Final criteria is designed to follow AWD DT. 1 table 6. 1 Visual inspection criteria as a start, but much more difficult. Picking three top performing welds requires that the evaluation is more strict than code. We hope to eventually add tiers of quality to these questions that fall in line with the World Skills Welding Scoring Criteria which is extremely strict to be able to separate near perfect welds to determine a rank. In the future as competition welding performance improves over time these questions will evolve.



'A'=YES it meets this criteria  
 'B'= NO it does NOT meet this criteria  
**GTAW FINAL**

**NOTE:** This Final criteria is designed to follow AWD D1.1 table 6.1 Visual inspection criteria as a start, but much more difficult. Picking three top performing welds requires that the evaluation is more strict than code. We hope to eventually add tiers of quality to these questions that fall in line with the World Skills Welding Scoring Criteria which is extremely strict to be able to separate near perfect welds to determine a rank. In the future as competition welding performance improves over time these questions will evolve. At the National championships, we see too many GTAW projects in pieces on the turn in table. This GTAW scoring rubric emphasizes completion. Once the trend of incomplete GTAW projects changes, this criteria will stress less on the completion of welds.

Assembly Questions	1	Is the Project Assembled In Accordance to the Drawing?
	2	Was the order of operations followed?
	3	The GTAW Project should show no post weld wire brushing, does this project display no post weld wire brushing?
	4	Weld # _____ Placed in the proper Location?
	5	Weld # _____ Proper Size and Length?
	6	Weld # _____ Overall bead width not to exceed 1/32 in. variation in width (from max to min) for any weld face. Does the weld meet this requirement?
	7	Are all present welds free from porosity? No visible porosity is acceptable, Do the Welds Meet this Requirement?
	8	Weld # _____ Crater Cross Section. All craters should be filled to provide the specified weld size, except for the end of intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?
	9	Did Welder complete _____ Number of welds or more?
	10	Did Welder complete _____ Number of welds or more?
	11	Did Welder complete _____ Number of welds or more?
	12	FOR PROJECTS THAT HAVE _____ OR MORE WELDS COMPLETED (For projects with less weld, or it has been wirebrushed, the answer is NO. "Touchdowns" are when the tungsten is touched to the workpiece or the filler metal and an indication can be visible as long as no post wirebrushing is performed. Is the project free from any "touchdowns"?)



**Was there a safety infraction? BE SURE TO NOTE**  
**The Competitor Number and Explain the safety**  
**violation on the Safety Infraction Sheet.**