# **Competition Guidelines and Updates:**

We are excited for the upcoming SkillsUSA Individual Welding Contest on March 28<sup>th</sup> and 29<sup>th</sup>. Per the first update, we are doing a two-day format. On Thursday, March 28<sup>th</sup>, we will be starting at 11 AM with a quick conversation and lunch, then followed by our Steel widget and written test. We will then start at 8 AM for the Oxy-Fuel and our aluminum widget on Friday, March 29<sup>th</sup>. Please planning on arriving 15 minutes early both days.

Lastly, we will be doing our pre-competition meeting the week of March 11<sup>th</sup> through the 15<sup>th</sup> via teams. All competitors must attend at least one of these sessions.

Times:

March 11<sup>th</sup>: 4:30 PM TO 5:00 PM

March 12<sup>th</sup>: 4:30 PM TO 5:00 PM

March 13<sup>th</sup>: 5:30 PM TO 6:00 PM

March 14<sup>th</sup>:12:30 PM TO 1:00 PM

March 15<sup>th</sup>: 8:00 AM TO 8:30 AM

Please join virtually from the following link.

<u>https://teams.microsoft.com/l/meetup-</u> join/19%3ameeting\_MzIIMzA4YjQtNGY5MC00MzU3LTkxZjctODFINDExYThiYTAw%40thread.v2/0?context=%7b%22Tid%22% 3a%2202ebdd84-0955-400e-bd10-d34dd3015f80%22%2c%22Oid%22%3a%22b0d8823c-fc42-47f4-a436-d992ff23cf6b%22%7d

## **EQUIPMENT AND MATERIALS**

## Welding Equipment (will be provided)

- a) GMAW Power Wave C300
- b) FCAW Flextec 350X/LF-72
- c) SMAW Flextec 350X
- d) GTAW Dynasty 280
- e) OFC

#### Filler Material (to be provided by Lincoln Electric)

- a) GMAW: ER70S-6 .035"
- b) FCAW: E71T-1 .045"
- c) SMAW: E7018 1/8" & E6010 1/8"
- d) GTAW: ER4043 1/16" & 3/32"

#### Base Material (will be provided)

- a) Steel Project Kit to be provided by Weldermade
- b) Aluminum Project Kit to be provided by Weldermade
- c) OFC plate included

### For additional practice kits, please visit weldermade.com.

### Supplied by the competitor.

- a) Hearing and/or ear protection
- b) Welding gloves full length (gauntlet) for SMAW, GMAW and FCAW
- c) Welding gloves appropriate for GTAW
- d) Welding cap/beanie
- e) Welding helmet with appropriate filter plate/lens and protective cover lens for tacking and welding; auto darkening filter plate/lens permissible. Spare filter plate and cover lens.
- f) Cutting goggles with shade 5 lens/cover lens for OFC/PAC; helmet with shade 5 capability permissible; face shield headgear with shade 5 permissible. Spare filter and cover lens.
- g) Pocket calculator
- h) Fillet weld gauge standard set
- i) Lead pencil and/or ballpoint pen
- j) Soapstone with or without holder or silver streak pencil
- k) Scribe without magnet
- I) Compass
- m) Protractor
- n) Combination square set or speed square
- o) 10-foot (3.1 meters) minimum steel tape measure
- p) 16-ounce (.45 kilogram) ball peen hammer
- q) Center punch
- r) Cold chisel
- s) 11R or 10-inch (254 millimeters) vise grips
- t) 6-inch (152 millimeters) side cutting pliers or diagonal cutting pliers
- u) 6-inch (152 millimeters) needle nose pliers welpers permissible
- v) Chipping hammer
- w) Carbon steel wire brush
- x) Stainless steel wire brush
- y) Friction lighter (striker) and tip cleaner
- z) All competitors must create a one-page resume. See "Resume Requirement" below for guidelines.

**NOTE:** Only items (a.-z.) below may be used during the competition. <u>Using any tools other than those</u> listed items (a.-y.) below will result in a points deduction for each infraction throughout the <u>competition</u>. Powered Tools of any type and cellphones are prohibited in the contest. Any questions regarding tools must be asked at the orientation prior to the competition.

## **RESUME REQUIREMENTS**

Competitors <u>MUST</u> create a one-page resume to submit online. Please submit this no later than 7:00 AM on March 29<sup>th</sup>, 2024. Please email to <u>kevin\_lannoch@lincolnelectric.com</u>. <u>Failure to submit a resume</u> <u>will result in a point reduction.</u> Your resume must be saved as a PDF file type using file name format of "Last Name\_First Name." For example, "Amanda Smith" would save her resume as Smith\_Amanda.

# **PROHIBITED DEVICES**

Cell phones and powered tools are **NOT** allowed in the competition area

## **Penalties for Prohibited Devices**

If a competitor's electronic device <u>makes noise</u> or if the competitor <u>is seen</u> using it at any time during the competition, judges will document and review. If confirmed that the competitor used the device in a manner which compromised the integrity of the competition, the competitor's scores may be canceled.

# **COMPETITION GUIDELINES**

- Competitors must correctly use the welding equipment during the competition. This also includes following all safety guidelines during the competition; including the wearing of uniform, safety glasses, and closed-toe shoes at all times. The judges may stop a competitor at any section of the competition if they deem a competitor's manner to be hazardous to either themselves or others. Such a stoppage shall be documented as a warning. If the competitor is warned a second time, he or she may be disqualified for that section of the competition.
- As soon as the competitors enter the competition area as defined by the welding lab— no communication shall occur between the competitors or between the competitors and anyone else, except as directed by the competition chair, technical committee members or judges. Any such communication may result in the competitor being disqualified from that section of the competition.
- 3. All instructors and spectators must stay outside the competition area.
- 4. This competition will be testing GMAW-Carbon Steel , FCAW-Carbon Steel, SMAW-Carbon Steel, GTAW-Aluminum, Oxy Fuel Cutting-Carbon Steel, & Written Exam.
  - a. Tacking, GMAW, FCAW, SMAW Written Test will be 25 minute rotations on Thursday.
  - b. OFC and GTAW will be 30 minutes rotations on Friday.
- 5. Welding and cutting instructions will be provided to the competitors and specified on the Welding Procedure Specifications (WPS).
- 6. Once the part has been tacked up, it must stay on its base during all welding. The <u>infraction will</u> <u>result in a point deduction</u>, if they're caught rotating it.
- 7. Contestants must remain at their workstation until the end of each rotation and then promptly go to the next station.
- 8. <u>Contestants must remain at their workstation until the end of each rotation</u> and then promptly go to the next station. If a contestant finishes early during a rotation, they are to remain at their work station. Infractions <u>will result in a point deduction</u>. Contestants are allowed to keep a water bottle with them throughout the competition. (See full list of what's allowed above)
- 9. Evaluation of the completed project will be judged visually based on included criteria.

# **STEEL PRINT**

This will be the print used for the competition on Thursday. Students will be provided copies with specified welds.



# **ALUMINUM PRINT**

This will be the print used for the competition on Friday. Students will be provided copies with specified welds.



# **OFC PRINT**

Item Qty. Description A А 1 0.25 x 6 x 6.5 ALL PROCESSES TO BE COMPLETED WITH THE MATERIALS PROVIDED NOTE: PERFORM A SQUARE CUT ALONG DASHED LINE 4.000 1.500► 1.500-T Ø 2.000 1.500 -SEE NOTE V .500 4.500 2.500 1.500 1 ۲ .500 SkillsUSA 1.500 -.500 SkillsUSA . Welding Contest -2.500 TITLE PAC or OFC SIZE A UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES SHEET 1 OF 1

This will be the print used for the competition on Friday.

# **SCORING BREAKDOWN**

	Weight
GMAW Widget	17.50%
FCAW Widget	17.50%
SMAW Widget	17.50%
GTAW Widget	17.50%
<b>Oxy-Fuel Widget</b>	15.00%
Written Exam	15.00%
<b>TOTAL WEIGHT</b>	100.00%

<u>WPSs</u>

			Skil	sUSA					Page 1 of 1
USA.		Welding Procedure Specification							WPS 10
WPS 108	F	Revision	2	Date 01/03/2	023	By CRV			
By EN			Date	4/19/2016	F	Prequalified	×		
ocess(es)	FCAW-G	_		Type: Mar	nual 🗌	Machine 🗌	Semi-A	\uto 📧	Auto 🗌
PQR(s)	Prequalified								
				<u> </u>					
-Joint, Butt,	Flanged								
Yes 🗆 No	Single Weld	Dout	ble Weld	-					
Material N	/A	-							
ning 0	Root Eace D	imension	N/A						
	Redius ( )			-					
ingle N/A	readius (J	-0) <u>N/A</u>			4				
ige Yes	i No 🖬								
nod <u>N/A</u>	1								
TALS	· ·			POSITION	Groove	A11	E.P.		
spec. <u>A-36</u>	• to	A-36		Vertical Pro	Groove		Fille		
Grade	10	N/A		vendar no	gression.			Down	
5. GIOOVE ( Fillet (ii	) Unlimited	- 10//4		ELECTRICA Transfer Mr	L CHARA	ACTERISTICS	•		
(Pipe.)	N/A	- N/A		Chert			_	C	_
				Short-	Circuiting		ar 📋	opray	
ETALS									
ecification A	15.20			Tungsten E	Hectrode (	GTAW			
ssification E	:71T-1			Size N/	A	Type I	N/A		
_				TECHNIQUE	:				
G				Stringer or	Weave Br	and Both			
	Gas			Multi-pass of	or Single I	Pass (per side	-) N	_ lultiple/	Single
Elux (Class	Composition 7	5%Argon	/25%CO2	Number of	Electrode	s 1	· ·		
Flux (Glass	Gas Cup Size	4/2" 2/4		Electrode Spacing: Longitudinal N/A					
		1/2 - 3/4		_		Latera	N/A		
	60 D F					Angle	e N/A		
emp., win.	ou Deg.r	NIA		Contact Tul	be to Wor	k Distance	1/2" to	3/4"	
ss Op to 3/-	<ul> <li>remperature</li> </ul>			Peening 1	N/A				
1 1/2" to 2 1/	2			Interpass C	leaning	Chip slag a	nd wire	brush	
Over 2-1/	2			POSTWELD	HEAT TH	REATMENT	PWHT	Requir	ed 🗆
Temp Min	- N/A M:			Temp, N/A		Ti	me N/A		
			WELDIN						
Process	Filler Metal Class	Diameter	Cur. Type	Amps	Volts	Travel	Speed	Other I	Notes
FCAW-G	E71T-1	0.045	DCEP	200-260	20-2	26 5-	12	WFS	5:200-500ipm
4									
					1				
	WPS 108           By         EN           occess(es)         PQR(s)           Joint, Butt,         Yes           No         No           Vaterial         N           aning 0         N/A           uge         Yes           hod         N/A           uge         Yes           hod         N/A           spec.         A-30           Grade	WPS 108       F         By       EN         ocess(es)       FCAW-G         PQR(s)       Prequalified         Joint, Butt, Flanged         Yes       No         Yes       No         Ingle       N/A         Radius (J         ungle       N/A         Radius (J         uge       Yes         No       Radius (J         uge       Yes         No       Acoust Face D         Ingle       N/A         Radius (J         uge       Yes         N/A       Radius (J         uge       Yes         No       Madius (J         uge       Yes         No       Madius (J         uge       Yes         No       Madius (J         uge       Yes         Speci.       A-36         to       Madius (J         (Pipe, )       N/A         ETALS       Composition f         Gas       Composition f         Gas       Composition f         Gas       Composition f         te-Flux (Class)       Flow Rate	WPS 108       Revision         By       EN         ocess(es)       FCAW-G         PQR(s)       Prequalified         Joint, Butt, Flanged         Yes       No         Yes       No         No       Single Weld         Material       N/A         aning 0       Root Face Dimension         Ngle       N/A         Radius (J-U)       N/A         uge       Yes         N/A       Radius (J-U)         N/A       Radius (J-U)         Material       N/A         TALS       Spec.         Spec.       A-36         ind       N/A         Fillet (in )Unlimited       -         i: Groove ()       Unlimited         i: Groove ()       N/A         Fillet (in )Unlimited       -         i: Groove ()       N/A         G       Gas         Composition       75%Argon         t-Flux (Class)       Flow Rate         35-45 CFH         Gas Cup Size       1/2" - 3/4         Femp., Min.       60 Deg.F         ess Up to 3/4" Temperature       N/A         r 3/4" to 1-1/2"	WPS 108         Revision         2           By         EN         Date           access(es)         FCAW-G         PQR(s)         Prequalified           PQR(s)         Prequalified	WPS 108       Revision       2       Date 01/03/2         By       EN       Date 4/19/2016       Type: Mar         ocess(es)       FCAW-G       Type: Mar         PQR(s)       Prequalified	WPS 108       Revision       2       Date 01/03/2023         By       EN       Date 4/19/2016       Import 100/07/2023         Ocess(es)       FCAW-G       Type: Manual       Import 100/07/2023         PQR(s)       Prequalified       Type: Manual       Import 100/07/2023         Joint, Butt, Flanged       Import 100/07/2023       Import 100/07/2023       Import 100/07/2023         Yes       No       Single Weld       Double Weld       Import 100/07/2023         Vaterial       N/A       Radius (J-U)       N/A         ingle       N/A       Radius (J-U)       N/A         ge       Yes       No       Import 100/07/2023         hod       N/A       Radius (J-U)       N/A         Spec.       A-36       POSITION         Pose       Yes       No       Position of Groove         Yetical Progression:       Stort-Circuiting       Current: AC       Other         G       Gas       Composition 75%Argon/25%CO2       Stinger or Weave B       Multi-pass or Single         N/A       Interpass Cleaning       N/A       Interpass Cleaning       N/A         G       Gas       Gas       Contact Tube to Wor       Peening N/A       Interpass Cleaning	WPS 108       Revision       2       Date 01/03/2023       By CRV         By       EN       Date       4/19/2016       Prequalified         Operations       FCAW-G       Type: Manual       Machine       Prequalified         PQR(s)       Prequalified       Type: Manual       Machine       Prequalified         Joint, Butt, Flanged	WPS 108       Revision       2       Date 01/03/2023       By CRV         By EN       Date 1/19/2016       Prequalified       Prequalified         coess(es)       FCAW-G       Type: Manual       Machine       Semi-/         Joint, Butt, Flanged	WPS 108       Revision       2       Date 01/03/2023       By CRV         By       EN       Date 01/03/2023       By CRV         By       EN       Date 01/03/2023       By CRV         PGR(s)       Prequalified       Type: Manual       Machine       Semi-Auto         Joint, Butt, Flanged

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SKIIIS	054.		Weldi	ng Proc	edure Specif	ication		WPS 10
WPS No.	WPS 104	F	Revision 4	1	Date 01/03/20	023 By	CRV	
Authorized	By EN			Date	03/03/2020	Pre	qualified	
Welding Pr	ocess(es)	GMAW-S			Type: Man	ual 🗌 Ma	chine 🗌 Semi-/	Auto Auto
Supporting	PQR(s)	Prequalified						
JOINT								
Type T	-Joint				_			
Backing	Yes 🗌 No	Single Weld	Doul	ble Weld	•			
Backing	Material <u>N</u>	/A						
Root Ope	ening <mark>N/A</mark>	Root Face D	imension	N/A	_			
Groove A	ngle N/A	Radius (J	U) N/A			1		-
Back Go	uge Yes	s 🗌 No 🔳						
Met	hod N/A	4						
BASE ME	TALS				POSITION			
Material	Spec. A 3	6 to	A 36		Position of G	iroove <u>Al</u>	Fill	et All
Type or 0	orade	to	N/A		verucai Prog	pression:		Down
Inicknes	s: Groove ( Fillet (i	) <u>N/A</u>	- <u>N/A</u>		ELECTRICAL Transfer Mo	. CHARACT	ERISTICS	
Diameter	(Pipe, )	N/A	- N/A		Chort (		Glebuler 🗖	Seray 🗆
					Current A			
FILLER M	ETALS	15 10			Other N/A	Other N/A		
AWS SP	scification F	B708 6			Tungsten El	ectrode (GT	AW):	
Avv5 Cla	ssincation E	K/03-6			Size N//	Ą	Type N/A	
					TECHNIQUE			
SHIELDIN	G	Gas M20-Art	C.25		Stringer or V	Veave Bead	Stringer	_
N/A		Composition 7	5%Argon	/25%CO2	Multi-pass o	r Single Pas	s (per side)	Single
Electrode	-Flux (Class	) Flow Rate 3	5-45 CFH		Number of E	lectrodes	1	-
N/A		Gas Cup Size	1/2" - 3/4		Electrode Sp	pacing: Lon	gitudinal N/A	
PREHEAT					-		Lateral N/A	
Preheat 1	Temp., Min.	60 Deg.F			Contrast Tub		Angle <u>N/A</u>	2/07
Thickne	ss Up to 3/	4" Temperature	N/A		Contact Tub Resping	e to work D	istance 1/4 to	318
Ove	r 3/4" to 1-1/	2"	N/A		Internass Cl	eaning C	hin slag and wire	abrush
Over	1-1/2" to 2-1/	2"	N/A					
	Over 2-1/	2"	N/A		POSTWELD	HEAT TREA	AIMENI PWH	T Required
Interpass	Temp., Min	N/A Ma	ax. <u>N/A</u>		Temp. N/A		Time N/A	
		Ciller Martial Oliver	Disector	WELDIN	IG PROCEDURE	M-lt-	Transformed	0
.ayer/Pass	Process	Filler Metal Class	Diameter	Cur. Type	Amps	Volts	Travel Speed	Other Notes
All	GMAW	ER70S-6	0.035"	DCEP	90-150	16-20	6-8 ipm	WFS 140-350 ipm

Æ	SkillsUSA						
SkillsUSA. Weld	ing Proc	edure Specif	icatior	า	WPS 101		
WPS No. WPS 101 Revision Authorized By EN Welding Process(es) SMAW	4 Date	Date <u>01/03/2</u> 2/3/2020 Type: Man	023 F	By <u>CRV</u> Prequalified ■ Machine □ Semi-A	Auto 🗌 Auto 🗌		
Supporting PQR(s) Prequalified							
JOINT         Type       Single V Groove         Backing Yes       No       Single Weld       Dou         Backing Material       A-36         Root Opening 0"+1/16"       Root Face Dimension         Groove Angle       45 Deg.       Radius (J-U) N/A         Back Gouge       Yes       No       Method	ble Weld [ 0"	0" +1/1 	16" -				
BASE METALS		POSITION					
Type or Grade         to           Thickness: Groove (in )         1/8         - 3/4           Fillet ( )         Any         - All           Diameter (Pipe, in )         4         - Unlin           FILLER METALS         AWS Specification         A5.1           AWS Classification         E-7018	nited	Vertical Pro ELECTRICAL Transfer Mo Short- Current: J Other <u>N//</u> Tungsten E	Vertical Progression:       Up       Down         ELECTRICAL CHARACTERISTICS       Transfer Mode (GMAW):         Short-Circuiting       Globular       Spray         Current:       AC       DCEP       DCEN       Pulsed         Other       N/A       Tungsten Electrode (GTAW):				
		Size N/	A	Type N/A			
SHIELDING       Flux     Gas       N/A     Composition       N/A     Flow Rate       N/A     Gas Cup Size		TECHNIQUE Stringer or N Multi-pass of Number of I Electrode S	Weave Be or Single I Electrode pacing: L	ead <u>Either</u> Pass (per side) <u>S</u> s <u>1</u> Longitudinal <u>N/A</u>	ingle / Multiple		
PREHEAT           Preheat Temp., Min.         60 Deg.F           Thickness         Up to 3/4"         Temperature           Over 3/4" to 1-1/2"         N/A           Over 1-1/2" to 2-1/2"         N/A		Contact Tut Peening N Interpass C	be to Wor I/A leaning	Angle N/A k Distance N/A Chip slag and wire	brush		
Interpass Temp., Min. N/A Max. N/A		Temp. N/A		Time N/A			
	WELDIN	IG PROCEDURE					
Layer/Pass Process Filler Metal Class Diamete	r Cur. Type	Amps	Volts	Travel Speed	Other Notes		
All SMAW E-7018 1/8	DCEP	90-150	N/A	4-10 ipm			

Skills	USA.		Weld	ling Pro	cedure Spe	ecification		w	
WPS No.	WPS 10	6 F	Revision	2	Date 3/2	0/2022 B	y NP		
Authorized	By GH			Date	3/15/2022	P	requalified		
Welding Pr	ocess(es)	SMAW			Type:	Manual 🔳 N	Aachine 🗌 Semi-	Auto Auto	
Supporting	PQR(s)	Prequalified							
JOINT Type T	-Joint / But	tt						n	
Backing	Yes 🗌 N	lo 📕 Single Weld	Do	uble Weld			60°		
Root Or	ening were	Root Face D	imension	N/A					
Groove		Radius (1	U) N/A		- 1			1	
Back Go	uge Ye		0, 111			1/16"±1/	16*		
BASE ME	TALS				POSITIO	N			
Material	Spec. A-	36 to	A-36		Position	of Groove	All Fill	et All	
Type or (	Grade	to			Vertical	Progression:	Up 🗆	Down	
Thicknes	s: Groove	(in ) N/A	- N/A		ELECTR	ICAL CHARAG	CTERISTICS		
	Fillet	( )Unlimited			Transfe	r Mode (GMAN	W):		
Diameter	(Pipe, in	N/A	- N/A		Sh	nort-Circuiting	Globular 🔲	Spray 🗌	
FILLER M AWS Sp AWS Cla	ETALS acification assification	A5.1 E-6010			Current Other Tungste	AC D		Pulsed 🗌	
					Size	N/A	Type N/A		
SHIELDIN	G				TECHNIC	QUE			
Flux	-	Gas N/A			Stringe	r or Weave Bea	ad Both	_	
N/A		Composition 1	A/A		Multi-pa	Multi-pass or Single Pass (per side) Multiple/Single			
Electrode	e-Flux (Clas	s) Flow Rate	N/A		Numbe	Number of Electrodes 1			
N/A		Gas Cup Size	N/A		Electro	Electrode Spacing: Longitudinal N/A			
PREHEAT	•						Lateral N/A	<b>\</b>	
Preheat	Temp., Min.	N/A			-	The large t	Angle N/A		
Thickne	ss Up to 3	/4" Temperature	N/A		Contac	t Tube to Work	Distance N/A		
Ove	ar 3/4" to 1-1	/2"	N/A		Peening	g N/A	Chip alor and a	- househ	
Over	1-1/2" to 2-1	/2*	N/A		interpa	ss cleaning	Chip stag and wire	e brusn	
	Over 2-1	/2"	N/A		POSTWE	LD HEAT TR	EATMENT PWH	T Required	
Interpase	Temp., Mir	n. N/A Ma	ax. N/A		Temp.	N/A	Time N/A	1	
				WELDI	NG PROCEDU	IRE			
Layer/Pass	Process	Filler Metal Class	Diamete	er Cur. Typ	e Amps	Volts	Travel Speed	Other Notes	
All	SMAW	E-6010	1/8	DCEP	90-115	N/A	4-10 ipm		

	_							
<u></u>	<b>3</b>		Skil	IsUSA			Page 1 of 1	
Skills	USA.		Weldi	ing Proc	edure Speci	fication		WPS 103
WPS No. Authorized Welding Pr Supporting	WPS 103 By GH rocess(es)	GTAW Prequalified	evision	3 Date	Date <u>01/03/2</u> <u>5/15/2011</u> Type: Mar	By <u>C</u> Prequinual Mac	RV ualified ■ hine □ Semi-A	Auto 🗌 Auto 🗌
JOINT								
Type <u>T</u> Backing Backing	-Joint / Corr Yes □ No Material N	ner ) ■ Single Weld	Doul	ble Weld	_		0"	
Root Ope Groove A Back Go Met	ening <u>0</u> Angle <u>30-90</u> uge Yes thod <u>N/A</u>	Root Face Di Radius (J- : □ No ■	imension U) <mark>N/A</mark>	0				ł
BASE ME Material Type or (	BASE METALS           Material Spec.         3003         to         3003           Type or Grade         to         1000         1000					Groove <u>All</u> gression:	Fille	et <u>All</u> Down
Thicknes Diameter	s: Groove ( Fillet (i r (Pipe, )	) Unlimited n )Unlimited N/A	- N/A - - N/A		ELECTRICA Transfer M Short-	L CHARACTE ode (GMAW): Circuiting 🗌	Globular	Spray 🗖
FILLER M AWS Sp AWS Cla	ETALS ecification A essification E	\5.10 R4043			Current: Other <u>N/</u> Tungsten E Size <u>3</u> /	AC DCE A ilectrode (GTA 32"	P DCEN  W): Type EWCe2	Pulsed
SHIELDIN Flux N/A Electrode N/A PREHEAT Preheat Thickne Over	SHIELDING         Flux       Gas 100%Argon         N/A       Composition 100%Argon         Electrode-Flux (Class)       Flow Rate 15-25 CFH         N/A       Gas Cup Size 3/8" Min. (#6)         PREHEAT       Preheat Temp., Min. 60 Deg.F         Thickness Up to 3/4" Temperature 0ver 3/4" to 1-1/2"       N/A					Weave Bead <u>s</u> or Single Pass Electrodes <u>1</u> spacing: Longi be to Work Dis <b>N/A</b> deaning	Stringer (per side) <u>N</u> tudinal N/A Lateral N/A Angle <u>N/A</u> tance <u>N/A</u>	Aultiple/Single
Over	Over 2-1/	2"	N/A N/A		POSTWELD	HEAT TREAT	MENT PWHT	Required
Interpass	Temp., Min.	N/A Ma	x. N/A		Temp. N/	1	Time N/A	
				WELDIN	G PROCEDURE			
Layer/Pass	Process	Filler Metal Class	Diameter	Cur. Type	Amps	Volts	Travel Speed	Other Notes
All	GTAW	ER4043	1/16"	AC	100-175	N/A	4-8 ipm	AC Bal. 65-75%EN AC Hz. 60 - 120
All	GTAW	ER4043	3/32"	AC	100-175	N/A	4-8 ipm	AC Bal. 65-75%EN AC Hz. 60 - 120

# JUDGING GUIDELINES

Note: For GMAW & FCAW contestants will be checked during welding to ensure they are within the limits of the WPS regarding WFS & volts. For SMAW there will be in- weld checks on amps and correct electrode and lastly, we will be checking GTAW for amperage within the WPS.

CONTESTANT NUMBER ( 1000'S/3000'S)	
Welding # ( 1-34)	

	Has the surface slag, spatter, and smoke been <b>removed from all of the</b> ioints and surrounding area?	
	Is the Project assembled in <b>accordance to the drawing?</b>	
	Does the overall workmanship display <b>consistency</b> among all welds? (ALL WELDS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTINUTIES)	
2	Weld #?) <b>Craters Cross Section.</b> All craters should be filled to provide the specified weld size, except for the end of the intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?	
	Weld #?) <b>Overall bead width</b> not to exceed 1/16 in. variation in width (from max to min) for any weld face. Does the weld meet this requirement?	
	Weld #?) <b>Porosity.</b> No visible porosity is acceptable. Does the weld(s) meet this requirement	
	Weld #?) <b>Undercut</b> . Not to exceed 1/32 in depth for a total accumulated length of 1/2" per weld. Does the welds meet this requirement?	
A	Weld #?) <b>Undersized Welds.</b> Weld Size not to be larger by anything greater than 1/16" anywhere along the weld length and no smaller than specified on the drawing. Does the weld size meet this requirement?	
W	Weld #?) <b>Weld Profiles.</b> Fillet welds can slightly concave, flat, or slightly convex with the crown not to exceed 3/32" above flat. Groove welds can be flush with an even crown not to exceed 3/32". Does this weld meet this requirement?	
	Weld #?) <b>Weld/Base metal Fusion.</b> Complete fusion shall exist between base and weld metal. Does the weld display complete fusion with no cold lap?	
	Weld #?) There shall be <b>no arc marks</b> outside the weld area. Does the weld meet this requirement	
	TOTAL	

CONTESTANT NUMBER ( 1000'S/3000'S)	
Welding # ( 1-34)	

	ls the Project cut in accordance to the drawing?	
Π	Does the overall workmanship display consistency among all cuts (ALL CUTS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTINUTIES)	
	Are all three cuts completed?	
	Does the <b>whole cut</b> fit in the complete GD/ND-GD Gauge?	
	Does the <b>square</b> fit in the square GO/NO-GO Gauge?	
	Does the <b>circle</b> fit in the square GD/ND-GD Gauge?	
	Does the <b>line</b> fit in the square GO/NO-GO Gauge?	
	Does the cut quality on the square display minimal undulations that do not	
	exceed an inconsitency greater than 1/32"?	
	Does the cut quality on the circle display minimal undulations that do not	
	exceed an inconsitency greater than 1/32"?	
	Does the cut quality on the line display minimal undulations <b>that do not</b>	
U	exceed an inconsitency greater than 1/32"?	
	TOTAL	

[	CONTESTANT NUMBER ( 1000'S/3000'S)	
V	Nelding # ( 1-34)	

	Has the surface slag, spatter, and smoke been <b>removed from all of the</b>	
	joints and surrounding area?	
	Is the Project assembled in <b>accordance to the drawing?</b>	
	Does the overall workmanship display <b>consistency</b> among all welds? (ALL WELDS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTINUTIES)	
G	Weld #??) <b>Craters Cross Section.</b> All craters should be filled to provide the specified weld size, except for the end of the intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?	
	Weld #??) <b>Overall bead width</b> not to exceed 1/16 in. variation in width (from max to min) for any weld face. Does the weld meet this requirement?	
	Weld #??) <b>Porosity.</b> No visible porosity is acceptable. Does the weld(s) meet this requirement	
	Weld #??) <b>Undercut.</b> Not to exceed 1/32 in depth for a total accumulated length of 1/2" per weld. Does the welds meet this requirement?	
A	Weld #??) <b>Undersized Welds.</b> Weld Size not to be larger by anything greater than 1/16" anywhere along the weld length and no smaller than specified on the drawing. Does the weld size meet this requirement?	
W	Weld #??) <b>Weld Profiles.</b> Fillet welds can slightly concave, flat, or slightly convex with the crown not to exceed 3/32" above flat. Groove welds can be flush with an even crown not to exceed 3/32". Does this weld meet this requirement?	
	Weld #??) <b>Weld/Base metal Fusion.</b> Complete fusion shall exist between base and weld metal. Does the weld display complete fusion with no cold lap?	
	Weld #??) There shall be <b>no arc marks</b> outside the weld area. Does the weld meet this requirement	
	TOTAL	

CONTESTANT NUMBER ( 1000'S/3000'S)	
Welding # ( 1-34)	

	The GTAW Project should <b>show no post weld wire brushing</b> , does this	
	project display no post weld wire brushing?	
	Is the Project assembled in <b>accordance to the drawing?</b>	
G	Does the overall workmanship display <b>consistency</b> among all welds? (ALL WELDS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTINUTIES)	
	Weld #??) Are the welds placed in the <b>proper location</b> ?	
T	Weld #??) <b>Craters Cross Section.</b> All craters should be filled to provide the specified weld size, except for the end of the intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?	
	Weld #??) Are the welds the <b>proper size?</b>	
	Weld #??) Are the welds the <b>proper length?</b>	
Λ	Are all present welds <b>free from porosity</b> ? No visible porosity is acceptable.	
Α	Do the welds meet this Requirement?	
	Did the Welder complete <b>2 welds or more?</b>	
	Did the Welder complete <b>5 welds or more?</b>	
	For projects that have 6 or more welds completed. (For projects with	
W	less weld, or it has been wire brushed, the answer is ND.)("Touchdowns" are	
	when the tungsten is touched to the work piece or the filler metal and an	
	indication can be visible as long as no post wire brushing is performed.) Is the	
	project <b>free</b> from any "touchdowns"?	
	TOTAL	

CONTESTANT NUMBER ( 1000'S/3000'S)	
Welding # ( 1-34)	

	Has the surface slag, spatter, and smoke been <b>removed from all of the</b> <b>inints</b> and surrounding area?	
	Is the Project assembled in <b>accordance to the drawing?</b>	
	Does the overall workmanship display <b>consistency</b> among all welds? (ALL WELDS MUST BE GENERALLY CONSISTENT WITH NO SIGNIFICANT DISCONTINUTIES)	
┣	Weld #??) <b>Craters Cross Section.</b> All craters should be filled to provide the specified weld size, except for the end of the intermittent fillet welds outside of their effective length. Are the weld craters completely filled to the weld size?	
Г	Weld #??) <b>Overall bead width</b> not to exceed 1/16 in. variation in width (from max to min) for any weld face. Does the weld meet this requirement?	
L	Weld #??) <b>Porosity.</b> No visible porosity is acceptable. Does the weld(s) meet this requirement	
	Weld #??) <b>Undercut.</b> Not to exceed 1/32 in depth for a total accumulated length of 1/2" per weld. Does the welds meet this requirement?	
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W	Weld #??) <b>Weld Profiles.</b> Fillet welds can slightly concave, flat, or slightly convex with the crown not to exceed 3/32" above flat. Groove welds can be flush with an even crown not to exceed 3/32". Does this weld meet this requirement?	
	Weld #??) <b>Weld/Base metal Fusion.</b> Complete fusion shall exist between base and weld metal. Does the weld display complete fusion with no cold lap?	
	Weld #??)There shall be <b>no arc marks</b> outside the weld area. Does the weld meet this requirement	
	TOTAL	