

SKILL INDIA

TEST PROJECT-SAMPLE (STATE LEVEL COMPETITION)

WELDER

CATEGORY: MANUFACTURING AND ENGINEERING TECNOLOGY

TABLE OF CONTENT

Page no:

A. Preface	3
B. Test project	4
C. Marking scheme	5
D. Infrastructure list	6-7
E. Instructions for candidate	8
F. Health, Safety and environment	9

Section A

A. Preface

Skill explained:

Welder interprets engineering working drawing and environment, and how he trained to do work on different metals and alloys, understands welding standards, symbols, how to prepare and join different materials with different welding processes

Eligibility criteria: (for India skill 2018 and world skill 2019)

Competitors born on or after 01 January 1997 are eligible to attend the competition, the team consists of two members

Total time duration for project completion: 8 hrs

Total mark: 100

Section B – Sample Test project

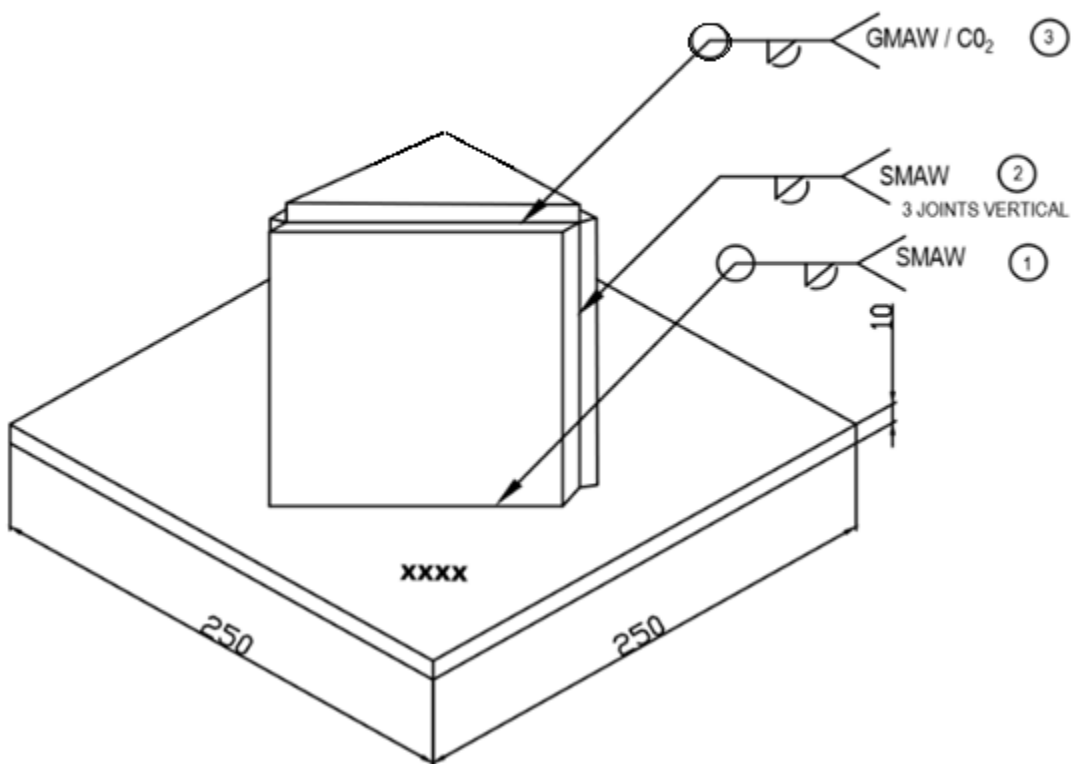
Make a pressure vessel by welding according to the dimensions/specifications given in the figure.

Joint description

No.1, Process-SMAW, fillet weld – D/H position .

No.2, Process-SMAW, Outside corner joint vertical position.

No.3, Process -GMAW/CO₂, fillet weld open corner joint D/H position.



INDIA SKILLS KERALA 2018

State Level Competition - Marking scheme

Name of Competitor:

Registration Number:

Joint no.1	TIME			Uniformity of Fillet size	Free from Distortion	Uniformity of Weld Bead	Surface Finish	Free from Crater	Total	Remarks
	From	To	Total	6	6	6	6	6	30	
				Y/N	Y/N	Y/N	Y/N	Y/N		
Joint no.2	TIME			Uniformity of weld bead	Free from Crack	Surface Finish	Free from Blow hole	Free from Slag inclusion	Total	Remarks
	From	To	Total	6	6	6	6	6	30	
				Y/N	Y/N	Y/N	Y/N	Y/N		
Joint no.3	Time			uniformity of fillet size	uniformity of Weld Bead	Free from Blow hole	Free from Slag Inclusion	Free from Crack	Total	Remarks
	From	To	Total	∞	∞	∞	∞	∞	40	
				Y/N	Y/N	Y/N	Y/N	Y/N		

(In Words.....)

Total (100):

Place:

Name, Signature and Address of Assessor

Date :

Section-D

INFRASTRUCTURE LIST

Materials required

MATERIALS REQUIRED FOR SIX TRAINEES

- | | | |
|--|--------|-------|
| 1) MS plate 250mm X250mmX10mm | 6 nos | |
| 2) MS plate 150mm X150mmX10mm | 18 nos | |
| 3) MS Triangular plate(equilateral)150mm X150mmX150mmX10mmthickness, | | 6 nos |

CONSUMABLES FOR SIX TRAINEES

- | | | |
|--|----------------|--|
| 1) MS electrodes E7018 (ador) 2.5 mm dia | 4 pkts | |
| 2) MS electrodes E7018 (ador) 3.2 mm dia | 5 pkts | |
| 3) MS filler wire ER 70S6 (1.2mm, dia) 15 kg | 03 wire spools | |
| 4) AG4 grinding wheel (4") | 20 nos | |
| 5) AG4 cutting wheel (4") | 20 nos | |
| 6) AG4 buffing wheel (4") | 6 nos | |
| 7) Co2 gas cylinder (filled) | 4 nos | |
| 8) Tread seal tape | 4 nos | |
| 9) GMAW contact tip dia 1.2mm | 10 nos | |
| 10) Chipping hammer (welders) | 6 nos | |
| 11) Wire brush (welders use) | 6 nos | |
| 12) Metal marker(paint marker) | 2 nos | |
| 13) Chalk pencil | 1pkt | |
| 14) Anti spatter spray (Co2 welding) | 3 bottle | |
| 15) Flat chisel 6" X 1"(cutting edge) | 6nos | |
| Emery paper 150 grade | 12nos | |

SAETY ACCESSORIES FOR SIX TRAINEES

- | | | |
|---|---------|--|
| 1. Welding helmet | 6nos | |
| 2. Welding filter glass, shade no.11 | 10nos | |
| 3. Welding plain glass (white) | 20nos | |
| 4. Safety goggles (plain glass) | 6nos | |
| 5. Ear pug (industrial purpose) | 10nos | |
| 6. Welding glouse 14" (chrome leather) | 6 pair | |
| 7. Cotton glouse | 6pair | |
| 8. Leather apron | 6nos | |
| 9. Leather hand sleeves (six pairs, left and right) | 6pair | |
| 10. Leather leg guard | 6 pairs | |

Equipment, tools required

1. GMAW Machine (300- 400 AMPS) with wire feeder unit and accessories	4 nos
2. SMAW machine with all accessories	4nos
3. Gas flow meter	4 nos
4. Cylinder key	4 nos
5. Co2 gas regulator with pre heater	4 nos
6. Gas flow meter	4 nos
7. Cylinder key	4 nos
8. AG4 grinder (portable hand grinder)	4nos
9. Bench grinder(152mm wheel dia)	1 nos
10. Electrode main oven	1 nos
11. Electrode holding oven	1 nos
12. Quieter oven	3 nos
13. Co2 fire extinguishers	3 nos

HAND TOOLS

1) Steel rule 300 mm	4 nos
2) Scriber	4nos
3) Centre punch	4 nos
4) Try square 6"	4 nos
5) Ball peen hammer	4 nos
6) Screw driver 12"	4 nos
7) Wire cutter	4 nos
8) Letter punch	1 nos
9) Number punch	1 nos
10) Half round file 12"	4 nos
11) Tongs 450 mm	4 nos
12) Weld gauge	1 nos
13) Bevel protractor	1 nos
14) Magnifying glass	1 nos
15) Double end spanner	1 set
16) C- clamps 6"	6nos

- 1. Any process any position may be used for tack welding.**
- 2. All plates and pipes are to be tacked before starting welding.**
- 3. All welding must carried out with the base plate 'A' in the flat position.**
- 4. Fillet weld leg length should be 8 mm (+2.0 mm/-0.00 mm) for 10 mm plates, and leg length 4mm (+1.00 mm /-1.00 mm), for 3mm plates.**
- 5. Outside corner weld Radii: 9.0 mm with tolerance (+1.00 mm /-1.00 mm),**
- 6. Root gap should be your choice.**
- 7. Grinding not allowed (once you started to weld joints)**
- 8. Cleaning can be done with buffing tool**
- 9. XXXX – competitor's roll number.**

1. All accredited participants and supporting volunteers will abide by rules and regulations with regards to health, safety, and environment of the competition venue
2. All participants, technicians, and supporting staff will wear the required protective personal clothing
3. All participants will assume liability for all risks of injury and damage to property, loss of property, which might be associated with or result from participation in the event. The organizers will not be liable for any damage, however in case of injury, the competitors will immediately inform to the immediate organizer for medical attention.
4. All participants should wear the following PPE
 - a) Welding helmet with correct lens
 - b) Leather hand gloves
 - c) Leather apron
 - d) Leather apron
 - e) Leather hand sleeves
 - f) Leather leg guard
 - g) Safety glass
 - h) Steel toe safety shoe