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# Sample Test Project

**District / Zonal Skill Competitions**

**Skill- Welding**

*Category: Manufacturing & Engineering Technology*

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## Section - A

### *A. Preface*

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#### **Skill Explained:**

Welder interprets engineering working drawing and environment and trained to work on exotic alloys, standards and symbols to prepare and join a range of metals of various gauges using electrical and gas shielded process.

Welding professionals need to have a thorough knowledge and understanding of various welding equipment and processes, metallurgy and electrical processes in order to choose the correct process. It is essential they understand the safe working procedures and personnel protective equipment.

#### **Eligibility Criteria (for IndiaSkills 2018 and WorldSkills 2019):**

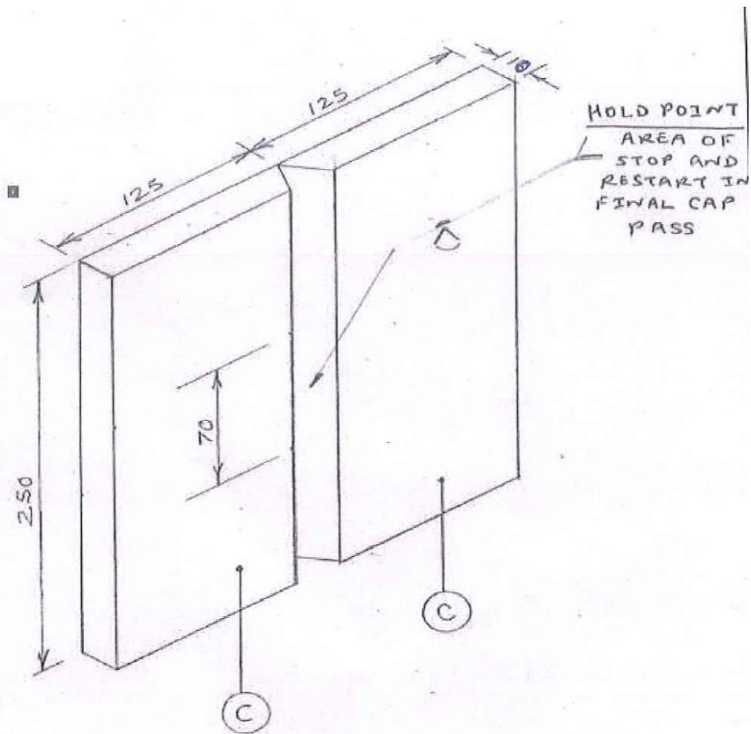
Competitors born on or after 01 Jan 1997 are eligible to attend the Competition. The team consists of 2 competitors.

#### **Total Duration: 2 Hrs**

## Section - B

### B. Test Project

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TIME FOR THE MODULE 2 HOURS

#### BUTT WELDING OF 10 MM PLATE CARBON STEEL PLATE

2 PLATES; 10 MM THICKNESS X125 X250 - C

ROOT GAP OF YOUR CHOICE

WELDING POSITION: 3G VERTICAL UP

WELDING PROCESSE; ROOT PASS; SMAW.

FIL & CAP ; SMAW

## Section – C

### C. Marking Scheme

**Marking Scheme-** The Assessment is done by awarding points by adopting two methods, Measurement and Judgments

- Measurement –One which is measurable
- Judgments-Based on Industry expectations
- Aspects are criteria's which are judged for assessment

#### Example-Judgment Marking

If maximum marks for Judgment criteria is 1 and if all 3 Experts (Juries) give 3 points to a candidate, the candidate will get 1 mark for that aspect. If 2 Experts give 3 and 1 Expert gives 2 points, then candidate will get  $(3+3+2)/9*1 = 0.89$  marks for that aspect out of 1 mark.

IN welding all marking is **only Measurement**.

Sub Criterion		Judgmental Assessment of 10 mm Plate			
Competitor Name					
Aspect ID	Max Mark	Aspect of Sub Criterion-Description	Requirement /Normal Size	Result or Actual Value	Mark Awarded
<b>M1</b>	<b>10</b>	Butt weld free from undercut	Yes/No		
		Undercut-0.5 mm maximum depth allowed.			
<b>M2</b>	<b>20</b>	Butt weld joint free from excessive face reinforcement	Yes/No		
		Allow 2.5 mm or less			
<b>M3</b>	<b>20</b>	Butt joint weld widths uniform and regular?	Yes/No		
		Allow 2mm variation in width			
<b>M4</b>	<b>10</b>	Butt weld joint free from arc strike	Yes/No		
<b>M5</b>	<b>20</b>	Butt weld free from excessive root concavity	Yes/No		
		Allow 0.5 mm maximum			
		Zero mark if 100% penetration is not achieved			
<b>M6</b>	<b>20</b>	Butt weld joint free from excessive root reinforcement	Yes/No		
		Allow 2mm maximum			
		Zero mark if 100% penetration is not achieved			
	<b>100</b>				

## Section - D

### D. Infrastructure List

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#### **Materials required**

1. Carbon steel plate 250x1125x10 mm with 30 Degree bevel angle 2 Nos.
2. MS electrode E7018,dia 2.5 mm
3. MS electrode E7018,dia 3.15 mm

#### **Tools and equipment's required**

1. Welding rectifier set 300 A
2. Angle gauge
3. Angle grinder 4"&5"
4. Flat file 300 mm
5. Wire brush
6. Chipping hammer
8. Flat tongs
9. Hammer
10. Electrode oven
11. Grinding Disc 4" or 5"

## Section – E

### **E. Instructions for candidates**

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#### **Competitors must comply with the following;**

1. Must comply with all the standard safety laws and hygiene in the welding and construction industry.
2. Must wear all personal protective equipment when carrying out welding
3. Must display the safe and proper use of all the equipment used in the
4. Welding and Construction industry.
5. Should know the safe assembly areas.
6. If not sure to operate any piece of safety equipment of machine should ask the shop floor manager.
7. The competitor should be able to carry out his task unaided.

## Section – F

### F. Health, Safety, and Environment

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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 personnel 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 competitor will immediately inform the immediate organizer for medical attention.

#### **All participants should wear the following PPE**

1. Welding Helmet with correct Lens
2. Leather Hand Gloves
3. Leather Apron
4. Leather Hand sleeves
5. Leather Leg Guard
6. Safety Glasses
7. Steel toe Safety shoes