

# WELDER

## Assessment Package

### National Vocational Certificate Level 2

Version 1 - March 2014

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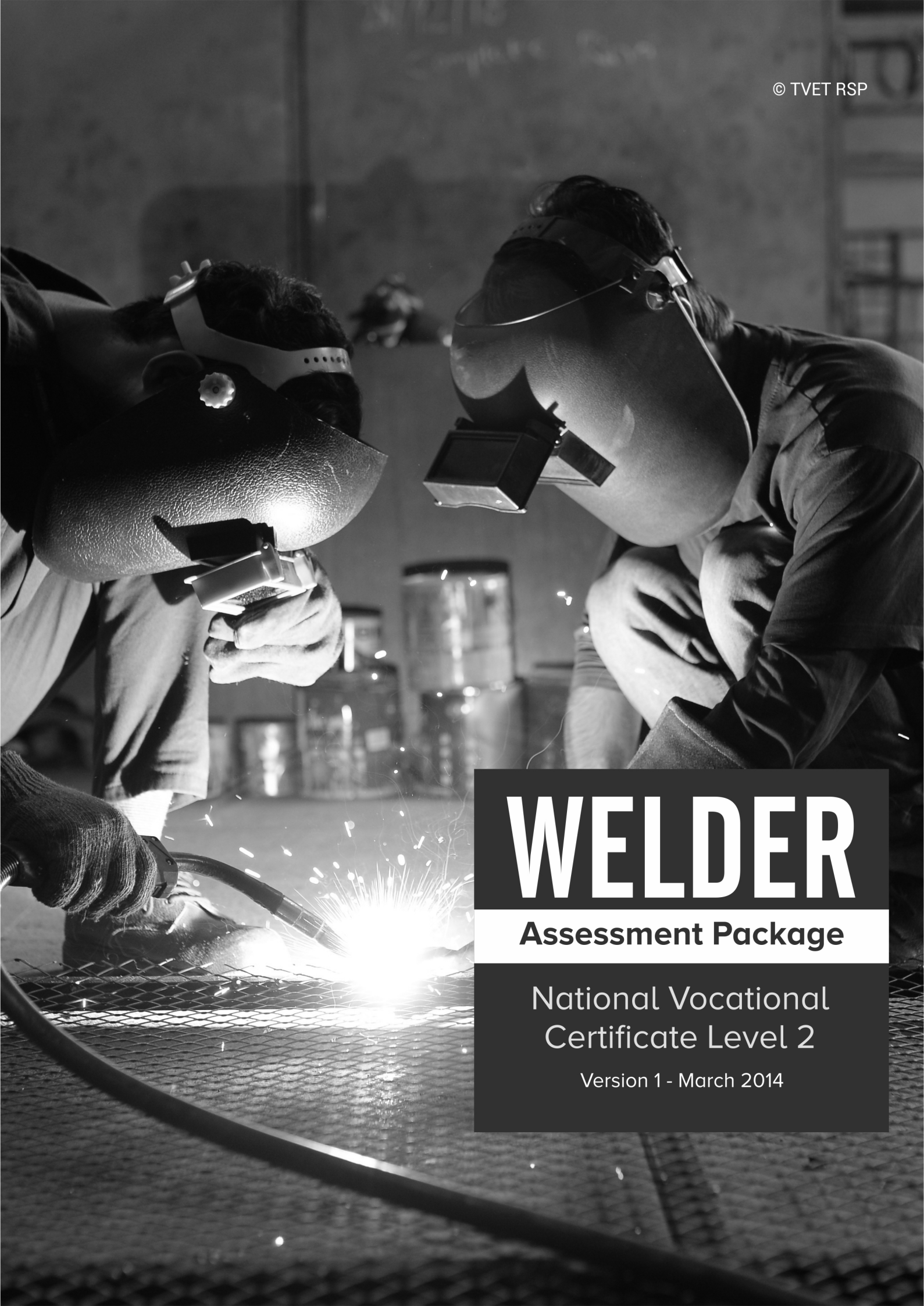
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**Document Version**

July, 2015

**Islamabad, Pakistan**



# WELDER

**Assessment Package**

National Vocational  
Certificate Level 2

Version 1 - March 2014



<b>ASSESSMENT MATERIAL</b>  <b>EVIDENCE GUIDE</b>	<h1>PERFORM SHIELDED METAL ARC WELDING (SMAW) OPERATIONS</h1>
<b>Qualification</b> Welder <b>Level: 2</b> <b>Credit: 14</b> <b>Version: 1</b>	

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# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD			DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY				DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD PERFORM SHIELDED METAL ARC WELDING (SMAW) OPERATIONS		
Practical skill demonstration			✓	<ul style="list-style-type: none"> <li>Adopt and follow safety rules</li> <li>Base metal preparation</li> <li>Perform SMAW operation in 3 hours timeframe</li> <li>Identify and repair welding defects</li> </ul>		
Knowledge Assessment	✓	✓		<ul style="list-style-type: none"> <li>Answer the oral questions your Assessor may have during the practical assessment</li> </ul>		
Other requirements	✓	✓		<ul style="list-style-type: none"> <li>Complete all course assignments</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate Name:.....Father Name .....

**ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.**

### GUIDANCE TO CANDIDATE

To meet this standard you are required to:

- Make a welding : single V- Butt joint in vertical upward position (Material: M.S plate size 200X50X9.(mm) using SMAW process according to AWS standards within **three hours** timeframe.

For this assessment you are required to:

- Complete practical assessment tasks to make a welding joint using SMAW process according to AWS standard in **three hours**.
- Answer any questions your Assessor may have for you.

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task to make a welding joint using SMAW process according to AWS standards under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements               <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirement</li> <li>• Prepare the required welding machine as per job requirement               <ul style="list-style-type: none"> <li>✓ Use DC Current</li> <li>✓ Polarity selection as per weld requirement</li> </ul> </li> <li>• Prepare the joint as per specification               <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange electrode and pre heating equipment as per WPS</li> <li>✓ Tacking and welding of joint as per WPS</li> </ul> </li> <li>• Apply post weld cleaning of the job following the process               <ul style="list-style-type: none"> <li>✓ Removal of slag</li> <li>✓ Removal of spatters</li> </ul> </li> <li>• Perform visual inspection and rectify visual imperfections of weld area</li> <li>• Report to supervisor in case of any contingency</li> </ul>
<p><b>2. Answer any questions your Assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate Name ..... Father Name.....

### INSTRUCTION FOR ASSESSOR

THIS SECTION CONTAINS MODEL ANSWERS AND/OR MINIMUM EVIDENCE REQUIREMENTS. Where model answers are provided for the Assessor, the candidate's response is not required to be identical but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task to make a welding joint using SMAW process according to AWS standards under observation by an assessor</b>	During a 3 hours practical assessment, under observation by an assessor, the candidate correctly carried out:			
Arranged the workplace according to the job requirements	Welding booth/fire blanket			
	Welding machine and accessories			
	Electric supply			
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement			
Prepared the required welding machine as per job requirement	Use DC Current			
	Polarity selection as per weld requirement			
Prepared the joint as per specification	Prepared and cleaned the job			
	Arranged electrode and pre heating equipment as per WPS			
	Tacking and welding of joint as per WPS			
Applied post weld cleaning of the job following the process	Removal of slag			
	Removal of spatters			
Performed visual inspection and rectified visual imperfections of weld area	Performed visual inspection and rectified visual imperfections of weld area			
<b>2. Answer any questions their Assessor may have during the practical assessment</b>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. (attach extra sheet if needed)</i></p>			

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding:</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment</li> <li>List of consumables</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> .

<b>2. List of tools and equipment required (For five candidates)</b>		
<b>S. No</b>	<b>Items</b>	<b>Quantity</b>
1	Welding Machine with accessories	03
2	Grinder	03
3	Chipping Hammer	05
4	Cutter / Hack Saw	05
5	Electrode Oven	05
6	Jigs & Fixtures	05
7	Bevelling Machine	01
8	Hand Gloves	05
9	Helmet/Face Shield	05
10	Welding Table	03
11	Steel foot rule	05
12	Try square	05
13	Safety Shoes	05
14	welding Apron	05
15	Ear plug	05
16	Fume mask	05
17	Tong	05
18	Fire Blanket	05
19	File	05
20	Pencil Grinder	03

<b>3. List of consumables required (For five candidates)</b>		
<b>S. No</b>	<b>Items</b>	<b>Quantity</b>
1	Material (MS plate){200*50*9*}mm	02 No
2	Electrode 10 SWG 7018	20 No
3	Power Brush	01 No
4	Cutting Disk	01 No
5	Grinding Disk	01 No
6	Pencil Grinder Stone	02 No





<b>ASSESSMENT MATERIAL</b>  <b>EVIDENCE GUIDE</b>	<h1>PERFORM GAS METAL ARC WELDING (GMAW) OPERATIONS</h1>
<b>Qualification</b> Welder <b>Level: 2</b> <b>Credit: 15</b> <b>Version: 1</b>	

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# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD			DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY				DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM GAS METAL ARC WELDING (GMAW) OPERATIONS		
Practical skill demonstration			✓	<ul style="list-style-type: none"> <li>Adopt and follow safety rules</li> <li>Base metal preparation</li> <li>Perform GMAW operation in 3 hours timeframe</li> <li>Identify and repair welding defects</li> </ul>		
Knowledge Assessment	✓	✓		<ul style="list-style-type: none"> <li>Answer the oral questions your Assessor may have during the practical assessment</li> </ul>		
Other requirements	✓	✓		<ul style="list-style-type: none"> <li>Complete all course assignments</li> </ul>		

# 2

# CANDIDATE ASSESSMENT

Candidate Name:.....Father Name .....

**ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.**

## GUIDANCE TO CANDIDATE

To meet this standard you are required to:

- Make a welding : single V- Butt joint in vertical upward position (Material: M.S plate size 200X50X9.(mm) using GMAW process according to WPS standards within **three hours** timeframe.

For this assessment you are required to:

- Complete practical assessment tasks to make a welding joint using GMAW process according to WPS standard in **three hours**.
- Answer any questions your Assessor may have for you.

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task to make a welding joint using SMAW process according to AWS standards under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly.</p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements               <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirement</li> <li>• Prepare the required welding machine as per job requirement               <ul style="list-style-type: none"> <li>✓ Use DC Current</li> <li>✓ Polarity selection as per weld requirement</li> </ul> </li> <li>• Prepare the joint as per specification               <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange Filler wire and pre heating equipment as per WPS</li> <li>✓ Use Carbon Dioxide Gas</li> <li>✓ Adjust the pressure Carbon Dioxide Gas</li> <li>✓ Tacking and welding of joint as per WPS</li> </ul> </li> <li>• Apply post weld cleaning of the job following the process               <ul style="list-style-type: none"> <li>✓ Removal of slag</li> <li>✓ Removal of spatters in Mig Torch with anti-spatter spray</li> </ul> </li> <li>• Perform visual inspection and rectify visual imperfections of weld area</li> <li>• Report to supervisor in case of any contingency</li> </ul>
<p><b>2. Answer any questions your Assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate Name ..... Father Name.....

### INSTRUCTION FOR ASSESSOR

THIS SECTION CONTAINS MODEL ANSWERS AND/OR MINIMUM EVIDENCE REQUIREMENTS. Where model answers are provided for the Assessor, the candidate's response is not required to be identical but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task to make a welding joint using SMAW process according to AWS standards under observation by an assessor</b>	During a <b>three hours</b> practical assessment, under observation by an assessor, the candidate correctly carried out:			
Arranged the workplace according to the job requirements	Welding booth/fire blanket			
	Welding machine and accessories			
	Electric supply			
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement			
Prepared the required welding machine as per job requirement	Use DC Current			
	Polarity selection as per weld requirement			
Prepared the joint as per specification	Prepared and cleaned the job			
	Arranged electrode and pre heating equipment as per WPS			
	Tacking and welding of joint as per WPS			
Applied post weld cleaning of the job following the process	Removal of slag			
	Removal of spatters			
Performed visual inspection and rectified defects identified	Performed visual inspection and rectified defects identified			

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<p><b>2. Answer any questions their Assessor may have during the practical assessment</b></p>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. (attach extra sheet if needed)</i></p>			

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment</li> <li>List of consumables</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> .

<b>2. List of tools and equipment required (For five students)</b>		
S. No	Items	Quantity
1	Mig Welding Machine with accessories	3N0
2	Grinder	3N0
3	Chipping Hammer	5N0
4	Cutter / Hack Saw	5N0
5	Co2 Gas cylinder	3N0
6	Jigs & Fixtures	5N0
7	Bevelling Machine	2N0
8	Hand Gloves	5N0
9	Helmet/Face Shield	5N0
10	Welding Table	5N0
11	Steel foot rule	5N0
12	Try square	5N0
13	Safety Shoes	5N0
14	welding Apron	5N0
15	Ear plug	5N0
16	Fume mask	5N0
17	Tong	5N0
18	Fire Blanket	5N0
19	File	5N0
20	Pencil Grinder	5N0
21	Mig welding Regulator	3N0
22	Mig Pliers	3N0
23	Adjustable Wrench	3N0
24	Cylinder Key	3N0

<b>3. List of consumables (For five students)</b>		
S. No	Items	Quantity
1	Material (MS plate){200*50*9*}mm	10 No
2	Wire Feeder spool	3No
3	Power Brush	03No
4	Cutting Disk	03No
5	Grinding Disk	03No
6	Pencil Grinder Stone	03No
7	Anti-spatter Spray	03No
8	Co2 Gas	03N0



<b>ASSESSMENT MATERIAL</b>  <b>EVIDENCE GUIDE</b>	<h1>PERFORM GAS TUNGSTEN ARC WELDING (GTAW) OPERATIONS</h1>
<b>Qualification</b> Welder <b>Level: 2</b> <b>Credit: 20</b> <b>Version: 1</b>	

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<b>ASSESSMENT RESULTS SUMMARY FORM</b>	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to <b>NAVTTCC</b>
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# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD			DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY				DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM GAS TUNGSTEN ARC WELDING (GTAW) OPERATIONS		
Practical skill demonstration			✓	<ul style="list-style-type: none"> <li>Adopt and follow safety rules</li> <li>Base metal preparation</li> <li>Perform GTAW operation in 2 Hours timeframe</li> <li>Identify and repair welding defects</li> </ul>		
Knowledge Assessment	✓	✓		<ul style="list-style-type: none"> <li>Answer the oral questions your Assessor may have during the practical assessment</li> </ul>		
Other requirements	✓	✓		<ul style="list-style-type: none"> <li>Complete all course assignments</li> </ul>		



# 2

# CANDIDATE ASSESSMENT

Candidate Name:.....Father Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to:

- Make a welding : single V- Butt joint in vertical upward position (Material: M.S plate size 200X50X9.(mm) using GTAW process according to WPS standards within **two hours** timeframe.

For this assessment you are required to:

- Complete practical assessment tasks to make a welding joint using GTAW process according to WPS standard within **two hours**.
- Answer any questions your Assessor may have for you.

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task of making a welding joint using GTAW process according to WPS standards under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements               <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ TIG Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirement</li> <li>• Prepare the required welding machine as per job requirement               <ul style="list-style-type: none"> <li>✓ Use Direct Current electrode Negative</li> <li>✓ Select tungsten electrode as per weld metal</li> <li>✓ Choose the appropriate ceramic cup</li> </ul> </li> <li>• Prepare the joint as per job requirement               <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange ER-70s Filler wire and pre heating equipment as per WPS</li> <li>✓ Use Argon or Helium Gas</li> <li>✓ Adjust the Gas pressure 15L per mint</li> <li>✓ Plate Bevel edge size 2mm as per WPS</li> <li>✓ Keep Bevel edge gaps 4mm between the two plate</li> <li>✓ Set the current on welding machine</li> <li>✓ Tacking and welding of joint as per WPS</li> <li>✓ Apply first root pass then hard pass or filling pass and then capping pass to complete the job</li> </ul> </li> <li>• Apply post weld cleaning of the job               <ul style="list-style-type: none"> <li>✓ Cleaning weld bead with steel wire brush</li> </ul> </li> <li>• Perform visual inspection, bend test, X-ray and DPT and rectify identify defects</li> <li>• Report to supervisor in case of any contingency</li> </ul>
<p><b>2. Answer any questions your Assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate Name ..... Father Name.....

### INSTRUCTION FOR ASSESSOR

THIS SECTION CONTAINS MODEL ANSWERS AND/OR MINIMUM EVIDENCE REQUIREMENTS. Where model answers are provided for the Assessor, the candidate's response is not required to be identical but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task to make a welding joint using SMAW process according to AWS standards under observation by an assessor</b>	During a <b>three hours</b> practical assessment, under observation by an assessor, the candidate correctly carried out:			
Arranged the workplace according to the job requirements	Welding booth/fire blanket			
	Tig Welding machine and accessories			
	Electric supply			
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement			
Prepared the required welding machine as per job requirements	Used Direct Current electrode Negative			
	Selected tungsten rod as per weld metal			
	Choose the appropriate ceramic cup no			
Prepared the joint as per job requirements	Joint preparation and cleaning			
	Arranged Er-70s Filler wire and pre heating equipment as per WPS			
	Used Argon or Helium Gas			
	Adjust the Gas pressure on Argon flow meter 15L per minute			
	Plate bevel edge size 2mm as per WPS			
	Bevel edge gaps 4mm between the two plate			
	Adjusted current on welding machine			
	Tacked and welding of joint as per WPS			
Applied post weld cleaning of the job following the process	Cleaning weld bead on steel wire brush			
Performed visual inspection, bend test, X-ray and DPT and rectified identified defects	Performed visual inspection, bend test, X-ray and DPT and rectified identified defects			

Reported to supervisor in case of any contingency	Reported to supervisor in case of any contingency			
<b>2. Answer any questions their Assessor may have during the practical assessment</b>	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.  <i>Assessor to document below all questions asked and candidate answers. (attach extra sheet if needed)</i>			

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding:</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment</li> <li>List of consumables</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real times</b> .

<b>2. List of tools and equipment required (For five students)</b>		
<b>S. No</b>	<b>Items</b>	<b>Quantity</b>
1	Tig Welding Machine with accessories	3N0
2	Tig welding Torch	3N0
3	Grinder	5N0
4	Cutter / Hack Saw	5N0
5	Argon Gas cylinder	3N0
6	Jigs & Fixtures	5N0
7	Bevelling Machine	2N0
8	Tig welding Gloves	5N0
9	Helmet/Face Shield	5N0
10	Welding Table	5N0
11	Steel foot rule	5N0
12	Try square	5N0
13	Safety Shoes	5N0
14	welding Apron	5N0
15	Ear plug	5N0
16	Fume mask	5N0
17	Tong	5N0
18	Fire Blanket	5N0
19	Flate File	5N0
20	Pencil Grinder	5N0
21	Tig welding Gas Regulator	3N0
22	Cylinder Key	3N0
23	Adjustable wrench	3N0

<b>3. List of consumables for five candidates</b>		
<b>S. No</b>	<b>Name of consumable (Items)</b>	<b>Quantity</b>
1	MS plate{200*50*9*}mm	10 No
2	Er-70s filler wire	3No
3	Steel wire Brush	03No
4	Cutting Disk	03No
5	Grinding Disk	03No
6	Pencil Grinder Stone	03No
7	Tungsten Rod 2.4mm	03N0
8	Argon gas fill cylinder	03N0
9	Ceramic cup	12 Nos



<b>ASSESSMENT MATERIAL</b>  <b>EVIDENCE GUIDE</b>	<h2 style="margin: 0;">PERFORM SUBMERGED ARC WELDING (SAW) OPERATIONS</h2>
<b>Qualification</b> Welder <b>Level: 2</b> <b>Credit: 10</b> <b>Version: 1</b>	

<b>CONTENTS</b>	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/equipment, material and context of assessment
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<b>ASSESSMENT AND ASSESSOR DETAILS</b>	<b>Competent</b> <input type="checkbox"/> <span style="margin-left: 200px;"><b>Not Yet Competent</b> <input type="checkbox"/></span>																			
	<b>Assessment</b> <input type="checkbox"/> <span style="margin-left: 200px;"><b>Re-Assessment</b> <input type="checkbox"/></span>																			
	Assessor Name: ..... Assessor Code ..... Assessor Signature ..... Date <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center; width: 80px;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td>DD</td> <td>MM</td> <td colspan="6"></td> <td>YYYY</td> </tr> </table>											DD	MM							YYYY
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<b>CANDIDATE DETAILS</b>	Candidate Name: ..... <small style="margin-left: 100px;">First Name</small> <small style="margin-left: 200px;">Last Name</small>																				
	Father Name: .....																				
	Institute Name and District: .....																				
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Candidate Signature: .....																					

<b>ASSESSMENT RESULTS SUMMARY FORM</b>	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to <b>NAVTTCC</b>
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# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD			DESIRED OUTCOMES	RESULT	
NATURE OF ACTIVITY	WRITTEN	ORAL	OBSERVATION	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM SUBMERGED ARC WELDING (SAW) OPERATIONS	COMPETENT	NOT YET COMPETENT
Practical skill demonstration			✓	<ul style="list-style-type: none"> <li>Adopt and follow safety rules</li> <li>Base metal preparation</li> <li>Perform SAW operation in 3 hours timeframe</li> <li>Identify and repair welding defects</li> </ul>		
Knowledge Assessment	✓	✓		<ul style="list-style-type: none"> <li>Answer the oral questions your Assessor may have during the practical assessment</li> </ul>		
Other requirements	✓	✓		<ul style="list-style-type: none"> <li>Complete all course assignments</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate Name ..... Father Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to:

- Make a welding Butt joint in flat position (Material: M.S plate size 200X50X9.(mm) using **SAW** process according to WPS standards within **three hours** timeframe.

For this assessment you are required to:

- Complete practical assessment tasks to make a welding joint using SAW process according to WPS standard in **three hours**.
- Answer any questions your Assessor may have for you.

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task to make a welding joint using SAW process according to WPS standards under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements               <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirements</li> <li>• Prepare the required welding machine as per job requirement               <ul style="list-style-type: none"> <li>✓ Use DC Current</li> <li>✓ Polarity selection as per weld requirement</li> <li>✓ Travel speed</li> <li>✓ Flux types</li> <li>✓ Arc Voltage</li> </ul> </li> <li>• Prepare the joint as per given specification               <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange electrode and pre heating equipment as per WPS</li> <li>✓ Tacking and welding of joint as per WPS</li> </ul> </li> <li>• Apply post weld cleaning of the job following the process               <ul style="list-style-type: none"> <li>✓ Removal of slag</li> <li>✓ Removal of spatters</li> </ul> </li> <li>• Perform visual inspection and DPT and also rectify defects</li> <li>• Report to supervisor in case of any contingency</li> </ul>
<p><b>2. Answer any questions your Assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate Name ..... Father Name.....

### INSTRUCTION FOR ASSESSOR

THIS SECTION CONTAINS MODEL ANSWERS AND/OR MINIMUM EVIDENCE REQUIREMENTS. Where model answers are provided for the Assessor, the candidate's response is not required to be identical but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete Practical task to make a welding joint using SAW process according to WPS standards under observation by an assessor</b>	During a three hours practical assessment, under observation by an assessor, the candidate correctly carried out:			
Arranged the workplace according to the job requirements	Welding booth/fire blanket			
	Welding machine and accessories			
	Electric supply			
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement			
Prepared the required welding machine as per job requirement	Use DC Current			
	Polarity selection as per weld requirement			
	Travel speed			
	Flux types			
	Arc Voltage			
Prepared the joint as per given specification	Prepared and cleaned the job			
	Arranged electrode and pre heating equipment as per WPS			
	Tacking and welding of joint as per WPS			
Applied post weld cleaning of the job following the process	Removal of slag			
	Removal of spatters			
Performed visual inspection and DPT and also rectified defects	Performed visual inspection and DPT and also rectified defects			
Reported to supervisor in case of any contingency	Reported to supervisor in case of any contingency			



ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>2. Answer any questions their Assessor may have during the practical assessment</b>	Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.  <i>Assessor to document below all questions asked and candidate answers. (attach extra sheet if needed)</i>			

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding:</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment</li> <li>List of consumables</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> .

<b>2. List of tools and equipment required (For five candidates)</b>		
<b>S. No</b>	<b>Items</b>	<b>Quantity</b>
1	SAW Welding Machine with accessories	02 Nos
2	Grinder	02 Nos
3	Chipping Hammer	05 Nos
4	Cutter / Hack Saw	01 Nos
5	Flux Dryer	01 Nos
6	Jigs & Fixtures	05 Nos
7	Bevelling Machine	01 Nos
8	Hand Gloves	05 Sets
9	Helmet/Face Shield	05 Nos
10	Welding Table	02 Nos
11	Steel foot rule	05 Nos
12	Try square	05 Nos
13	Safety Shoes	05 Sets
14	welding Apron	05 Nos
15	Ear plug	05 Sets
16	Fume mask	05 Nos
17	Welding plier/ Tong	05 Nos
18	Fire Blanket	05 Nos
19	File	05 Nos
20	Pencil Grinder	03 Nos
21	Fire Extinguisher	01 Nos
22	Exhaust Fan	02 Nos

<b>3. List of consumables for Five candidates</b>		
<b>S. No</b>	<b>Items</b>	<b>Quantity</b>
1	MS plate{200*50*9*}mm	10 Pieces
2	Wire Spool (wire dia: 2.4mm)	01 Roll
3	Granular Flux	05 Kg
4	Power Brush	01 Nos
5	Cutting Disk	01 Nos
6	Grinding Disk	01 Nos
7	Pencil Grinder Stone	02 Nos
8	First aid box	02 Nos



<b>ASSESSMENT MATERIAL</b>  <b>EVIDENCE GUIDE</b>	<h1 style="margin: 0;">WELDER</h1>
<b>Qualification</b> Welder <b>Level: 2</b> <b>Credit: 80</b> <b>Version: 1</b>	

<b>CONTENTS</b>	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgement Guide 4. List of required tools/equipment, material and context of assessment
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<b>ASSESSMENT AND ASSESSOR DETAILS</b>	<b>Competent</b> <input type="checkbox"/> <span style="float: right;"><b>Not Yet Competent</b> <input type="checkbox"/></span>																					
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<b>CANDIDATE DETAILS</b>	<b>Candidate Name:</b> _____ <div style="display: flex; justify-content: space-between; font-size: 8px;"> <span>First Name</span> <span>Last Name</span> </div>																				
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	<b>OR</b> <b>Registration Number issued by Assessment Body:</b> _____																				
<b>Gender</b> Male <input type="checkbox"/> Female <input type="checkbox"/> Transgender <input type="checkbox"/>																					
<b>Candidate Consent</b> I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.																					
<b>Candidate Signature:</b> _____																					

<b>ASSESSMENT RESULTS SUMMARY FORM</b>	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to <b>NAVTTTC</b>
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<b>NAVTTTC OFFICE ONLY</b>	1. DATE FORM RECEIVED: <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="text-align: center; font-size: 8px;">DD</td> <td style="text-align: center; font-size: 8px;">MM</td> <td colspan="4"></td> <td style="text-align: center; font-size: 8px;">YYYY</td> </tr> </table>											DD	MM					YYYY	2. DATE ENTERED INTO DATABASE: <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="text-align: center; font-size: 8px;">DD</td> <td style="text-align: center; font-size: 8px;">MM</td> <td colspan="6"></td> <td style="text-align: center; font-size: 8px;">YYYY</td> </tr> </table>											DD	MM							YYYY
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# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD			DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY				DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF QUALIFICATION: WELDING		
Practical skill demonstration			✓	<ul style="list-style-type: none"> <li>Adopt and follow safety rules</li> <li>Base metal preparation</li> <li>Perform GMAW, SMAW, GTAW and SAW operation in 8 hours timeframe</li> <li>Identify and repair welding defects</li> </ul>		
Knowledge Assessment	✓	✓		<ul style="list-style-type: none"> <li>Answer the oral questions your Assessor may have during the practical assessment</li> </ul>		
Other requirements	✓	✓		<ul style="list-style-type: none"> <li>Complete all course assignments</li> </ul>		

# 2

# CANDIDATE ASSESSMENT

Candidate Name ..... Father Name .....

**ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.**

## GUIDANCE TO CANDIDATE

To meet this standard you are required to:

- Make a welding Butt joint in flate position (Material: M.S plate size 200X50X9.(mm) using GMAW,SMAW, GTAW and SAW process according to WPS standards within **five hours** timeframe.

For this assessment you are required to:

- Complete practical assessment tasks to make a welding joint using GMAW, SMAW, GTAW and SAW process according to WPS standards within **five hours** timeframe.
- Answer any questions your Assessor may have for you.

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task to make a welding joint using GMAW, SMAW, GTAW and SAW processes according to WPS standards under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <p><b>To make welding joint by using GMAW process:</b></p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements               <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirement</li> <li>• Prepare the required welding machine as per job requirement               <ul style="list-style-type: none"> <li>✓ Use DC Current</li> <li>✓ Polarity selection as per weld requirement</li> </ul> </li> <li>• Prepare the joint as per specification               <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange Filler wire and pre heating equipment as per WPS</li> <li>✓ Use Carbon Dioxide Gas</li> <li>✓ Adjust the pressure Carbon Dioxide Gas</li> <li>✓ Tacking and welding of joint as per WPS</li> </ul> </li> <li>• Apply post weld cleaning of the job following the process               <ul style="list-style-type: none"> <li>✓ Removal of slag</li> <li>✓ Removal of spatters in Mig Torch with anti-spatter spray</li> </ul> </li> <li>• Perform visual inspection and rectify visual imperfections of weld area</li> <li>• Report to supervisor in case of any contingency</li> </ul> <p><b>To make welding joint by using SMAW process:</b></p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements               <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirement</li> <li>• Prepare the required welding machine as per job requirement               <ul style="list-style-type: none"> <li>✓ Use DC Current</li> <li>✓ Polarity selection as per weld requirement</li> </ul> </li> <li>• Prepare the joint as per specification               <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange electrode and pre heating equipment as per WPS</li> <li>✓ Tacking and welding of joint as per WPS</li> </ul> </li> <li>• Apply post weld cleaning of the job following the process</li> </ul>

	<ul style="list-style-type: none"> <li>✓ Removal of slag</li> <li>✓ Removal of spatters</li> <li>• Perform visual inspection and rectify visual imperfections of weld area</li> <li>• Report to supervisor in case of any contingency</li> </ul> <p><b>To make welding joint by using GTAW process:</b></p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ Tig Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirement</li> <li>• Prepare the required welding machine as per job requirement <ul style="list-style-type: none"> <li>✓ Use Direct Current electrode Negative</li> <li>✓ Select tungsten electrode as per weld metal</li> <li>✓ Choose the appropriate ceramic cup</li> </ul> </li> <li>• Prepare the joint as per job requirement <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange Er-70s Filler wire and pre heating equipment as per WPS</li> <li>✓ Use Argon or Helium Gas</li> <li>✓ Adjust the Gas pressure 15L per minute</li> <li>✓ Plate bevel edge size 2mm as per WPS</li> <li>✓ Keep Bevel edge gaps 4mm between the two plate</li> <li>✓ Set the current on welding machine</li> <li>✓ Tacking and welding of joint as per WPS</li> <li>✓ Apply first root pass then hard pass or filling pass and then capping pass to complete the job</li> </ul> </li> <li>• Apply post weld cleaning of the job <ul style="list-style-type: none"> <li>✓ Cleaning weld bead with steel wire brush</li> </ul> </li> <li>• Perform visual inspection, bend test, X-ray and DPT and rectify identify defects</li> <li>• Report to supervisor in case of any contingency</li> </ul> <p><b>To make welding joint by using SAW process</b></p> <ul style="list-style-type: none"> <li>• Arrange the workplace according to the job requirements <ul style="list-style-type: none"> <li>✓ Welding booth/fire blanket</li> <li>✓ Welding machine and accessories</li> <li>✓ Electric supply</li> </ul> </li> <li>• Apply the safety measures as per job requirements</li> <li>• Prepare the required welding machine as per job requirement <ul style="list-style-type: none"> <li>✓ Use DC Current</li> <li>✓ Polarity selection as per weld requirement</li> <li>✓ Travel speed</li> <li>✓ Flux types</li> <li>✓ Arc Voltage</li> </ul> </li> <li>• Prepare the joint as per given specification <ul style="list-style-type: none"> <li>✓ Joint preparation and cleaning</li> <li>✓ Arrange electrode and pre heating equipment as per WPS</li> <li>✓ Tacking and welding of joint as per WPS</li> </ul> </li> <li>• Apply post weld cleaning of the job following the process <ul style="list-style-type: none"> <li>✓ Removal of slag</li> <li>✓ Removal of spatters</li> </ul> </li> <li>• Perform visual inspection and DPT and also rectify defects</li> <li>• Report to supervisor in case of any contingency</li> </ul>
<p><b>2. Answer any questions your Assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate Name ..... Father Name.....

### INSTRUCTION FOR ASSESSOR

THIS SECTION CONTAINS MODEL ANSWERS AND/OR MINIMUM EVIDENCE REQUIREMENTS. Where model answers are provided for the Assessor, the candidate's response is not required to be identical but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete Practical task to make a welding joint using GMAW SMAW GTAW and SAW processes according to WPS standards under observation by an assessor</b>	During <b>five hours</b> practical assessment, under observation by an assessor, the candidate correctly carried out:			
To make a welding joint by using GMAW process:  Arranged the workplace according to the job requirements	Welding booth/fire blanket			
	Welding machine and accessories			
	Electric supply			
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement			
Prepared the required welding machine as per job requirement	Use DC Current			
	Polarity selection as per weld requirement			
Prepared the joint as per specification	Prepared the joint as per specification			
Prepared and cleaned the job	Prepared and cleaned the job			
Arranged electrode and pre heating equipment as per WPS and tacking and welding of joint as per WPS	Arranged electrode and pre heating equipment as per WPS and tacking and welding of joint as per WPS			
Applied post weld cleaning of the job following the process	Removal of slag			
	Removal of spatters			
Reported to supervisor in case of any contingency	Reported to supervisor in case of any contingency			

To make a welding joint by using SMAW process:	Welding booth/fire blanket			
Arranged the workplace according to the job requirements				
	Welding machine and accessories			
	Electric supply			
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement.			
Prepared the required welding machine as per job requirement	Use DC Current			
	Polarity selection as per weld requirement			
Prepared the joint as per specification	Prepared the joint as per specification			
Prepared and cleaned the job	Prepared and cleaned the job			
Arranged electrode and pre heating equipment as per WPS and tacking and welding of joint as per WPS	Arranged electrode and pre heating equipment as per WPS and tacking and welding of joint as per WPS			
Applied post weld cleaning of the job following the process	Removal of slag			
	Removal of spatters			
Performed visual inspection and rectified visual imperfections of weld area	Performed visual inspection and rectified visual imperfections of weld area			
Reported to supervisor in case of any contingency	Reported to supervisor in case of any contingency			
To make welding joint by using GTAW process:	Welding booth/fire blanket			
	Tig Welding machine and accessories			
	Electric supply			
Arranged the workplace according to the job requirements				
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement			
Prepared the required welding machine as per job requirements	Used Direct Current electrode Negative			
	Selected tungsten rod as per weld metal			
	Choose the appropriate ceramic cup no			



Prepared the joint as per job requirements	Joint preparation and cleaning			
	Arranged Er-70s Filler wire and pre heating equipment as per WPS			
	Used Argon or Helium Gas			
	Adjust the Gas pressure on Argon flow meter 15L per minute			
	Plate bevel edge size 2mm as per WPS			
	Bevel edge gaps 4mm between the two plate			
	Adjusted current on welding machine			
	Tacked and welding of joint as per WPS			
	Started first root pass completed after hard pass or filling pass and last capping pass completed this job			
Applied post weld cleaning of the job following the process	Cleaning weld bead on steel wire brush			
Performed visual inspection, bend test, X-ray and DPT and rectified identified defects	performed visual inspection, bend test, X-ray and DPT and rectified identified defects			
Reported to supervisor in case of any contingency	Reported to supervisor in case of any contingency			
To make welding joint by using SAW process:  Arranged the workplace according to the job requirements	Welding booth/fire blanket			
	Welding machine and accessories			
	Electric supply			
Applied the safety measures as per job requirement	Applied the safety measures as per job requirement			
Prepared the required welding machine as per job requirement	Use DC Current			
	Polarity selection as per weld requirement			
	Travel speed			
	Flux types			
	Arc Voltage			
Prepared the joint as per given specification	Prepared and cleaned the job			
	Arranged electrode and pre heating equipment as per WPS			
	Tacking and welding of joint as per WPS			
Applied post weld cleaning of the job following the process	Removal of slag			
	Removal of spatters			

Performed visual inspection and DPT and also rectified defects	Performed visual inspection and DPT and also rectified defects			
Reported to supervisor in case of any contingency	Reported to supervisor in case of any contingency			
<b>2. Answer any questions their Assessor may have during the practical assessment</b>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document below all questions asked and candidate answers. (attach extra sheet if needed)</i></p>			

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding:</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment</li> <li>List of consumables</li> </ul>
<b>1. Context of Assessment</b>	These tasks will be performed in <b>real time</b> .

<b>2. List of tools and equipment required (For five students)</b>		
<b>S. No</b>	<b>Items</b>	<b>Quantity</b>
1	GMAW, SMAW, GTAW and SAW Welding Machines with accessories	02 Nos each
2	Grinder	02 Nos
3	Chipping Hammer	05 Nos
4	Cutter / Hack Saw	01 Nos
5	Flux Dryer	01 Nos
6	Jigs & Fixtures	05 Nos
7	Beveling Machine	01 Nos
8	Hand Gloves	05 Sets
9	Helmet/Face Shield	05 Nos
10	Welding Table	08 Nos
11	Steel foot rule	05 Nos
12	Try square	05 Nos
13	Safety Shoes	05 Sets
14	welding Apron	05 Nos
15	Ear plug	05 Sets
16	Fume mask	05 Nos
17	Welding plier/ Tong	05 Nos
18	Fire Blanket	05 Nos
19	File	05 Nos
20	Pencil Grinder	03 Nos
21	Fire Extinguisher	02 Nos
22	Exhaust Fan	02 Nos

<b>3. List of consumables (For five students)</b>		
<b>S. No</b>	<b>Items</b>	<b>Quantity</b>
1	MS plate{200*50*9*}mm	10 Pieces
2	Wire Spool (wire dia: 2.4mm)	01 Roll
3	Granular Flux	05 Kg
4	Power Brush	01 Nos
5	Cutting Disk	01 Nos
6	Grinding Disk	01 Nos
7	Pencil Grinder Stone	02 Nos
8	First aid box	02 Nos
9	MS Electrode	01 Packet
10	MIG Wire spool	01 Roll


11	Tungsten electrode	10 Nos
12	CO2 gas	01 Cylinder
13	Argon or Helium gas	01 Cylinder


## National Vocational and Technical Training Commission (NAVTTTC)

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