

PRACTICAL TEST MARK SHEET FOR  
**TUNGSTEN-ARC GAS SHIELDED WELDING**



**BUTT WELD**

This sheet covers the following Units:

**Level 2 Award and Certificate in Fabrication and Welding Practice**  
Unit 5: Tungsten-Arc Gas Shielded Welding

**Level 3 Award, Certificate and Diploma in Fabrication and Welding Practice**  
Unit 5: Tungsten -Arc Gas Shielded Welding - Vertical  
Unit 19: Tungsten -Arc Gas Shielded Welding - Overhead  
Unit 20: Tungsten -Arc Gas Shielded Welding – Overhead (Aluminium)  
Unit 21: Tungsten -Arc Gas Shielded Welding – Overhead (Stainless Steel)  
Unit 22: Tungsten -Arc Gas Shielded Welding – Overhead (Pipe)

Learner's Name: .....

Centre Name: .....

**To be completed by the course tutor:**

Unit	Level 2		Level 3		Level 3		Level 3		Level 3			
	5	Time	5	Time	19	Time	20	Time	21	Time	22	Time
Material												
Low Carbon Steel		30 mins		30 mins		45 mins						
Aluminium		30 mins		30 mins				45 mins				
Stainless Steel		30 mins		30 mins						45 mins		
Pipe												90 mins
Position used	Flat		Vertical		Overhead		Overhead		Overhead		Overhead	

Indicate the Unit and Material being tested by putting a tick **P** in the relevant box. The permitted time, in minutes, for carrying out the relevant practical test is given in the box next to where the tick is to be put.

**To be completed by the learner, by hand:**

1	Thickness of parent material	
2	Filler specification and diameter	
3	Tungsten type and diameter	
4	Shielding gas composition and flow rate	
5	Polarity	

**Part 1: Visual Examination of Product**

			Grade Awarded			
	Defect type	Specification and assessment criteria	D	M	P	F
1	Cracks	Cracks are NOT permitted. Pass or Fail only. If a Fail then do not proceed.				
2	Porosity	Length of weld free of porosity: Distinction = 200mm      Merit = 190mm Pass = 180mm              Fail = < 180mm				
3	Solid inclusions	Intermittent only permitted. Maximum diameter of 3mm; up to 3mm length. Total joint length free of solid inclusions: Distinction = 170mm      Merit = 160mm Pass = 150mm              Fail = < 150mm				
4	Lack of penetration	Total length of full penetration: Distinction = 180mm      Merit = 150mm Pass = 120mm              Fail = < 120mm				
5	Undercut (measurable on both sides, i.e. 400mm)	Maximum permitted depth = 10% of thickness. Total joint length to be free of undercut: Distinction = 340mm      Merit = 320mm Pass = 300mm              Fail = < 300mm				
6	Excess weld metal	Maximum permitted height to be 30% of thickness. Maximum permitted width of weld to be 2mm either side of the preparation. Total joint length to be free within the given range: Distinction = 170mm      Merit = 160mm Pass = 150mm              Fail = < 150mm				
7	Excessive penetration	Maximum permitted is 30% of thickness, or 3mm, whichever is the smaller. Total joint length to be free within given range: Distinction = 170mm      Merit = 160mm Pass = 150mm              Fail = < 150mm				
8	Linear misalignment	Misalignment at any point along the length: Distinction = none      Merit = up to 10% thickness Pass = up to 15% thickness      Fail = > than 15% thickness				
9	Incompletely filled groove	Maximum depth of 10% thickness, but only intermittent. Total joint length with completely filled groove: Distinction = 170mm      Merit = 160mm Pass = 150mm              Fail = < 150mm				
10	Overlap (measurable on both sides, i.e. 400mm)	Total joint length to be free from overlap: Distinction = 400mm      Merit = 385mm Pass = 375mm              Fail = < 375mm				
<b>How to determine the grade for Part 1:</b>			<b>D</b>	<b>M</b>	<b>P</b>	<b>F</b>
Distinction = 7 Distinctions and all other grades to be Pass or higher Merit = 7 Merits or greater and all other grades to be Pass or higher Pass = No Fail grade Fail = Any Fail grade		<b>Grade Awarded for Part 1</b>				

Key:

D = Distinction

M = Merit

P = Pass

F = Fail

**Part 2: Destruction Examination**

			Grade Awarded			
	Test	Assessment Criteria (Pass / Fail only)	D	M	P	F
1	Bend tests	1 root test No fracture is permitted. Maximum tear or rupture permitted is 10mm accumulative. Former size 4x thickness. Angle of bend test not less than 90°.				
		1 face test No fracture is permitted. Maximum tear or rupture permitted is 10mm accumulative. Former size 4x thickness. Angle of bend test not less than 90°.				
<b>How to determine the grade for Part 2:</b>			<b>D</b>	<b>M</b>	<b>P</b>	<b>F</b>
Pass = 2 Passes Fail = Any Fail grade			<b>Grade Awarded for Part 2</b>			

<b>How to determine the overall grade for this practical test:</b>			
Part 1	Part 2	Overall Grade Achieved	
			<b>Course Tutor Signature</b>
Distinction	Pass	<b>Distinction</b>	
Merit	Pass	<b>Merit</b>	
Pass	Pass	<b>Pass</b>	
Any Fail Grade		<b>Fail</b>	
<b>Course Tutor Feedback</b>			
Comment:			
Learner Signature:		Course Tutor Signature:	
Date:		Date:	
<b>Internal Moderator / Verifier Feedback (if sampled)</b>			
Comment:			
Internal Moderator / Verifier Signature:		Date:	
<b>External Moderator (if sampled)</b>			
I have checked the information recorded in this document and am* / am not* satisfied of its accuracy, authenticity and validity (* Delete as appropriate and comment if required)			
External Moderator Signature:		Date:	



## DECLARATION OF AUTHENTICITY

This declaration must be completed and signed by the learner and countersigned by the tutor/assessor.

Learner Name: .....

Learner Number: .....

Centre: .....

### Learner statement of authenticity

I confirm that the attached assignment/portfolio is all my own work\* and does not include any work completed by anyone other than myself. I have completed the assignment/portfolio in accordance with the Awarding Body instructions and within the time limits set by my Centre.

Signature: .....

Date: .....

### Centre confirmation of authenticity

On behalf of .....(insert centre name), I confirm that the above mentioned learner, to the best of my knowledge, is the sole author of the completed assignment/portfolio attached.

Signed: .....

Date: .....

Name: .....

Job Description: .....

\*Unless otherwise stated e.g. for some entry level qualifications learners can work together but should show sections which are their own work.