T Level Technical Qualification in Engineering and Manufacturing – Manufacturing, Processing and Control

8713-334 Fabrication and Welding Technologies

Grade standard exemplification material

Pass - summer 2024

Version 1-0

Version and date	Change detail	Section	Question
v1-0 Oct 2024			

Contents

Introduction

Summer 2024 Results

This document is aimed at providers and learners to help understand the standard that was required in the summer 2024 assessment series to achieve a pass grade for the 8713-334 Fabrication and Welding Technologies Occupational Specialism (OS)

The grade standard exemplification evidence (Grade SEM) provided for the pass grade displays the holistic standard required across the tasks to achieve the pass grade boundary in the summer 2024 series.

The aim of these materials is to provide examples of knowledge, skills and understanding that attested to **four marks above** pass standard (threshold competence) in summer 2024. It is important to note that in live assessments a candidate's performance is very likely to exhibit a spikey profile and standard of performance will vary across tasks.

The Occupational Specialism is graded Distinction, Merit, Pass or Unclassified.

The pass grade boundary is based on a synoptic mark across all tasks. The materials in this Grade SEM are separated into two sections as described below. Materials are presented against a number of tasks from the assignment.

Tasks

This section details the tasks that the candidate has been asked to carry out. What needs to be submitted for marking and any additional evidence required including any photograph/video evidence. Candidate evidence that was or was not included in this Grade SEM has also been identified within this section.

In this Grade SEM there is candidate evidence from:

Task 1 Planning
Task 2 Production
Task 3A Quality review and testing
Task 3B Evaluation and recording
Task 3C Handover

Candidate evidence

This section includes exemplars of candidate work, photographs of the work in production (or completed) and practical observation records of the assessment completed by provider assessors. This was evidence that was captured as part of the assessment and then internally marked by the provider assessor.

The Occupational Specialism brief and tasks can be downloaded from here.

Important things to note:

- We discussed the approach to standard setting/maintaining with Ofqual and the other awarding organisations before awarding this year. We have agreed to take account of the newness of qualifications in how we award this year to recognise that students and teachers are less familiar with the assessments (grading-arrangements-for-vtqsand-technical-qualifications-within-t-levels-in-the-academic-year-2023-to-2024), whilst also recognising the standards required for these qualifications.

- The evidence presented, as a whole, was **four marks** above the pass grade. However, performance across the tasks may vary (i.e. some tasks completed to a higher/lower standard than pass grade).

Grade descriptors

To achieve a pass (threshold competence), a candidate will be able to:

Interpret information, demonstrate planning, assess risk and follow safe working methods when applying practical skills to an acceptable standard as recognised by industry.

Adequately prepare working areas, acknowledging potential risks and applying acceptable housekeeping techniques during tasks.

Demonstrate basic technical practical skills in marking out, cutting, forging, fabricating, welding that is in line with industry standards and meet the requirements of the brief.

Demonstrate basic knowledge and understanding of the principles and processes required for fabrication and welding technologies.

Work safely showing an understanding in the selection and use of relevant tools and equipment and demonstrate a basic awareness of straightforward preparation and application processes within the working environments for marking out, cutting, forging, fabricating and welding activities.

Identify causes of problems or common issues related to fabrication and welding and have some knowledge and skills in how to rectify them.

Demonstrate basic technical skills and understanding in the use of non-destructive testing methods to ensure quality welds are produced to recognised industry standards.

Mostly use general industry and technical terminology accurately across different communication methods with some consideration of technical and non-technical audiences.

Task 1 Planning

Assessment number (eg 1234-033)	8713-334
Assessment title	Fabrication and Welding Technologies Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	1
Evidence title / description	Resource list with justifications with measuring equipment calibration check results recorded Completed risk assessment Method statement with justifications Hot works permit (countersigned by assessor) Cutting list Quality check sheet template
Date submitted by candidate	DD/MM/YY

Task 1

Assessment themes:

- Health and safety
- Planning and preparation
- Production
- Quality review and evaluation

You must:

- produce a resource list with justifications
- produce a risk assessment
- produce a method statement
- complete a hot works permit
- carry out calibration checks on measurement equipment
- produce a cutting list
- produce a quality check sheet

Additional evidence of your performance that must be captured for marking:
N/A

Candidate evidence

Cutting list

Materials	Measurements
Low carbon steel Plate	2600mm x 2260mm x 6mm
Low carbon box section	4200mm x 50mm x 50mm x 3mm
Frame	Measurements
Legs x 4	500mm with 45 degree angle on the top of frame x 50mm x 50mm x 3mm
Top Horizontal Brace	300mm with 45 degree angle each side x 50 mm x 50mm x 3mm
Horizontal Brace	200mm x 50mm x 50mm x 3mm
Cross Brace	600mm x 50mm x 50mm x 3mm
Bucket	Measurements
Base Plate	600mm x 250mm x 6mm
End Plate	400mm top, 250mm bottom x 500mm x 6mm
Side Plate	600mm x 505mm x 6mm

Risk Assessment

Hazard	Risk	Control	Severity	Likelihood
Slips, trips and falls	May cause minor injuries to major injuries depending on the environment the individual is in as they may injure themselves on either metal or machinery	Making sure the work area kept neat and tidy and making sure that many pipes or metal are out of the way of the floor and that any liquids are cleaned up so no one can slip on the liquids and cause injuries	2	1
Hot sparks	Without proper protection sparks may cause damage to the individual as they get burns or they may have their clothes.	Wear PPE like gauntlet and overall and apron to keep the sparks from burning or catching fire		

Liquids,	Chemical burns, skin irritation,	Make sure to read COSHH		
chemicals, substances		regulation and make sure proper ppe is being used like gloves		
Manual handling	Sprains, minor injuries	Make sure that gloves have been used. And ask for support if the metal is too heavy.		
Gas	Fumes, lung irritation	Make sure ventilation has been used to keep fumes away from air ways		
malfunction machinery	Fires, injuries	Daily checks on equipment, reporting issues on any problems		
machinery	Loss of limbs	Proper training on the machines making sure limbs are away from sharp blades		
electricity	Electric shocks, injury, fire	Make sure that machinery has checks on it and make sure limbs and body are away from anything that cause electric shocks or fire		

Method statement

When I get into the workshop I will start by Putting my Personal Protective Equipment on which includes my Fire Resistant Overalls, Steel Cap boots, Ear PLug or my Ear defenders, my Protective glasses and my Gloves. Once my PPE is on I will then sign the register and complete my daily check sheet. I will then start looking over my paperwork to decide what I am going to need. I would then get all the equipment I will need so that I do not need to keep going back and forth to get different equipment. I will then get the materials that I will need for my project and start measuring my materials and start marking them out. I will start by using the tape measure or the steel rule, depending on what size or material I have with me and what size material I need. I will then mark out the size of the material and then use the engineer's square to make sure the angles that need 90 degree angles have a straight line. I will then get my box section to the band saw. Then I would change my glasses and my gloves to latex gloves and Visor so that I can start cutting the box section to the lengths I need them to be. Once I have cut all my box sections to make the Frame, I would then change the band saw so that I can cut my 45 degree angles on the top horizontal brace. I would then change my latex gloves and visor back into my protective glasses and my gloves. Then I will take them back to my working bench and put them in a nice neat pile and move over to make the bucket. I would move my flat plate to the oxy-fuel cutting area and put it down. I would then get my Personal Protective equipment for Oxy-fuel cutting which includes apron, flashback hood, splats, gauntlets and blackout Visor. I would then do the oxy-fuel testing to make sure that the equipment is safe to use and that the cylinders are being stored safely. I would then light the torch making sure I have the perfect flame and start cutting my bucket pieces out. Once all the materials have been cut out i would then wait for the metal to cool down, i would then start turning the oxy-fuel system off and making sure i do all the steps so that the oxy-fuel system is ready and safe for the next person. Then I would take off my splats, flashback hood, gauntlets, visor and apron and put my protective glasses and gloves back on. I would put my flat metal pieces next to my box section, then I would then clean up all my fabrication equipment. I would then move my box section to grind the edge of the box section so that the welds can penetrate both sections so that it is stronger. Then I would put all my metal pieces in the welding bay I am using and get all the equipment I need which includes a welding mask with ventilation and battery, gauntlets, wire brush, chipping hammer, metal tongs, magnets and a round file. I would then start setting up my MIG welder making sure that the welder was in the right settings for my bucket and put the argon gas on, then using magnets I would make sure that the metal is in the right place and tack them all together. Once it is all tacked together I would move onto the box section and start tacking

up the frame, I would also tack a support onto the top of the frame so that when welding the metal does not bend or move shape. Once everything is tacked up and I know everything can fit, I will then weld everything together making sure to use MIG for my Frame and MMA for my bucket. Once everything has been welded up I will then put everything together again and measure everything again making sure that everything is the right size, then I will start doing the non-destructive testing on my welds. I will start off by taking off the welding mask with ventilation and battery, gauntlets, wire brush, chipping hammer, metal tongs, magnets, a round file and my gloves, making sure to put my equipment back away, then i would put on latex gloves, goggles, and ventilation mask. Then i would put some cardboard on the bench and pick a few of my welds and start by spraying them with the Non-destructive testing cleaner and wipe it off, then i would spray on the non-destructive dye and leave it one for 10 minutes so that it can soak in and then wipe it off. Finally I would then put the non-destructive testing penetration on the welds. Then I would wait 5 minutes and check to see if they have passed the test and analyse them. I would then clean them off and clean up the workshop and my areas so that trips and falls are less likely to happen for anyone using the area after.

Resources list

Equipment	Task	Quantity	Justification
Writing Materials like: Pen, laptop, paper, ruler, pencil, eraser.	1	N/A	This equipment will be needed for when I am writing out my task one, so that I can work out everything I am going to need for my project.
Marking out materials such as Scribe, Metal Rule, tape measure, Engineer's Square	2	1	I will use this equipment so that I can mark on my Metal so that when I am cutting my materials up to the size that has been given to me, so that when it comes to welding my materials together they are all the right sizes. I would first use the metal rule or tape measure so that I have the right length for my materials. Then I would use the engineer's square so that when the metal is getting cut it will have a 90 degree angle so that it will not wobble when it is finished. I would then use the scribe so that there is a clear line where I am supposed to cut the metal.

Chipping hammer	2	1	This is needed so that when I have finished my MMA welding I am able to get rid of the slag on my weld so that it does not mess with my weld and my non-destructive testing.
Wire brush	2	1	So that I can get rid of any debris that has fallen on my project from welding.
Metal Tongs	2	1	This will be used so that i do not burn myself with the hot metal that has just been either cut or welded
Angle grinder with grinding discs	2	1	This is important so that I can grind the edge sides of the box section so that when welding the welds can penetrate both sides. Also will be used to get rid of the support tack weld and grind down the excess weld off of the frame.

Round File and Flat File	2	1	The flat file would be used to make sure that the metal has no extra metal on it that is not needed. While the round file will be used to get rid of any debris on the MIG welder torch.
Centre punch	2	1	So that i can clearly see where i need to cut the metal on oxy-fuel cutting to have a guideline on where to cute
Ball pein Hammer	2	1	To hit the centre punch into the metal to make the perfect mark to guide with. Also helps get the support off the metal frame when i grind down the tack down
Oxygen gas cylinder	2	1	The gas needed for oxy-fuel cutting for when i am cutting my metal bucket

Acetylene gas cylinder	2	1	The gas needed for oxy-fuel cutting for when i am cutting my metal bucket
Argon gas cylinder	2	1	The gas needed for the MIG welder, so that i can tack and weld my materials together
Oxy-Fuel cutting Torch	2	1	This is needed to be able to cut the metal will using Oxy-fuel. It makes sure that the flame is controlled and can cut a line easier.
G-clamps	2	1	Make sure that the metal can not get moved when it's getting either grinded, welded or cut. It also makes sure that the metal is at the right shape

Magnets	2	2	These would be needed to make sure that the metal can not be moved when it is tacked together. It also helps make sure that the metal is 90 degree angle
Bandsaw	2	1	This is needed so that I can cut my box sections to the right size that they need to be. I would need to make sure that the clamp is keeping the metal secure otherwise it can cause harm or may make the cut wobbly.
MIG Welder plant with mild steel 1.2mm wire	2	1	To tack all my pieces together and weld my metal frame together.
MMA welder plant with 3.2mm rod	2	1	This would be used to make sure that I can weld my bucket together so that it is sturdy.

Non-destructive testing cleaner spray	3A	1	The first step needed for doing a NDT on my welds to see if they have passed, I will need to spray the weld and then wipe it off.
Non-destructive testing dye spray	3A	1	The second step needed for doing a NDT on my welds to see if they have passed. I would spray this one next then leave it 10 minutes to soak in then i would wipe it off
Non-destructive testing penetration spray	3A	1	The final step needed for doing a NDT on my welds to see if they have passed. I would spray this on the welds and wait 5 minutes for it to dry and then analyse the results of the test.
PPE	Task	Quantity	Justification

Fire Resistant overalls	2 3A	1	This is important to wear to make sure that clothing is safe and protected from sparks and tears
Steel Cap Boots	2 3A	1	Making sure feet are protected against metal and heavy materials and machinery and equipment
Ear Plugs	2 3A	N/A	Making sure that hearing is protected from the workshop equipment
Ear Defenders	2 3A	1	Making sure that hearing is protected from the workshop equipment

Gloves	2	1	Making sure that scratching and and injuries won't happen to hands
Protective glasses	2	1	Making sure that eyes are protected from anything that
Latex gloves	2 3A	N/A	Make sure chemicals are impacting the skin and cause skin irritation
Ventilation mask	3A	1	Making sure fumes do not get into lungs

Welding mask with ventilation and battery	2	1	Making sure that lung irritation does not affected when welding
Flashback hood	2	1	Extra protection on cutting
Splats	2	1	Extra protection on hot metal, welding, grinding and cutting
Blackout Viser	2	1	Making sure not to get arc eye and make sure that

Viser	2 3A	1	Extra protection for eyes so that nothing can get in eyes
Gauntlets	2	1	Extra protection on hot metal, welding, grinding and cutting
Apron	2	1	Extra protection on hot metal, welding, grinding and cutting

Quality check sheet

Component	Measurements (mm)	Final Measurements (mm)	Passed?	Comments
Full Frame Size	700 long x 300 deep x 500 high x 3 thick box section			
Bucket Size	600 long x 400 top, 250 bottom deep x 500 high x 6 low carbon steel plate			
Frame Sizes	Measurements (mm)	Final Measurements (mm)	Passed?	Comments
Legs	50 x 50 x 500 x 3 low carbon steel box section			
Top Horizontal Brace	50 x 50 x 300 x 3 low carbon steel box section			
Horizontal Brace	50 x 50 x 200 x 3 low carbon steel box section			
Cross Braces	50 x 50 x 600 x 3 low carbon steel box section			
Bucket	Measurements (mm)	Final Measurements (mm)	Passed?	Comments

Base Plates	600 x 250 x 6 low carbon steel plates			
End Plates	400 top, 250 bottom long x 500 high x 6 low carbon steel plates			
Side Plates	600 long x 505 high x			

Welding

Welding Process	Passed?	Comments
MMA		
MIG		
Welding Positions	Passed?	Comments
Flat (PA)		
Vertical up (PF)		
Welding Joints	Passed?	Comments
Butt		
Corner		
T-fillet		
Final Piece Notes	Passed?	Comments
Tolerance (+or - 3mm)		
Non-Destructive Testing method		

Task 2 Production

Assessment number (eg 1234-033)	8713-334
Assessment title	Fabrication and Welding Technologies Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	2
Evidence title / description	Fully fabricated fire pit
Date submitted by candidate	DD/MM/YY

Task 2

Assessment themes:

- Health and safety
- Planning and preparation
- Production
- Quality review and evaluation

You must:

- prepare the work area for the production of the fire pit,
- mark out and cut components for the fire pit using cutting equipment, placing pieces in order of cutting,
- prepare the cut components for welding,
- fabricate the components using:
  - two different welding processes,
  - two different welding positions and
  - three different welded joints from the list given in the fabrication criteria,
- assemble the components,
- reinstate the work area.

Additional evidence of your performance that must be captured for marking:

- assessor observation to include:
  - the work area, prior to, during and on completion of fabrication activities
  - preparation of tools and equipment
  - welding and tool skills
  - use of cutting list (noting any changes made)
  - production stages of fire pit (marking out, cutting, welding preparation, welding, finishing and final assembly)
  - the application and use of tools and equipment:
    - to create two 150 mm continuous welds using two different welding processes
    - the use of two different welding techniques
    - production of three different welded joints.

Candidate evidence

Working area

Candidate's working area was clean and tidy at the start of work and at the end of work, her tools and equipment were in place. Working and preparing the work area was good. Candidate's equipment and tools were safe at all times when working on tables and welding bay. Planning and preparation, health and safety was good.

Preparation of tools and equipment

Candidate Preparation of tools and equipment very good; placed all tools after and before usage in work store and racking, candidate's tools all clean and anything damaged she reported if she found any.

Production stages

Candidate's stages were laid in a good manner so that she could pick and use the correct equipment or piece when she needed it at each stage.Candidate seemed to get confused with her work pieces at stages of her work; it took a long time to get it sorted out. Candidate had her pieces and tools labelled for each section.

Application and use of tools and equipment

Candidate's Application and use of tools and equipment was a bit of a mismatch and she found it hard understanding what equipment had to be used at what section, candidates application was hard for her when applied to a particular purpose.The practical applications of space were good. Candidate paid a lot of attention to the equipment. Candidate had good knowledge of what she had to do. She used two welding processes for two different 150 mm single-run welds.

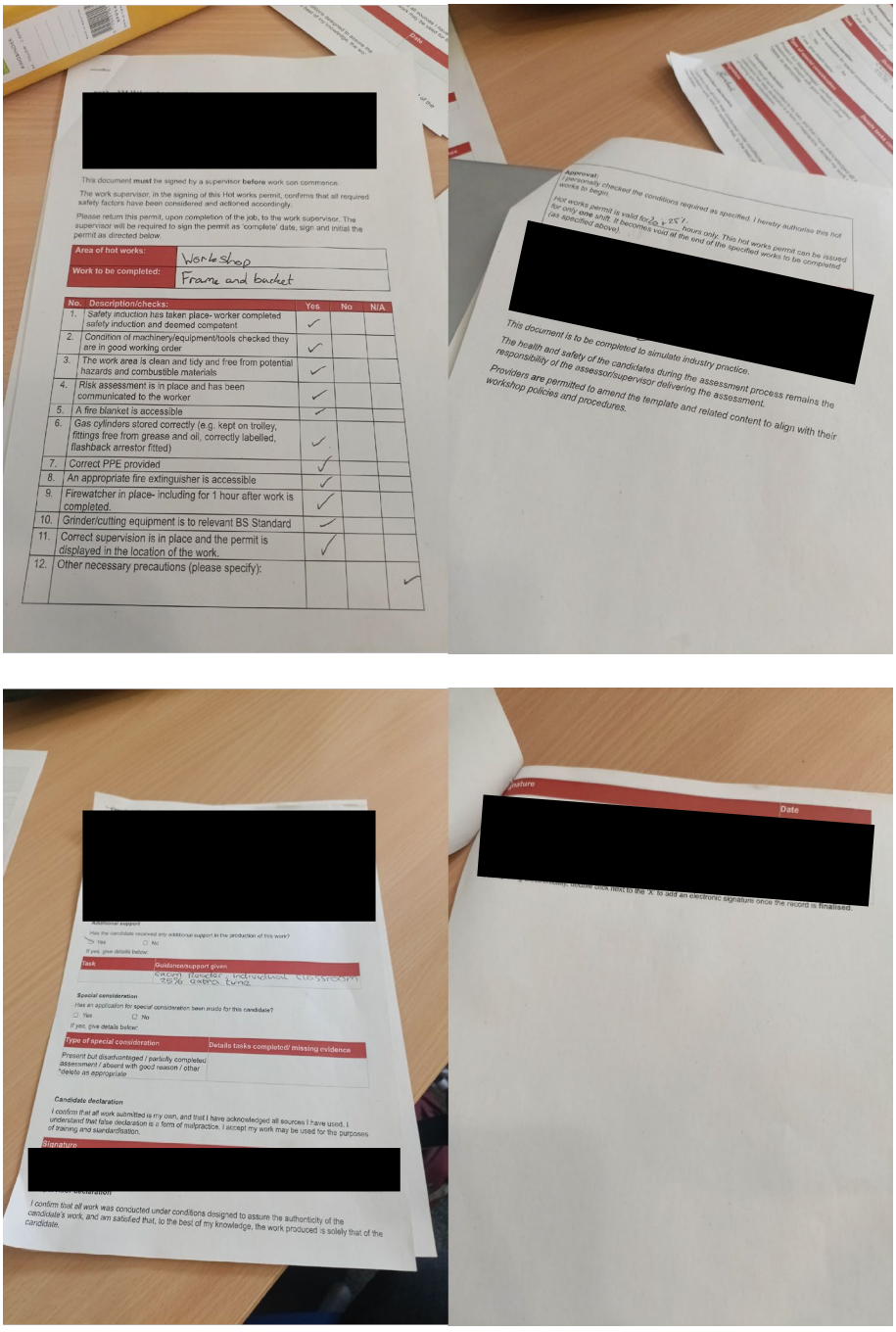
Welding and tool skills

Candidate's skills with tools and welding were average but with more practice her welding would improve and given more time, health and safety, production was good.

assembly was poor and not up to standard. Candidate knew how to change different machines for different processes. End product did not pass .

Use of cutting list

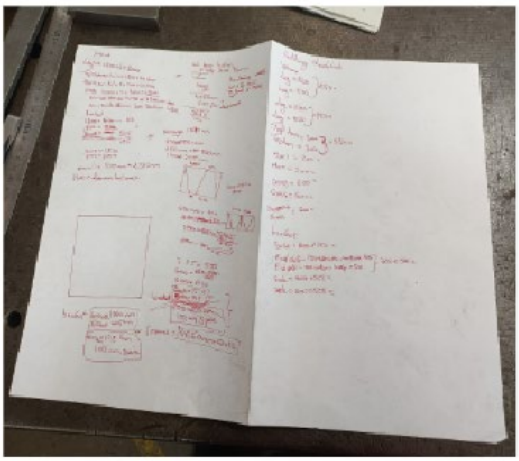
Candidate's cutting list was good and she demonstrated how to set out and in what order, candidate's work was good and mistakes were rectified, overall good work, Health and safety was good, Production and Assembly poor.



Day One

Day one, 8th May
Beginning of the day

Day one, 8th May
Equipment out



Workings out to make the frame and bucket

Equipment used for marking out

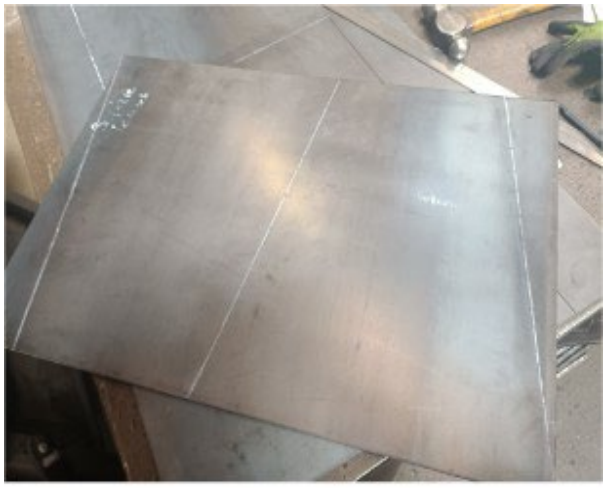
Using the guillotine
Making sure that fingers are away from the shield

Using the guillotine
Making sure that fingers are away from the shield

Marking out the metal to be able to cut the metal pieces

Marking out the metal to be able to cut the metal pieces

Marking out the metal to be able to cut the metal pieces

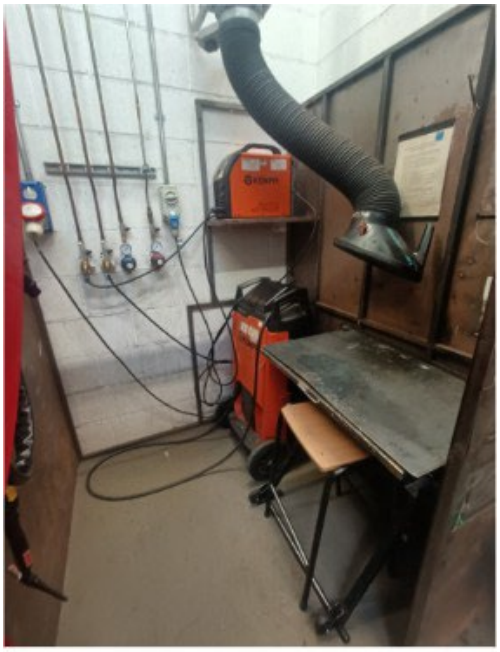


Metal all marked up to use Oxy-fuel Cutting

Metal all marked up to use Oxy-fuel Cutting

Burring the metal to make sure that scrapes and scratches aren't inflicted

Using the Horizontal Bandsaw making sure that the box section is the right length



Beginning of the day
9th may
Clean bay

Day Two – 9th May

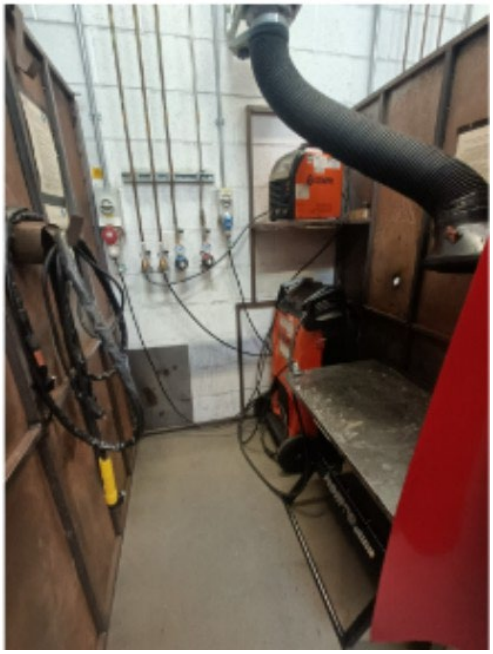
Using grinder for edges of frame box section

Using oxy-fuel cutting for the plates

The cut out box section for the frame

Using the chop saw for the metal frame

End of the day 9th may Clean bay



End of the day 13th may Clean bay

The Frame completely tacked together

Task 3A Quality review and testing

Assessment number (eg 1234-033)	8713-334
Assessment title	Fabrication and Welding Technologies Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	3A
Evidence title / description	Completed quality check sheet
Date submitted by candidate	DD/MM/YY

Task 3A

Assessment themes:

- Planning and preparation
- Quality review and evaluation

You must:

- prepare the work area to carry out magnetic particle testing (a Non-Destructive Testing (NDT)),
- perform quality assurance checks on the fabricated assembly,
- perform a magnetic particle test on **three** different welds,
- record the magnetic particle test results in the quality check sheet.

Additional evidence of your performance that must be captured for marking:

- assessor observation to include:
    - use of measuring equipment
    - application of magnetic particle test
    - completion of quality checks
    - review of work area (preparation, during and on completion of the task).

Candidate evidence

Component	Measurements (mm)	Final Measurements (mm)	Passed?	Comments
Full Frame Size	700 long x 300 wide x 500 high x 3 thick box section	702 long x 300 deep x 499 high x 3 thick box section	Yes	I had not taken account of the blade of the box cutter so when it was getting cut I did lose a few millimetres.
Bucket Size	600 long x 400 top, 250 bottom deep x 500 high x 6 low carbon steel plate	610 long x 405 top, 260 bottom x 505 high x 5 low carbon steel Plate	No	When cutting I had not taken into the account of the thickness of the materials so it did add the thickness to the ends.
Frame Sizes	Measurements (mm)	Final Measurements (mm)	Passed?	Comments
Legs	50 x 50 x 500 x 3 low carbon steel box section	2 lots of 499x50x50x3 500 x 50 x 50 x 3 498 x 50 x 50 x 3	Yes	
Top Horizontal Brace	50 x 50 x 300 x 3 low carbon steel box section	2 lots of 300 x 50 x 50 x 3	Yes	
Horizontal Brace	50 x 50 x 200 x 3 low carbon steel box section	200 x 50 x 50 x 3 198 x 50 x 50 x 3	Yes	

Cross Braces	50 x 50 x 600 x 3 low carbon steel box section	2 lots of 50 x 50 x 600 x 3	Yes	
Bucket	Measurements (mm)	Final Measurements (mm)	Passed?	Comments
Base Plates	600 x 250 x 6 low carbon steel plates	600 x 250 x 5 carbon steel plates	Yes	
End Plates	400 top, 250 bottom long x 500 high x 6 low carbon steel plates	400 top, 250 bottom long x 500 x 5 low carbon steel plates	Yes	
Side Plates	600 long x 505 high x 6 low carbon steel plates	600 long x 505 high x 5 low carbon steel plates	Yes	

Welding Process	Passed?	Comments
MMA	N/A	Was not able to get a test on this process
MIG	Yes	
Welding Positions	Passed?	Comments
Horizontal	Yes	
Vertical up (PF)	Yes	
Welding Joints	Passed?	Comments
Butt	N/A	Was not able to get a test on this joint
Corner	Yes	
T-fillet	N/A	Was not able to get a test on this joint
Final Piece Notes	Passed?	Comments
Tolerance (+or -3mm)	N/A	I would say Yes for the cutting list and the welded frame however as the box is around 5 mm to 10 mm out that means it has not passed
Non-Destructive Testing method	Yes	

Task 3B Evaluation and recording

Assessment number (eg 1234-033)	8713-334
Assessment title	Fabrication and Welding Technologies Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	3B
Evidence title / description	Quality inspection report
Date submitted by candidate	DD/MM/YY

Task 3B

Assessment themes:

- Quality review and evaluation

You must:

- produce a quality inspection report evaluating the production of the finished fire pit. The report should typically be 800 words. This must include:
  - finished sizes of components and confirmation the fabricated fire pit conforms to the dimensional requirements of the specification and meets industry standards
  - results from the non-destructive testing with reasonings and whether the welds meet industry standards
  - an explanation of the quality checks undertaken and the reasons for their use
  - an evaluation of the fitness for purpose of the finished assembly and method of production used with reasoning and justifications
  - a concessions list for every facet of the assembly that does not conform to the specification, reasons for occurrence and how to prevent reoccurrence
  - any amendments needed to their method statement with reasoning
  - any improvements or adaptions required to the fire pit, including any reasoning and justifications if adaptions or improvements are not required.

Additional evidence of your performance that must be captured for marking:

- N/A

Candidate evidence

3B

The finished size of the bucket was 610mm long by 505mm high by 405 at the top of the bucket and 260 at the bottom of the bucket. The finished sizes of the Frame were 702mm long by 300 mm wide by 499 mm long. This does mean that it would not have been fit for industry standard as the bucket was 10 mm too long to fit in the frame. This happened because when I was working out the sizes of the bucket lengths I had not taken account of the size of the thickness of the metal this meant that when it was getting welded together it had taken the length of the thickness of the metal.

I made sure that when I was welding the frame I had a support on the top of the frame as it meant that the top of the frame could not move when I was welding the rest of the frame. This is because the heat of welding will make the frame move and as because the top of the frame has not been shown with support it just means that the bucket would have been more likely to fit inside it.

When I was about to weld everything together I had decided that it was a better idea to swap the welding processes as MMA welding would have looked nice and neat on the frame so I started to weld everything together. I soon realised that using MMA welding was not the best idea as the material was too thin to be able to take the process of MMA welding as the MMA welder need to be a certain heat to make the rods melt however because i was dealing with thinner metal on the edge it started to make holes on the metal which meant that it took more time to fill the holes back up. It also made my welds not look as great as I hoped it had as I was either rushing through the weld to try and not get it to make holes or I had to fill the holes in.

One huge issue that happened for me was the size of the final project. Even with the table going as low as possible I still could not properly reach the top of the metal frame this meant

that it was a lot harder to weld the top of the frame as I could not fully see what I was doing and meant holes were even harder to fix, and because of the height I am it was also hard to hold the MMA welder torch. It meant I had to bend the rods so that I could get the most of the control of the torch. It also meant I needed to get help with the bucket as I was not able to move it on my own.

The Non-Destructive Testing showed me that the sides of the buckets may have holes or imperfections as when I was welding the bucket it would have melted a bit of the edge of the bucket. Another thing that the Non-Destructive Testing showed me was where I had stopped and started on my welds, it showed that it had not penetrated properly and that there were cracks in between the end of the 150 mm weld and the start of the 150 mm weld. This would mean that rust or other issues that could affect the metal could find its way into the cracks of the weld so that it makes the weld weaker and could in the future make the weld have more cracks or even break.

Having a Quality checklist is important when manufacturing a project to make sure that when the project is made it can make sure that the project is exactly what has been asked. The individual would be able to see what went wrong and how they could fix the project or how they should make the project better next time. By doing all the processes of the checklist it makes sure that any faults can be pointed out and that there are notes from the individual for anyone who is going to manufacture the project, what they found out by making this project. It also means that the customer is given something that works and will not crack, break or cause any problems for them. By having this checklist the individual can take away any problems before it gets sent off to the customer.

Task 3C Handover

Assessment number (eg 1234-033)	8713-334
Assessment title	Fabrication and Welding Technologies Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	3C
Evidence title / description	Assessor observation of handover meeting
Date submitted by candidate	DD/MM/YY

Task 3C

Assessment themes:

- Quality review and evaluation

You must:

- hold a meeting with the supervisor to complete handover procedures, including:
  - confirmation of the work completed
  - a summary of findings from the quality inspection report
  - suggested improvements to the design of the fire pit and/or fabrication process
  - handover of the finished fire pit and the complete quality inspection report.

Additional evidence of your performance that must be captured for marking:

- handover materials consisting of:
  - quality inspection report (from task 3b)
  - completed fire pit assembly (from task 2).

Candidate evidence

3C

Task One - Planning

- The Brief and Technical Information
- Resource List
- Risk Assessment
- Method Statement

- Hot Works Permit
- Calibration Checks
- Cutting list
- Quality checklist

Task 2 - Production

- Marking out
- Cutting Materials - Bandsaw and Oxy -fuel Cutting
- Burring and grinding
- Setting up welding bay
- Tacking
- Welding

PPE needed for:

- Workshop
- Bandsaw Cutting
- Oxy -fuel Cutting
- Grinding
- Welding

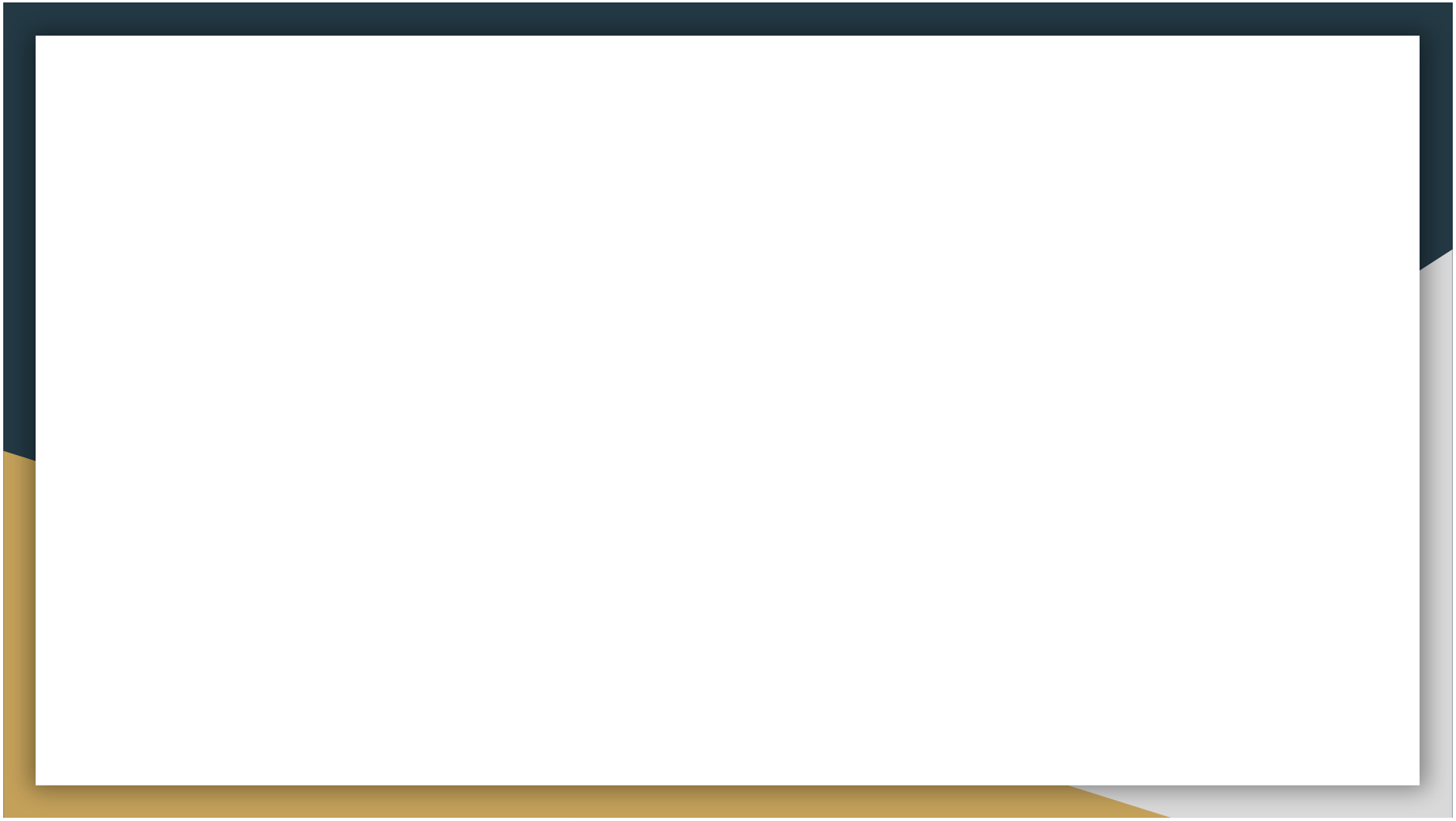
Task 3A - Quality Review and Testing

- PPE for NDT
- Steps For NDT
- Analysing the NDT
- Completing the Checklist

Task 3B - Evaluation and Recording

- Finished sizes
- Results on the Non-destructive testing
- Quality checklist
- Supports for the project
- Method statement
- Improvements needed.

Notes on Project



Get in touch

The City & Guilds Quality team are here to answer any queries you may have regarding your T Level Technical Qualification delivery.

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Web chat available **here**.

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