



Level 3 Diploma in Fabricating Steel Structures in Construction

Qualification Specification

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Introduction

The ProQual Level 3 Diploma in Fabricating Steel Structures Construction qualification provides a nationally recognised qualification for those working in this specialised area of construction.

The awarding body for this qualification is ProQual Awarding Body (www.proqualab.com) and the regulatory body is the Office of Qualifications and Examinations Regulation (Ofqual).

The qualification has been accredited onto the Regulated Qualifications Framework (RQF) and is published on Ofqual's Register of Qualifications.

Qualification Profile

Level 3 Diploma Fabricating Steel Structures in Construction

Qualification title	ProQual Level 3 Diploma in Fabricating Steel Structures in Construction
Ofqual qualification number	603/3163/X
Level	3
Total Qualification Time	520 hours (375 GLH)
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	16/4/2018
Qualification end date	31/7/2026

Entry Requirements

There are no formal entry requirements for this qualification.

Centres should carry out an **initial assessment** of candidate skills and knowledge to identify any gaps and help plan the assessment.

Qualification Structure

To achieve the qualification candidates must complete ALL of the Mandatory units, candidates may also complete the Additional unit.

Mandatory Units			
Unit Ref.	Title	Level	GLH
Y/616/6182	Contribute to effecting working relationships in construction	2	15
D/616/6183	Work safely and minimise risk in construction	2	20
H/616/6184	Identify and deal with hazards and emergencies in a construction environment	3	30
M/616/9735	Shape components of fabricated steel structures by material removal using hand tools in construction	3	100
T/616/9736	Assemble components of steel fabrications to meet specification in construction	3	120
A/616/9737	Manually form components to specification in construction	3	90

Additional Unit			
Unit Ref.	Title	Level	GLH
F/616/9738	Join materials by manually controlled welding process in construction	3	160

Centre Requirements

Centres must be approved to offer this qualification. If your centre is not approved please complete and submit form **ProQual Additional Qualification Approval Application**.

Staff

Staff delivering this qualification must be appropriately qualified and/or occupationally competent.

Assessors/Internal Quality Assurance

Assessors for each unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods.

Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or internal quality assurance qualifications.

Support for Candidates

Materials produced by centres to support candidates should:

- enable them to track their achievements as they progress through the learning outcomes and assessment criteria;
- provide information on where ProQual's policies and procedures can be viewed;
- provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence

Assessment

This qualification is competence-based, candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.

The qualifications must be assessed in a work environment and it must be internally assessed by an appropriately experienced and qualified assessor.

Each candidate is required to produce a portfolio of evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

- Evidence can include:
- observation report by assessor
 - assignments/projects/reports
 - professional discussion
 - witness testimony
 - candidate product
 - worksheets
 - record of oral and written questioning
 - Recognition of Prior Learning

Learning outcomes set out what a candidate is expected to know, understand or be able to do.

Assessment criteria specify the standard a candidate must meet to show the learning outcome has been achieved.

Learning outcomes and assessment criteria can be found from page 7.

Internal Quality Assurance

An internal quality assurance verifier confirms that assessment decisions made in centres are made by competent and qualified assessors, that they are the result of sound and fair assessment practice and that they are recorded accurately and appropriately.

Adjustments to Assessment

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

Results Enquiries and Appeals

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Certification

Candidates who achieve the requirements for this qualification will be awarded:

- A certificate listing all units achieved, and
- A certificate giving the full qualification title -

ProQual Level 3 Diploma in Fabricating Steel Structures in Construction

Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the qualification. All certificates will be issued to the centre for successful candidates.

Unit certificates

If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement certificates.

Learning Outcomes and Assessment Criteria

Unit Y/616/6182

Contribute to effective working relationships in construction

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Establish and maintain productive working relationships.	1.1 Develop working relationships with different people in the work environment such as: those for whom they are responsible, those to whom they are responsible, clients, colleagues, other tradespersons, suppliers, security/safety personnel.
2 Deal with disagreements in an amicable and constructive way so that effective relationships are maintained.	2.1 Accept the opinions of others in relation to work activities. 2.2 Review different points of view on work related matters in a positive and constructive way in order to maintain working relationships and productivity. 2.3 Apply mediation (in accordance with the individual's responsibilities) in the event of disagreements between third parties in order to maintain productive working relationships.
3 Keep others informed about work plans or activities which affect them.	3.1 Use appropriate types of communication (formal/informal, written, verbal) to clearly relay important information to others.
4 Seek assistance from others in a polite and courteous way without causing undue disruption to normal working activities.	4.1 Approach workplace colleagues / associates in an appropriate manner and at an appropriate time, in order to seek assistance on work related issues.
5 Respond in a timely and positive way when others ask for help or information.	5.1 Prioritise requests for help and information in relation to wider work activities. 5.2 Clarify requests for help and information to identify exactly what is required. 5.3 Ensure appropriate responses are provided within agreed timescales.
6 Understand the importance of creating and maintaining working relationships.	6.1 Describe the individual's responsibilities for creating and maintaining working relationships and explain why it is important to do so.
7 Understand problems affecting relationships.	7.1 Describe different problems that can affect relationships, and the actions that can be taken to deal with specific difficulties.
8 Understand lines of communication and responsibilities.	8.1 Explain the individual's responsibilities and the responsibilities of others within the work location. 8.2 Describe the lines of communication that exist within the individual's working environment and explain the agreed procedure for passing information.

Unit D/616/6183

Work safely and minimise risk in construction

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Understand health and safety legislation, regulations and safe working practices and procedures.	1.1 Explain the requirements of health and safety legislation.
	1.2 Explain the consequences for employers and employees of not fulfilling their legal health and safety responsibilities.
	1.3 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes.
	1.4 Describe reporting lines and procedures.
2 Understanding personal site safety responsibilities.	2.1 Describe how to recognise health safety training needs, the procedure for requesting training and who to ask for help in understanding the work instructions.
	2.2 Describe how to get information relating to the safe use of equipment and how to ensure the equipment is used safely.
	2.3 Describe how to recognise when personal protective equipment should be used and how to select and use the correct equipment for the work to be undertaken.
	2.4 Describe different types of vibration injuries and explain how they can be prevented.
	2.5 Explain the importance of personal behaviour in maintaining workplace standards.
	2.6 Describe the checks which are needed to make sure that portable electrical appliances are safe to use.
	2.7 Describe what a safe system for electrical isolation should include and why low voltage is generally safer in relation to health and safety.
	2.8 Describe the risks from overhead cables and how to control them.
	2.9 Describe what must be done when carrying hazardous substances in vehicles.
	2.10 Describe where asbestos is likely to be found, what should be done if it is thought to have been found and how it is a risk to health.
3 Understand others site safety responsibility.	3.1 Explain who is responsible for ensuring that equipment is checked and safe to use.
	3.2 Describe who is responsible and who must assess the health and safety of people working on a client's site.
	3.3 Describe the legal rights and responsibilities of the appointed safety representatives and the powers of the regulatory inspectors.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
4 Know first aid procedures.	4.1 Describe the first aid procedures that typically apply in the workplace. 4.2 Describe the aspects of first aid in the workplace that all personnel are expected to know.
5 Understand evacuation procedures.	5.1 Describe how to work safely in an excavation. 5.2 Explain procedures for shutdown and evacuation and state where procedures can be obtained.
6 Understand contingency reporting documentation and systems.	6.1 Describe the contingency reporting documentation and systems that are relevant to workplace activities.
7 Understand appropriate reporting lines and procedures.	7.1 Explain how to comply with the various reporting lines and procedures that apply in the working environment.

Unit H/616/6184

Identify and deal with hazards and emergencies in construction

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Recognise industrial processes, tools, equipment and materials that have the potential to cause harm.	<ul style="list-style-type: none">1.1 Identify different hazardous processes, tools, equipment and materials which exist in the work environment.1.2 Identify hazardous industrial processes associated with particular working environments.
2 Check for and identify potential hazards in the workplace in line with agreed and approved procedures.	<ul style="list-style-type: none">2.1 Safely check for potential hazards in accordance with agreed and approved procedures.2.2 Identify potential hazards in the workplace and report in accordance with approved procedures.2.3 Minimise potential hazards using the criteria and procedures specified in the risk control strategy.
3 Take appropriate action to minimise the risk from hazards and emergencies.	<ul style="list-style-type: none">3.1 Take appropriate action upon identification of a hazard or emergency.3.2 Call for expert help using warning systems as appropriate.3.3 Follow shut down and evacuation procedures promptly and correctly.3.4 Deal safely with hazards and emergencies in accordance with organisational policy and procedures.3.5 Report in accordance with the overall risk control strategy.
4 Understand health and safety legislation, regulations and safe working practices and procedures.	<ul style="list-style-type: none">4.1 Explain the requirements of health and safety legislation.4.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes.4.3 Describe reporting lines and procedures.
5 Understand hazard spotting and safety assessment methods and techniques.	<ul style="list-style-type: none">5.1 State where information on hazard spotting and safety assessment methods and techniques can be found.5.2 Describe the hazard spotting and safety assessment methods and techniques, which apply in the work location.
6 Understand types of hazards involving processes, tools, equipment and materials.	<ul style="list-style-type: none">6.1 Describe common types of hazard associated with processes, tools, equipment and materials.6.2 State what the individuals' responsibilities are in terms of dealing with and notifying others of hazards.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
7 Understand effects of hazards on persons, property and the environment.	7.1 Describe the effects of hazards on persons, property and the environment.
8 Understand actions to minimise risk from hazards.	8.1 Describe the types of actions required to deal with and minimise the risks from different hazards.

Unit M/616/9735

Shape components of fabricated steel structures by material removal using hand tools in construction

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Work safely and minimise risk at all times	1.1	Identify a range of hazards
		1.2	Take appropriate action to minimise the risk from hazards
		1.3	Refer safely related matters to appropriate persons as required
		1.4	Work in accordance with relevant health and safety legislation
		1.5	Work in accordance with the requirements of risk assessments and permit to work systems
2	Prepare work area, materials and equipment	2.1	Ensure that the work environment is suitable for the work activities to be undertaken
		2.2	Ensure that service supplies are connected and ready for use
		2.3	Ensure that consumables are as specified and fit for purpose
		2.4	Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and useable condition
		2.5	Ensure that safety arrangements are in place to protect other workers from activities likely to disrupt normal working
		2.6	Ensure and report completion of preparations in line with organisational procedures
		2.7	Deal promptly with problems and report those that cannot be solved
3	Shape components of fabricated steel structures by material removal using hand tools	3.1	Follow relevant specifications for the component to be produced
		3.2	Shape the materials using appropriate methods and techniques
		3.3	Check that the requirements for shaping have been achieved
		3.4	Deal promptly and effectively with problems and report those that cannot be resolved
4	Carry out the necessary actions after completing the shaping of components of fabricated steel structures by material removal using hand tools	4.1	Re-instate the work area to a safe condition and correctly dispose of waste materials
		4.2	Shut down the equipment to a safe condition on completion of steel fabrication activities
		4.3	Store re-usable materials, consumables and equipment in accordance with appropriate procedures
		4.4	Complete all necessary documentation

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| 5 | Understand health and safety legislation, regulations and safe working practices and procedures | 5.1 | Explain the requirements of health and safety legislation |
| | | 5.2 | Explain the purpose and nature of risk assessments, method statements and permit to work systems, and the relevance of local procedures and guidance notes |
| | | 5.3 | Describe the hazards and risks that can arise from shaping operations |
| | | 5.4 | Describe reporting lines and procedures |
| 6 | Understand work area, material and equipment preparation and reinstatement requirements for shaping components of fabricated steel structures by material removal using hand tools | 6.1 | Describe methods and requirements for preparation and reinstatement of work area, material and equipment |
| | | 6.2 | Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment |
| | | 6.3 | Describe the types of equipment used for shaping components and explain the care and control procedures |
| 7 | Understand the tools, terminology, techniques and practices for shaping components of fabricated steel structures by material removal using hand tools | 7.1 | Explain the principles, uses and conventions of engineering drawings and specifications |
| | | 7.2 | Describe the tools and techniques necessary to carry out shaping components |
| | | 7.3 | Describe types and application of hand and powered tools |
| | | 7.4 | Explain compliance checking methods and techniques |
| | | 7.5 | Describe how to identify defects in products and assets |
| | | 7.6 | Explain reporting documentation and control procedures |

Unit T/616/9736

Assemble components of steel fabrications to meet specification in construction

Learning Outcome - The learner will:		Assessment Criterion - The learner can:
1	Work safely and minimise risk at all times	1.1 Identify a range of hazards
		1.2 Take appropriate action to minimise the risk from hazards
		1.3 Refer safely related matters to appropriate persons as required
		1.4 Work in accordance with relevant health and safety legislation
		1.5 Work in accordance with the requirements of risk assessments and permit to work systems
2	Prepare work area, materials and equipment	2.1 Ensure that the work environment is suitable for the work activities to be undertaken
		2.2 Ensure that service supplies are connected and ready for use
		2.3 Ensure that consumables are as specified and fit for purpose
		2.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and useable condition
		2.5 Ensure the materials are prepared to the required procedure
		2.6 Ensure completion of prepared in line with organisational procedures
		2.7 Deal promptly and effectively with problems and report those that cannot be solved
3	Assemble components of steel fabrications	3.1 Obtain and interpret relevant drawings and specifications
		3.2 Ensure the specified components are available and meet quality standards
		3.3 Use appropriate methods and techniques to assemble the components in their correct positions
		3.4 Assemble the components using the specified connectors and securing devices
		3.5 Check the completed assembly to ensure that all operations have been completed and the finished assembly meets the required specification
		3.6 Deal promptly and effectively with problems and report those that cannot be resolved

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| 4 | Carry out the necessary actions after completing the assembling of components of steel fabrications | 4.1 | Re-instate the work area to a safe condition and correctly dispose of waste materials |
| | | 4.2 | Shut down the equipment to a safe condition on completion of steel fabrication activities |
| | | 4.3 | Store re-usable consumables and equipment in accordance with appropriate procedures |
| | | 4.4 | Clearly identify the stored resources |
| | | 4.5 | Complete all necessary documentation |
| 5 | Understand health and safety legislation, regulations and safe working practices and procedures | 5.1 | Explain the requirements of health and safety legislation |
| | | 5.2 | Explain the purpose and nature of risk assessments, method statements and permit to work systems, and the relevance of local procedures and guidance notes |
| | | 5.3 | Describe the hazards and risks that can arise from steel fabrications operations |
| | | 5.4 | Describe reporting lines and procedures |
| 6 | Understand work area, material and equipment preparation and reinstatement requirements for assembling components of steel fabrication activities | 6.1 | Describe methods and requirements for preparation and reinstatement of work area, material and equipment |
| | | 6.2 | Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment |
| | | 6.3 | Describe the types of tools and equipment used for steel fabrication activities and explain the care and control procedures |
| 7 | Understand the tools, terminology, techniques and practices for assembling components of steel fabrications | 7.1 | Explain the principles, uses and conventions of engineering drawings and related-specifications |
| | | 7.2 | Describe preparation and methods |
| | | 7.3 | Explain assembly methods and techniques |
| | | 7.4 | Describe compliance methods and techniques |
| | | 7.5 | Describe how to identify defects in products and assets |
| | | 7.6 | Describe compliance checking methods and techniques |
| | | 7.7 | Describe quality control procedures and documentation procedures |

Unit A/616/9737

Manually form components to specification in construction

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Work safely and minimise risk at all times	1.1	Identify a range of hazards
		1.2	Take appropriate action to minimise the risk from hazards
		1.3	Refer safely related matters to appropriate persons as required
		1.4	Work in accordance with relevant health and safety legislation
		1.5	Work in accordance with the requirements of risk assessments and permit to work systems
2	Prepare work area, materials and equipment	2.1	Ensure that the work environment is suitable for the work activities to be undertaken
		2.2	Ensure that service supplies are connected and ready for use
		2.3	Ensure that consumables are as specified and fit for purpose
		2.4	Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and useable condition
		2.5	Ensure the materials are prepared to the required procedure
		2.6	Ensure completion of prepared in line with organisational procedures
		2.7	Identify and resolve straight forward problems and report those that cannot be solved
3	Manually form components to specification	3.1	Follow relevant specifications for the component to be produced
		3.2	Determine what has to be done and how this will be achieved
		3.3	Use the appropriate tools and equipment for the pressure shaping operation
		3.4	Shape materials to the required specification using appropriate methods and techniques
		3.5	Check that all the required shaping operations have been completed to the required standard
		3.6	Deal promptly and effectively with problems and report those that cannot be resolved

4	Carry out the necessary actions after completing the manually forming components to specification	4.1	Re-instate the work area to a safe condition and correctly dispose of waste materials
		4.2	Shut down the equipment to a safe condition on completion of steel fabrication activities
		4.3	Store re-usable consumables and equipment in accordance with appropriate procedures
		4.4	Clearly identify the stored resources
		4.5	Complete all necessary documentation
5	Understand health and safety legislation, regulations and safe working practices and procedures	5.1	Explain the requirements of health and safety legislation
		5.2	Explain the purpose and nature of risk assessments, method statements and permit to work systems, and the relevance of local procedures and guidance notes
		5.3	Describe the hazards and risks that can arise from steel fabrication operations
		5.4	Describe reporting lines and procedures
6	Understand work area, material and equipment preparation and reinstatement requirements for manually forming components to specifications	6.1	Describe methods and requirements for preparation and reinstatement of work area, material and equipment
		6.2	Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment
		6.3	Describe the types of equipment used for moving loads and explain the care and control procedures
7	Understand the tools, terminology, techniques and practices for manually forming components to specification	7.1	Explain the principles, uses and conventions of engineering drawings and related specifications
		7.2	Describe hand forming methods and techniques
		7.3	Describe material characteristics and their impact on hand forming operations
		7.4	Describe quality control procedures and recognition of defects which may be caused by pressure forming process
		7.5	Describe compliance checking methods and techniques
		7.6	Explain reporting documentation and control procedures

Unit F/616/9738

Join materials by manually controlled welding process in construction

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Work safely and minimise risk at all times	1.1 Identify a range of hazards
	1.2 Take appropriate action to minimise the risk from hazards
	1.3 Refer safely related matters to appropriate persons as required
	1.4 Work in accordance with relevant health and safety legislation
	1.5 Work in accordance with the requirements of risk assessments and permit to work systems
2 Prepare work area, materials and equipment	2.1 Ensure that the work environment is suitable for the work activities to be undertaken
	2.2 Ensure that service supplies are connected and ready for use
	2.3 Ensure that consumables are as specified and fit for purpose
	2.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and useable condition
	2.5 Ensure the materials are prepared to the required procedure
	2.6 Ensure completion of prepared in line with organisational procedures
	2.7 Identify and resolve straight forward problems and report those that cannot be solved
3 Join materials by manually controlled welding process	3.1 Follow the relevant joining procedure and job instructions
	3.2 Ensure that the joint preparation complies with the specification
	3.3 Ensure that joining and related equipment and consumables are as specified and fit for purpose
	3.4 Make joints as specified using the appropriate welding techniques
	3.5 Produce joints of the required quality and of specified dimensional accuracy
	3.6 Shut down equipment to a safe condition on completion of joining activities
	3.7 Deal promptly and effectively with problems and report those that cannot be resolved

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| 4 | Carry out the necessary actions after completing the joining materials by manually controlled welding process | 4.1 | Re-instate the work area to a safe condition and correctly dispose of waste materials |
| | | 4.2 | Shut down the equipment to a safe condition on completion of steel fabrication activities |
| | | 4.3 | Store re-usable materials, consumables and equipment in accordance with appropriate procedures |
| | | 4.4 | Clearly identify the stored resources |
| | | 4.5 | Complete all necessary documentation |
| 5 | Understand health and safety legislation, regulations and safe working practices and procedures | 5.1 | Explain the requirements of health and safety legislation |
| | | 5.2 | Explain the purpose and nature of risk assessments, method statements and permit to work systems, and the relevance of local procedures and guidance notes |
| | | 5.3 | Describe the hazards and risks that can arise from steel fabrication operations |
| | | 5.4 | Describe reporting lines and procedures |
| 6 | Understand work area, material and equipment preparation and reinstatement requirements for joining materials by manually controlled welding process | 6.1 | Describe methods and requirements for preparation and reinstatement of work area, material and equipment |
| | | 6.2 | Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment |
| | | 6.3 | Describe the types of equipment used for moving loads and explain the care and control procedures |
| 7 | Understand the tools, terminology, techniques and practices for joining materials by manually controlled welding process | 7.1 | Explain the principles, uses and conventions of engineering drawings and related specifications |
| | | 7.2 | Describe thermal joining processes and equipment |
| | | 7.3 | Describe material handling, preparation and finishing methods and techniques |
| | | 7.4 | Describe materials and their joining characteristics |
| | | 7.5 | Describe equipment setting operating and care procedures |
| | | 7.6 | Describe quality control and test procedures for detection of defects in joints |



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