Qualification Specification

ProQual Level 2 Award in Understanding the Principles and Practice of Wellbore Casing and Cementing

Contents

Introduction

The Level 2 Award in Understanding the Principles and Practice of Wellbore Casing and Cementing provides candidates with an understanding of wellbore casing and cementing used in oil and gas environments.

The Regulated Qualifications Framework (RQF) is the single framework for regulated qualifications, the regulatory body for this qualification is the Office of Qualifications and Examinations Regulation (Ofqual). This qualification is accredited onto the RQF.

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 Profile

Qualification title	**ProQual Level 2 Award in Understanding the Principles and Practice of Wellbore Casing and Cementing**
Ofqual qualification number	610/0539/3
Level	2
Total Qualification Time	30 hours (30 GLH)
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	28/2/2022
Qualification end date	

Qualification Structure

Candidates must complete **TWO** Mandatory unit

F/650/1510 Understanding Wellbore Casing and Tubing
H/650/1511 Understanding Wellbore Cementing

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 occupationally competent.

Assessors/Internal Quality Assurance
For each competence-based unit centres must be able to provide at least one assessor and one internal quality assurance verifier who are suitably qualified for the specific occupational area. Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or quality assurance verifier qualifications, such as:

- ProQual Level 3 Certificate in Teaching, Training and Assessing
- Award in Assessing Competence in the Work Environment
- Award in Assessing Vocationally Related Achievement
- Certificate in Assessing Vocational Achievement
- Award in the Internal Quality Assurance of Assessment Processes and Practices
- Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practices

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

Candidates must demonstrate the level of knowledge and competence described in the unit. Assessment is the process of measuring a candidate's knowledge and understanding against the standards set in the qualification.

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

Evidence can include:
- assignments/projects/reports
- worksheets
- portfolio of evidence
- record of oral and/or written questioning

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 for this qualification can be found from page 7 onwards.

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 demonstrate achievement of the qualification will be awarded a certificate giving the full qualification title -

> **ProQual Level 2 Award in Understanding the Principles and Practice of Wellbore Casing and Cementing**

Claiming certificates

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

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 F/650/1510
Understanding Wellbore Casing and Tubing

Learning Outcome - the learner will:		Assessment Criterion - the learner can:	
1.	Understand the principles of wellbore casing, casing design and the parameter considerations	1.1	Explain casing and its functions in relation to drilling and wellbores
		1.2	Highlight the importance of casing of wellbores
		1.3	Describe the following types of casing strings: • Conductor Casing • Surface Casing (Structural Casing) • Intermediate Casing • Casing Liner • Production Casing • Production Tubing
		1.4	Explain the process and considerations for selecting casing sizes, hole sizes and setting depths in order to achieve the objectives of a well
		1.5	Explain the determination of casing load requirements from a design stand point
		1.6	Describe casing stress and how to execute casing stress calculations
		1.7	State the factors and parameters to be considered when planning and executing a casing operation
2.	Understand oil well casing processes	2.1	Describe casing coupling and assemblage
		2.2	Explain oil well casing program
		2.3	Describe how to safely conduct a casing running operation
		2.4	State casing properties required to meet burst, collapse, and tensile strength requirements during drilling operations
		2.5	List 5 casing handling equipment and describe their functions and applications
		2.6	Explain the relevance and application of casing, multi-stage, and tie-back strings in the design of the well bore cementation process

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit H/650/1511
Understanding Wellbore Cementing

Learning Outcome - the learner will:		Assessment Criterion - the learner can:	
1.	Understand the principle of wellbore cementing	1.1	Explain cementing in relation to the well construction plan
		1.2	State the main functions of cement slurry circulated while carrying out drilling operations
		1.3	Highlight the importance of flow measurements during cementing operations
		1.4	Describe the effect of leakage of formation fluids into wellbores
		1.5	Describe the effect of temperature variation on the process of wellbore cementing
2.	Understand the process of wellbore cementing	2.1	List the surface equipment requirements for cementing operations
		2.2	Describe the functions and components of the cement mixing and pumping equipment
		2.3	State the commonly used mechanical devices for running pipe and injecting cement around the casing
		1.4	Describe the 5-step procedure for cement placement
		1.5	Explain procedures for successful primary cementing
		1,6	Describe how to perform cement plug operations to improve overall job success
		1.7	Describe remedial (squeeze) cement operations, the processes involved and the appropriate selection of squeeze tools
3.	Understand cement composition, properties and characteristics	3.1	Explain the following cement properties and their desirability for cementing operations • Comprehensive strength • Thickening time • Slurry density • Water loss • Permeability
		3,2	Describe the various cement powder classes and their characteristics
		3.3	Explain the design of cement slurries using API, field adapted procedures and/or laboratory testing procedures.
		3.4	List and describe various cement additives, their uses and benefits
4.	Understand the functions and applications of liners and liner cementing procedures	4.1	Describe liner cementing, its function and applications.
		4.2	Describe the following categories of liners and their relevance to the improvement of drilling operations • Drilling liners • Production liners • Stub liners

		4.3	Suggest solutions to the following liner cementing challenges: • Pre flush/Spacer • Fluids Placement
		4.4	Describe procedures for liner running, setting and cementing
5	Understand well cementation operations evaluation	5.1	State the importance of evaluation of cementing operations to the structural integrity of oil wells.
		5.2	Explain well cementation operation evaluation using: • Job data records • Wire line tools

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

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