Dearbhú Cáilíochta agus Cáilíochtaí Éireann
Quality and Qualifications Ireland

# Component Specification

## Concreting

## NFQ Level 4

## 4N2849

### 1. Component Details

| | |
|---|---|
| **Title** | Concreting |
| **Teideal as Gaeilge** | Coincréitiú |
| **Award Class** | Minor |
| **Code** | 4N2849 |
| **Level** | 4 |
| **Credit Value** | 10 |
| **Purpose** | The purpose of this award is to equip the learner with the requisite skills and knowledge to transport, lay, compact and finish concrete under various conditions. |
| **Learning Outcomes** | Learners will be able to: |

1 Investigate the key issues of health and safety regarding the hazards of working with cement and concrete

2 State the reasons for ensuring that all plant used for the concreting process are checked and maintained

3 Outline the procedures necessary for the preparation of formwork and footings prior to concreting

4 Explain the theory and terminology in relation to the various types of mixes such as mix ratio, strength, setting times, curing, segregation and slump/silt testing

5 Outline the reasons, methods and plant used for compacting concrete and the problems that occur if not correctly carried out

6 State the purpose of steel reinforcement and expansion and kicker joints

7 Explain what radon gas is and how it can be prevented from entering a building

8 Operate plant used in the concreting process including a diesel mixer, powerfloat, vibrating plate compactor and vibrating plate engine

9 Prepare a hardcore base, blind and compact by roller/vibrating plate for a concrete floor slab

10 Demonstrate the various types of concrete finishes and the proper methods of protecting it from bad weather

11 Calculate the volumes of concrete required for ground floor slabs, walls, beams and columns

12 Carry out the proper procedures for concreting formwork including oiling, mixing, placing and finishing concrete

13 Demonstrate the proper methods for concreting a floor slab including setting up the screed, blinding, laying DPM, mixing, pouring, vibrating, floating and finishing

14 Demonstrate the proper methods for concreting a path including the preparation of the hardcore base, mixing, pouring, rolling, adding colour hardener and finishing of concrete.

## Assessment

**General Information**

Details of FET assessment requirements are set out in Assessment Guidelines for Providers.

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are **reliable** and **valid** but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or team work may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans will include information relating to scheduling and integration of assessment. See current FET validation guidelines at www.qqi.ie.

**Assessment Techniques**

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and FETAC's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. See current FET validation guidelines at www.qqi.ie.

All learning outcomes **must** be assessed and achieved

| | |
|---|---|
| Project | 70% |
| Examination - Theory | 30% |

**Description**

**Project**

*A project is a response to a brief devised by the assessor. A project is usually carried out over an extended period of time. Projects may involve research, require investigation of a topic, issue or problem or may involve process such as a design task, a performance or practical activity or production of an artefact or event.*

**Examination - Theory**

*An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions.*

*A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.*

**Recognition of Prior Learning (RPL)**

Learners may be assessed on the basis of their prior knowledge and experience. Providers must be specifically quality assured to assess learners by this means. To do so they must complete B10, see Provider's Quality Assurance Guidelines and be included on the Register of RPL approved providers. See RPL Guidelines at www.fetac.ie for further information and registration details.

**Grading**

| | |
|---|---|
| Pass | 50% - 64% |
| Merit | 65% - 79% |
| Distinction | 80% - 100% |

**Specific Validation Requirements**

The provider must have all of the following in place to offer this award:
Water Pump

1. Vibrating Poker
2. Con Saw
3. Vibrating Compaction Plate
4. Diesel Concrete Mixer
5. Petrol Concrete Mixer
6. Electric Concrete Mixer
7. Kango Hammer and Range of Attachments
8. Power Float
9. Optical Site Level, Tripod and Staff
10. Hydraulic Flag/Pavior Splitter
11. Steel Container
12. Power Washer
13. Skill Saw 100v
14.

**Supporting Documentation**

1. Current Health and Safety Authority construction regulations and codes of practice.

**Access**

To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.

**Transfer**

Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.

## 2. FET Award Standards

QQI award standards are determined within the National Framework of Qualifications (NFQ), http://www.nfq-qqi.com. QQI determines standards for the education and training awards that it makes itself and that are made by providers to whom it has delegated authority to make an award. Providers offering programmes leading to QQI awards **must** have their programme(s) validated in accordance with current validation policy (see www.qqi.ie).

Award standards are designed to be consistent with the NFQ's award classes i.e. major, special purpose, supplemental and minor awards. They are expressed in terms of **learning outcomes** i.e. concise statements of what the learner is expected to know or be able to do in order to achieve a particular award. Learning outcomes for FET awards are contained within the associated specifications:

| AWARD CLASS | STANDARDS | AWARDS |
|---|---|---|
| Major Award | Certificate Specification | Certificate (Levels 1 to 5)<br>Advanced Certificate (Level 6) |
| Supplemental Award | Supplemental Specification | Supplemental Certificate<br>(Level 3 to 6) |
| Special Purpose | Specific Purpose Specification | Specific Purpose Certificate<br>(Levels 3 to 6) |
| Minor Award | Component Specification | Component Certificate<br>(Levels 1 to 6) |

Award standards are thresholds, they describe standards of knowledge, skill or competence to be acquired, and where appropriate, demonstrated, by a learner before an award may be made.

Award standards will be reviewed from time to time as necessary. Minor changes may be made by the QQI executive outside the review cycle where necessary. Changes to standards are published on QQI's website. Providers with validated programmes and providers with delegated authority to make awards are responsible for monitoring relevant standards and making necessary responses to changes.

## 3. FET Credit

Every FET certificate and component specification includes an FET credit value (Table 1). FET credit is quantified in multiples of 5 FET credits (up to 50 hours of learner effort). Learner effort is based on the time taken by typical learners at the level of the award to achieve the learning outcomes for the award. It includes all learning time involved including: guided learning hours, self-directed learning and assessment.

**Table 1: FET Credit Values**

| NFQ Level | Major Awards Credit Values | Default Credit Values Minor Awards | Other Permitted Minor Award Credit Values | Special Purpose and Supplemental Award Credit Value Ranges |
|---|---|---|---|---|
| 1 | 20 | 5 | 10 | |
| 2 | 30 | 5 | 10 | |
| 3 | 60 | 10 | 5,20 | >5 and<60 |

| | | | | |
|---|---|---|---|---|
| 4 | 90 | 10 | 5,15,20 | >5 and<90 |
| 5 | 120 | 15 | 5,10,30 | >5 and <120 |
| 6 | 120 | 15 | 5,10,30 | >5 and <120 |

**Guide to Level**

Independence is the hallmark of this level. Learning outcomes at this level correspond to a growing sense of responsibility for participating in public life and shaping one's own life. The outcomes at this level would be associated with first-time entry to many occupational sectors.

| **Strand** | **Sub-strand** | **Nature of learning** |
|---|---|---|
| Knowledge | Breadth | Broad range of knowledge |
| | Kind | Mainly concrete in reference and with some elements of abstraction or theory |
| Know How & Skill | Range | Demonstrate a moderate range of practical and cognitive skills and tools |
| | Selectivity | Select from a range of procedures and apply known solutions to a variety of predictable problems |
| Competence | Context | Act in familiar and unfamiliar contexts |
| | Role | Act with considerable amount of responsibility and autonomy |
| | Learning to Learn | Learn to take responsibility for own learning within a supervised environment |
| | Insight | Assume partial responsibility for consistency of self-understanding and behaviour |

*Extract from 'Determinations for the Outline National Framework of Qualifications': NQAI*