



Dearbhú Cáilíochta  
agus Cáilíochtaí Éireann  
Quality and  
Qualifications Ireland

# QQI AWARDS STANDARDS.

Construction and Engineering

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# Foreword

The Qualifications and Quality Assurance Act 2012 requires QQI to ‘determine the standards of knowledge, skill or competence to be acquired, and where appropriate, demonstrated, by a learner before an award may be made by the Authority’. QQI award standards are based on the level indicators and award type descriptors of the National Framework of Qualifications (NFQ) and are governed by QQI Policy for the Determination of Award Standards.

Based on systematic engagement with subject matter expertise and public consultation, award standards for certain broad fields of learning were developed for QQI awards at level 1-4 on the NFQ. These standards represent an elaboration of the generic descriptors of the NFQ. They should facilitate experts in particular fields of learning to create the link between their programmes’ intended learning outcomes and the NFQ. Each award standard is cumulative, the statements of knowledge, skill and competence at NFQ levels 2, 3 and 4, build on the attainment of standards at lower levels, which are not necessarily reproduced at the higher level(s). The implementation and use of these standards is subject to QQI Policy and Criteria for the Validation of Programmes and QQI Policy for the Making of Awards. Whenever an award standard changes, programmes must be updated and validated against the new standards.

These standards are not programme specifications. It is through these, however, that the relationship between a programme, its component parts and the NFQ should be evident. The standards are a reference point and a point of comparison against which individual programmes may be justified.

They are intended to provide general guidance for articulating the learning outcomes associated with a particular field of learning. In designing programmes, providers must take cognisance of the standards for specific fields of learning where they generally relate to the programme being developed. It is, however, recognised that there is a significant growth in multi-disciplinary/inter-disciplinary programmes; there are emerging fields of learning; and in addition, within each field there is the vast spectrum of programmes possible based on a wide range of purpose. In this context, it is not possible to have a standard, or multiple standards, that cater for the complete range of programmes possible. It is therefore expected that the standards for specific fields of learning will be used as reference points for the design of programmes. In designing programmes, providers can draw from more than one standard.

In drafting the standards every effort has been made to ensure that they will provide for flexibility and variety in the design of programmes and therefore encourage innovation within an overall agreed framework. It is not expected that all programmes will include every learning outcome identified in a standard. It is, however, expected that many programmes will include learning outcomes that are not included in the relevant standard.

When designing a programme, each learning outcome in the standard should be considered. Where departure from these is necessary, it should be justified in the context of the specific orientation of the programme and other facts pertaining to it. Each programme provider should be able to demonstrate how the design and content of its own programmes has been informed by the standard.

The level descriptors of the Framework, the award type descriptors and consequently the standards for the specific fields of learning are divided into three different types of learning outcomes - knowledge, skill and competence. These strands are further subdivided into eight sub-strands. Each strand/sub-strand is important. The relative weighting of each strand in a programme will vary from programme to programme. The weighting will be determined by many factors, including for example, the practical nature of a programme, or otherwise.

Each strand/sub-strand should be addressed appropriately in every programme. Where a programme is multidisciplinary or inter-disciplinary in nature, the use of more than one standard may be necessary. In such cases, the scope, depth and balance of knowledge, skill and competence should be attended to.

The titles of awards made by QQI on foot of these award standards shall be consistent with QQI Policy on the Making of Awards with an exception in the case of major awards where the named award stem shall have the following form: 'Level X Certificate in Lifelong Learning in' [specialisation].

These standards are determined by QQI under section 49(1) of the Qualifications (Education and Training) Act 2012.

## AWARD STANDARDS – CONSTRUCTION AND ENGINEERING AT NFQ LEVELS 3 TO 4

### Purpose

The purpose of this broad award standard is to enable design of a variety of programmes enabling the learner to develop the relevant knowledge, skill and competence relevant to applying key parts of engineering and problem-solving methods in a supervised setting at NFQ Levels 3 and 4.

**Note: The indicators at each level build on the skills from the previous one.**

The outcomes at each NFQ level include those of all the lower levels in the same sub-strand unless stated otherwise.



## KNOWLEDGE

NFQ	LEVEL 3	LEVEL 4
Knowledge breadth	Knowledge moderately broad in range	Broad range of knowledge
Knowledge kind	Mainly concrete in reference and with some comprehension of relationship between knowledge elements	Mainly concrete in reference and with some elements of abstraction or theory
	The learner should be able to show the following:	The learner should be able to show the following:
<b>Breadth of knowledge</b>	<p>General knowledge of:</p> <ul style="list-style-type: none"> <li>work practices in the construction and/or engineering industries</li> <li>simple practical construction and/or engineering equipment, commonly used products, materials, methods and processes</li> <li>the everyday language, terms and ways to communicate in construction and/or engineering settings</li> <li>basic scientific, construction and/or engineering concepts</li> <li>mathematical formulas in familiar situations</li> <li>some of the expected standards of the construction and/or engineering industries and the concept of quality</li> <li>recycling construction waste</li> <li>relevant health and safety requirements.</li> </ul>	<p>General knowledge and understanding of:</p> <ul style="list-style-type: none"> <li>basic principles and how best to apply them in practical situations.</li> <li>commonly used construction and/or engineering equipment and materials</li> <li>basic scientific, construction and/or engineering concepts and how they connect</li> <li>simple construction and/or engineering mathematical formulas</li> <li>basic theoretical concepts in construction and/or engineering industries, including a solid understanding of how to develop practical solutions based on theories learned</li> <li>quality assurance standards, and health and safety requirements within the construction and/or engineering industries</li> <li>how construction and/or engineering interacts with related fields</li> <li>where to find information about the construction and/or engineering industries</li> <li>key roles and responsibilities of construction and/or engineering professionals</li> <li>basic construction and/or engineering measurements and calculations and how to use some of them.</li> </ul>



## KNOWLEDGE

NFQ	LEVEL 3	LEVEL 4
Know-how and skill range	Demonstrate a limited range or practical and cognitive skills and tools	Demonstrate a moderate range of practical and cognitive skills and tools
Know-how and skill selectivity	Select from a limited range of varied procedures and apply known solutions to a limited range of predictable problems	Select from a range of procedures and apply known solutions to a variety of predictable problems
	<p>Able to:</p> <ul style="list-style-type: none"><li>• use basic computer applications</li><li>• with support, show a limited range of practical skills while acting safely on basic instructions in the construction and / or engineering industries</li><li>• record, quantify, document, and communicate a limited range of simple activities and observations, for example inventory of storage materials or timesheets.</li></ul>	<p>Able to:</p> <ul style="list-style-type: none"><li>• use relevant computer applications</li><li>• with support, show a moderate range of practical skills while acting safely on basic instructions in the construction and/or engineering industries</li><li>• show a moderate range of organisational skills, for example completing or filing documents or correctly storing materials and tools.</li></ul>

## KNOWLEDGE

NFQ	LEVEL 3	LEVEL 4
Competence context	Act within a limited range of contexts	Act in familiar and unfamiliar contexts
	Use a limited range of construction and/or engineering skills, techniques and practices while working within a managed construction and engineering setting.	Use a moderate range of construction and/or engineering skills, techniques and practices while working within a supervised construction and engineering setting.



## KNOWLEDGE

NFQ	LEVEL 3	LEVEL 4
Competence role	Act under direction with limited autonomy; function within familiar, homogenous groups.	Act with considerable amount of responsibility and autonomy
	With support, take part effectively and safely in a construction and/or engineering setting.	Take part effectively and safely in a construction and/or engineering setting.

## KNOWLEDGE

NFQ	LEVEL 3	LEVEL 4
Competence learning to learn	Learn to learn within a managed environment	Learn to take responsibility for own learning within a supervised environment
	With support, discover personal learning potential in a construction and/or engineering environment.  Use curiosity and insight to learn within a managed setting.	Able to: <ul style="list-style-type: none"><li>• take responsibility for learning and personal development in a construction and, or engineering setting (with support)</li><li>• be open to learning opportunities to improve personal development, knowledge and skills within a construction or engineering setting (with support).</li></ul>



## KNOWLEDGE

NFQ	LEVEL 3	LEVEL 4
Competence insight	<b>Assume limited responsibility for consistency of self-understanding and behaviour</b>	<b>Assume partial responsibility for consistency of self-understanding and behaviour</b>
	Be aware of responsibilities to colleagues, the wider community and the natural environment when working in the construction and, or engineering industries.	When working in the construction or engineering sector, the learner should know what their responsibilities are to colleagues, the wider community and the natural environment. They should work in line with these responsibilities.



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