

Unit 80: Measurement Techniques in Construction

Unit code: Y/600/0356

QCF Level: 3

Credit value: 10

Guided learning hours: 60

Unit aim

The aim of this unit is to enable learners to develop the skills required to apply measurement techniques to produce a bill of quantities.

Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes	Assessment criteria
1. Be able to apply standard measurement techniques	Carry out measurement techniques for length, area, item, volume and number
	Use dimension paper following the take off process
2. Know about the standard methods of measurement	Outline the contents of SMM7
	Outline the contents of CESMM
3. Be able to undertake measurement tasks, applying mathematical calculations to the measurement process	Produce quantities for a simple low-rise domestic property from substructure and superstructure elements
	Apply mathematical calculations to the measurement process
4. Be able to produce quantity abstracts and bills of quantities pages of measured works using manual techniques	Produce final summaries from quantity abstracts
	Produce a bill of quantities for one building or civil engineering element

Unit content

1 Be able to apply standard measurement techniques

Measurement techniques: initial and/or approximate estimating techniques; production of client's budgets or scheme comparisons; production of contract documentation; measurement of variations; sub-contract and supply chain packages; final account procedures; term maintenance; refurbishment works

2 Know about the standard methods of measurement

Standard methods of measurement: SMM7 (building; building services engineering); CESMM (civil engineering); bill format (bills of quantities, codes, National Schedule of Rates)

3 Be able to undertake measurement tasks, applying mathematical calculations to the measurement process

Measurement tasks: taking off measurements and production of quantities for building (sections of a simple construction project, foundations and substructures, superstructure including external and internal walls, flat and pitched roof construction and coverings, internal and external finishes, internal components such as doors, windows, staircases and floors); taking off measurements and production of quantities for civil engineering (earthworks, cut and fill, drainage, manholes, roadways, simple concrete works, reinforcement)

Mathematical calculations: as appropriate to what is being measured

4 Be able to produce quantity abstracts and bills of quantities pages of measured works using manual techniques

Final summaries: word processed bill of quantities pages; abstracted quantities using spreadsheets

Quantity abstracts and bills of quantities: abstraction; working up; production of bills of quantities; production of final summaries

Production of bill of quantities: abstraction of dimensioned quantities; working up processes involved with these methods, production of a bill of quantities for a simple work section or trade section of a construction or civil engineering project