MEASURE AND CALCULATE OBJECTS PARAMETERS

UNIT CODE: CON/OS/PL/CC/01/3/A

Unit Description

This unit of competency covers the competencies required to measure and calculate various parameters of an object. It entails distinguishing objects to be measured and calculated, use and care for measuring and calculation instruments and calculating parameters of a given object. It applies in the construction sector.

ELEMENTS AND PERFORMANCE CRITERIA

Element These describe the key outcomes which make up workplace function	**Performance Criteria** These are assessable statements which specify the required level of performance for each of the elements ***Bold*** *and italicized terms are elaborated in the Range*
1. Distinguish objects to be measured and calculated	1.1 selected and gathered as per object to be measured or job requirements. 1.2 Specifications for ***measurement and calculations*** are obtained from relevant sources
2. Use and care for measuring and calculation instruments	2.1 Measurements are obtained according to job requirements 2.2 ***Measuring and calculation instruments*** are checked to the limit of accuracy of the tool. 2.3 Measuring and calculation instruments are maintained as per manufacturer's instructions. 2.4 Personal Protective Equipment is used in line with occupational safety and health regulations
3. Calculate parameters of a given object	3.1 Object is measured and readings recorded based of specification of the job. 3.2 Systems of measurement are identified and converted according to job requirements/ISO. 3.3 Calculations needed to complete work tasks are performed based on job specifications. 3.4 Numerical computation is self-checked and corrected for accuracy as per workplace policy. 3.5 Measurements and calculations are documented as per workplace policy.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variables	Range
1. Measuring and calculation instruments may include but not limited to	• Micrometer gauge (In-out, • depth) • Vernier calipers (out, inside) • Straight edge • Try-square • Protractor • Steel rule • Gauges • Tape measure • Pair of compasses • Pair of dividers • Calculator • T-Square
2. Measurement calculations may include and not limited to:	• linear • Volume • Area • Displacement • Inside diameter • Circumference • Length • Thickness • Outside diameter • Taper • Out of roundness

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency

Required Skills

The individual needs to demonstrate the following skills:

- Addition
- Subtraction
- Multiplication
- Division
- Algebraic equations
- Visualizing
- Interpreting
- Tool handling
- Communication
- Inter personal
- Reading
- Analytical

Required Knowledge

- The individual needs to demonstrate knowledge of:
- Four fundamental operations
- Linear measurements
- Dimensions
- Unit conversion
- Ratio and proportion
- Algebraic equations
- Use and maintenance of masonry tools and equipment
- Geometrical shapes.

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Selected and prepared measuring and calculation instruments correctly. 1.2 Performed measurements and calculations accurately 1.3 Obtained measurement and calculations specifications from relevant sources.

	1.4 Checked measuring and calculation instruments accuracy to the limit of the tool. 1.5 Measured and recorded objects' readings based of specification of the job. 1.6 Identified and converted systems of measurement to job requirements. 1.7 Performed calculations needed to complete work tasks accurately. 1.8 Self-checked and corrected numerical computations for accuracy
2. Resource Implications	The following resources must be provided: 2.1 Workplace location 2.2 A problem to solve 2.3 Measuring instrument appropriate to carry out tasks 2.4 Instructional materials relevant to the proposed activity
3. Methods of Assessment	Competency may be assessed through: 3.1 Observation. 3.2 Written test 3.3 Interview 3.4 Oral questioning 3.5 Project
4. Context of Assessment	Assessment may be done: 4.1 On-the –job 4.2 Off-the –job 4.3 During work placement
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector workplace and job role is recommended