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**SOUTH AFRICAN QUALIFICATIONS AUTHORITY
REGISTERED UNIT STANDARD:**

Explain the dynamic interaction of the various elements to a functional roof structure

SAQA US ID		UNIT STANDARD TITLE		
263814		Explain the dynamic interaction of the various elements to a functional roof structure		
ORIGINATOR		REGISTERING PROVIDER		
SGB Forestry				
QUALITY ASSURING BODY				
-				
FIELD			SUBFIELD	
Field 01 - Agriculture and Nature Conservation			Forestry and Wood Technology	
ABET BAND	UNIT STANDARD TYPE	OLD NQF LEVEL	NEW NQF LEVEL	CREDITS
Undefined	Regular	Level 4	NQF Level 04	4
REGISTRATION STATUS		REGISTRATION START DATE	REGISTRATION END DATE	SAQA DECISION NUMBER
Registered		2009-05-13	2012-05-13	SAQA 0181/09
LAST DATE FOR ENROLMENT		LAST DATE FOR ACHIEVEMENT		
2013-05-13		2016-05-13		

In all of the tables in this document, both the old and the new NQF Levels are shown. In the text (purpose statements, qualification rules, etc), any reference to NQF Levels are to the old levels unless specifically stated otherwise.

This unit standard does not replace any other unit standard and is not replaced by any other unit standard.

PURPOSE OF THE UNIT STANDARD

A functional roof structure is based on the key considerations of the impact of forces and weight distribution that can be handled by the holding structure. Qualifying learners apply their understanding of the various interacting factors in roof design in order to deliver estimates that do not compromise quality output.

In general, learners credited with this unit standard are able to demonstrate an understanding of the theory of structures, to which roofs are designed and arranged, to be able to carry all the applied loads.

In particular, qualifying learners are able to:

- Discuss triangulation and the transfer of the load to the foundations.
- Differentiate between load definitions, application and specification.
- Identify the difference between, and impact of the different types of structural forces.
- Identify the strength and impact of materials on a structure.
- Describe the methods of connections used in the design and manufacture of trusses.

This unit standard is intended to promote skills in the wood processing and construction fields in order to raise competence levels in the various industries served by informed and competent workers.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

It is assumed that learners are competent in communication and mathematical literacy at NQF Level 3 or an equivalent.

UNIT STANDARD RANGE

N/A

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Discuss triangulation and the transfer of the load to the foundations with respect to roof structure.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Truss triangulation is defined for estimation process.

ASSESSMENT CRITERION 2

The effect of triangulation on load transfer is discussed with respect to roof structure.

SPECIFIC OUTCOME 2

Differentiate between load definitions, application and specification with respect to roof structure.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

The different types of loads are identified.

ASSESSMENT CRITERION 2

Load types are defined.

ASSESSMENT CRITERION 3

Examples of loads are given.

SPECIFIC OUTCOME 3

Identify the difference between, and impact of the different types of structural forces.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Types of structural forces are identified and described with respect to roof structure.

ASSESSMENT CRITERION 2

The impact of forces on the holding structure is described.

ASSESSMENT CRITERION 3

Force calculations are defined.

SPECIFIC OUTCOME 4

Identify the strength and impact of materials on a structure.

ASSESSMENT CRITERIA**ASSESSMENT CRITERION 1**

"Stress" is defined according to roofing terminology.

ASSESSMENT CRITERION 2

Tensile stress, compressive stress and bending stress are defined.

ASSESSMENT CRITERION 3

The combined stress index is defined.

ASSESSMENT CRITERION 4

The effect of forces on materials e.g. effective lengths for compression and tension is identified.

SPECIFIC OUTCOME 5

Describe the methods of connections used in the design and manufacture of trusses.

ASSESSMENT CRITERIA**ASSESSMENT CRITERION 1**

Methods of connections used in the design and manufacture of trusses are identified.

ASSESSMENT CRITERION 2

Methods of connections used in the design and manufacture of trusses are explained.

ASSESSMENT CRITERION 3

The limitation(s) of the connections used by the applicable system suppliers is identified.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS

- Anyone assessing a learner or moderating the assessment of a learner against the unit standard must be registered as an assessor with the relevant Education, Training, Quality, Assurance (ETQA) Body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- Any institution offering learning that will enable the achievement of this unit standard must be accredited as a provider with the relevant Education, Training, Quality, Assurance (ETQA) Body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- Assessment and moderation of assessment will be overseen by the relevant Education, Training, Quality, Assurance (ETQA) Body, or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.
- Moderation must include both internal and external moderation of assessments, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence

described in the associated unit standards.

- Anyone wishing to be assessed against this qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the relevant ETQA.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

Knowledge considered critical to the successful achievement of this unit is covered in the specific outcomes and assessment criteria.

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING

This will be achieved when:

- The qualifying learner identifies and differentiates between load definitions, the impact of the different structural forces and the methods of connections used in the design and manufacture of trusses.

UNIT STANDARD CCFO WORKING

The qualifying learner works effectively with role players.

UNIT STANDARD CCFO ORGANISING

The qualifying learner is able to organise and manage him/her self and own activities responsibly and effectively in the process of gathering key data in the roof estimation process.

UNIT STANDARD CCFO COLLECTING

The qualifying learner collects and analyses dimensions to organise and critically evaluate information from roof maps, sketches and designs.

UNIT STANDARD CCFO COMMUNICATING

The qualifying learner communicates effectively using visual, mathematical and/or language skills with the various role players.

UNIT STANDARD CCFO DEMONSTRATING

The qualifying learner demonstrates understanding of the impact of structural forces on structures and the consequences of one's action as a roof truss estimator.

QUALIFICATIONS UTILISING THIS UNIT STANDARD:

	ID	QUALIFICATION TITLE	OLD LEVEL	NEW LEVEL	STATUS	END DATE
Core	66370	Further Education and Training Certificate: Roof Truss Technology	Level 4	NQF Level 04	Registered	2012-05-13

PROVIDERS CURRENTLY ACCREDITED TO OFFER THIS UNIT STANDARD:

This information shows the current accreditations (i.e. those not past their accreditation end dates), and is the

most complete record available to SAQA as of today. Some Quality Assuring Bodies have a lag in their recording systems for provider accreditation, in turn leading to a lag in notifying SAQA of all the providers that they have accredited to offer qualifications and unit standards, as well as any extensions to accreditation end dates. The relevant Quality Assuring Body should be notified if a record appears to be missing from here.

NONE

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