

	<b>Unit ID: 1927</b>
<b>Domain</b>	<b>BUILDING AND CIVIL CONSTRUCTION MANAGEMENT</b>
<b>Title:</b>	<b>Understand and apply Structural Principles</b>
<b>Level: 5</b>	<b>Credits: 7</b>

### Purpose

This unit standard is intended for those who understand and apply structural principles. People credited with this unit standard are able to demonstrate understanding of fundamental laws pertaining to structures, demonstrate an understanding of the behaviour of structures and structural elements and generates and implements solutions to structural problems.

This unit standard is intended for those who work as building and civil construction management.

### Special Notes

1. Entry information:

Prerequisites

- *Unit 1157- Demonstrate basic knowledge of workplace health and safety or demonstrated equivalent knowledge and skills.*

2. Effects of loads on structures includes but not limited to the determination of member's forces in structure by numerical and graphical methods, rotational effects of forces, rotational equilibrium and the determination of support reactions.

3. Assessment evidence may be collected from a real workplace or simulated real workplace environment in which building and civil construction management are carried out.

4. Performance of all elements in this unit standard must comply with all relevant workplace requirements and/or manufacturers' specifications.

5. Regulations and legislation relevant to this unit standard include the following:

- Labour Act 2007(Act no 11, 2007)
- Regulations relating to the health & Safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007 and all subsequent amendments.
- Local Authorities Act. 23, 1992
- SABS 0400
- Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977) and all subsequent amendments.

## **Quality Assurance Requirements**

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority on [www.nta.com.na](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Elements 1: Demonstrate an understanding of fundamental laws pertaining to structures**

#### **Performance Criteria**

- 1.1 Structural materials and material selection criteria are explained.
- 1.2 Laws of Newton and their application to structures are explained.

### **Elements 2: Demonstrate an understanding the behavior of structures and structural elements**

#### **Performance Criteria**

- 1.3 Different types of loads on structures are explained.
- 1.4 Effects of loads on structural elements are identified and evaluated.
- 1.5 Bending moments and sheer forces are determined for a structure.

### **Elements 3: Generate and implement solutions to structural problems**

#### **Performance Criteria**

- 3.1 Causes of structural failure are identified and explained.
- 3.2 Analytical approach to solving structural problems is implemented.
- 3.3 Solutions to structural problems are implemented.

## **Registration Data**

<b>Subfield:</b>	Civil and Building Services Engineering
<b>Date first registered:</b>	30 August 2018
<b>Date this version registered:</b>	30 August 2018
<b>Anticipated review:</b>	2023
<b>Body responsible for review:</b>	Namibia Training Authority