No. 411 **11 May 2007**

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

Vehicle Maintenance

registered by Organising Field 06 – Manufacturing, Engineering and Technology, publishes the following qualification and unit standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standards. The full qualification and unit standards can be accessed via the SAQA web-site at **www.saqa.org.za**. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the qualification and unit standards should reach SAQA at the address below and ***no later than 11 June 2007.*** All correspondence should be marked **Standards Setting – Vehicle Maintenance** and addressed to

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
National Certificate: Automotive Repair and Maintenance

SAQA QUAL ID	***QUALIFICATION TITLE***		
58497	National Certificate: Automotive Repair and Maintenance		
SGB		***PROVIDER***	
SGB Vehicle Maintenance			
ETQA			
QUALIFICATION TYPE	***FIELD***	***SUBFIELD***	
National Certificate	6 - Manufacturing, Engineering and Technology	Manufacturing and Assembly	
ABET BAND	***MINIMUM CREDITS***	***NQF LEVEL***	***QUAL CLASS***
Undefined	120	Level 3	Regular-Unit Stds Based

PURPOSE AND RATIONALE OF THE QUALIFICATION
Purpose:

The purpose of the qualification is to provide learners with the standards and the range of learning required to work effectively in various industries making use of automotive repair and maintenance skills and to meet the challenges of the automotive industry and related environments.

The primary skill that is recognised in this qualification is the ability to apply the fundamentals of automotive repair and maintenance technology in order to service and maintain vehicles.

This capability requires an understanding of basic repairing and maintenance theory, names and functions of fluids and lubricants, automotive components and how to read and interpret workshop manuals and workshop procedures.

A thorough knowledge of automotive components and systems, workshop equipment and an ability to read, interpret and understand task instructions and job cards are required.

Recipients of one of the variations of this qualification are able to conduct the essential maintenance and related operations associated with the range of vehicles in use today and efficient and safe operational practices in the following specialisation areas:

- Repair and maintain vehicles.
- Fuel system diagnostics.
- Spray painting.
- Auto body repair.

With this understanding learners will be able to participate in operational activities. What learners achieve in this qualification will also serve as a basis for further learning where they will engage in more complex automotive maintenance and repair activities in the field of vehicle technology.

Rationale:

This qualification in automotive repair and maintenance NQF Level 3 has been developed as a progression from qualifications in automotive repair and maintenance at NQF Level 2. The

development was necessary to build the competencies for learners to apply the fundamentals of automotive repair and maintenance technology to service and maintain vehicles.

The field of automotive maintenance and repair is characterised by the overall maintenance of vehicle systems as well as the removal, dismantling and replacement of components and adjustments to vehicle systems. This in turn provides support and job opportunities to a variety of small businesses in the retail motor and related industries.

People working in the automotive repair and maintenance field require technical skills and knowledge.

There is also a critical need in the industry to identify people who are able to conduct the essential maintenance and related operations associated with the range of vehicles on the road today and apply efficient and safe operational practices in at least one of the following specialisation areas:

- Repair and maintain vehicles.
- Fuel system diagnostics.
- Spray painting.
- Auto body repair.

This is the second qualification in a series for learners who want to follow a career in the field of automotive repair and maintenance. This qualification focuses on developing skills and knowledge necessary to perform as a competent person in the automotive industry.

It also provides learners who have gained relevant experience in the workplace with an opportunity to obtain credits through an RPL process. The qualification also forms the basis for further learning in the field of automotive technology.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED TO BE IN PLACE
It is assumed that learners are already competent in:

- Communication at NQF Level 2.
- Mathematical literacy at NQF Level 2.
- Workplace safety at NQF Level 2.

Recognition of Prior Learning:

This qualification may be obtained through a process of RPL. The learner should be thoroughly briefed prior to the assessment and support provided to assist in the process of developing a portfolio. While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit-level outcomes.

Access to qualification:

- Access to this qualification is open. However, it is preferable that learners have completed the National Certificate in Automotive Repair and Maintenance at NQF Level 2.
- Hand skills and physical endurance will play an important role in this qualification, and learners who have physical disabilities (depending on the type and severity of the disability) would find it difficult to achieve the outcomes of this qualification.

QUALIFICATION RULES
Learners must achieve all 36 credits from the fundamental unit standards.

Learners must achieve all 35 credits from the core unit standards.

Learners may select a specialisation area of their choice, and all 30 credits in that specialisation area must be completed. An additional 19 credits must be selected from any of the elective unit standards to achieve a minimum of 120 credits.

Specialisation Areas consist of the following unit standards:

Specialisation Areas 1: Repair and maintain vehicles in a specialised area (30 Credits compulsory):

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 244059; Remove automotive main components; Level 3; 4 Credits.
- Elective; ID 244052; Install automotive main components; Level 3; 6 Credits.
- Elective; ID 244053; Dismantle automotive main components; Level 3; 4 Credits.
- Elective; ID 244049; Repair and assemble automotive components Level 3; 8 Credits.
- Elective; ID 15110; Test and report on condition of vehicle charging system; Level 3; 4 Credits.
- Elective; ID 15107; Test and report on condition of vehicle starting system; Level 3; 4 Credits.

Total Credit 30.

Specialisation Areas 2: Fuel system diagnostics (30 Credits compulsory):

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 244056; Understand the fundamentals of engine technology; Level 3; 4 Credits.
- Elective; ID 244054; Demonstrate knowledge of electronic fuel injection and engine management systems; Level 3; 10 Credits.
- Elective; ID 244058; Perform a basic condition test on vehicle engine; Level 3; 8 Credits.
- Elective; ID 15110; Test and report on condition of vehicle charging system; Level 3; 4 Credits.
- Elective; ID 15107; Test and report on condition of vehicle starting system; Level 3; 4 Credits.

Total Credit 30.

Specialisation Areas 3: Auto Body Repair (30 Credits compulsory):

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 244116; Perform a repair process on deformed ferrous metal panels; Level 3; 11 Credits.
- Elective; ID 244112; Remove, fit and align the body panels of a vehicle; Level 3; 8 Credits.
- Elective; ID 244115; Replace vehicle trim; Level 3; 6 Credits.
- Elective; ID 244111; Remove and replace a dashboard; Level 3; 5 Credits.

Total Credit 30.

Specialisation area 4: Spray Painting (30 Credits compulsory):

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 244173; Mix and match paint colours;Level 3; 8 Credits.
- Elective; ID 244161; Apply metallic 2 coat paint finishes; Level 3; 4 Credits.
- Elective; ID 113847; Foster and maintain customer relations; Level 3; 10 Credits.
- Elective; ID 13223; Apply safety, health and environmental protection procedures; Level 3; 6 Credits.

• Elective; ID 114812; Manage paint and consumable stock levels; Level 4; 2 Credits.

Total Credit 30.

EXIT LEVEL OUTCOMES

1. Communicate and solve problems in a variety of ways.

2. Conduct work activities within an automotive repair environment.

3. Repair and maintain vehicles in a specialised area.
• Range: One of Passenger & light delivery vehicles, Earthmoving equipment, Commercial vehicles, Forklifts.

Or

4. Demonstrate understanding of fuel injection systems and conduct minor repairs and maintenance tasks.

Or

5. Paint automotive body panels.

Or

6. Repair automotive body panels.

ASSOCIATED ASSESSMENT CRITERIA

1.
• Oral communication is maintained and adapted as required to promote effective interaction in a work context.
• Information is accessed from standing instructions, visual information and a range of other workplace texts and responses where required are appropriate to the context.
• Written communication is clear and unambiguous and at an appropriate level for designated target audiences.
• Mathematical functions are used correctly to solve routine workplace problems and tasks.

2.
• Organisational procedures are explained in relation to the work environment.
• Financial implications of actions taken are understood in relation to efficiency of business.
• Work is conducted in accordance with agreed time schedules.
• Work is conducted efficiently with a minimum of wastage.
• Quality is managed in accordance with industry best practice.

3.
• Work area and vehicle are prepared for diagnoses and repair.
• Appropriate test equipment is connected to workplace specifications.
• Components are removed and replaced in accordance with workplace requirements.
• Components are dismantled and assembled according to manufacturer recommendations.
• Component replacement parts are ordered in accordance with workplace procedures.
• Safety procedures are adhered to during the diagnosing and repairing task.

Or

4.
• Engine technology is described in relation to engine construction and systems implemented in industry.

- Work area and vehicle is prepared for diagnoses and repair.
- Appropriate test equipment is connected to workplace specifications.
- Mechanical systems are repaired according to manufacturer recommendations.
- Safety procedures are adhered to during the diagnosing and repairing task.
- The differences of fuel systems are explained in terms of their advantages and application.

Or

5.
- Paint colours are mixed to match existing paint.
- Paint is applied to automotive body panels in accordance with manufacturer specifications.
- Paint and consumable stock are managed in accordance with company requirements.
- Work is conducted in accordance with relevant safety legislation.

Or

6.
- Vehicle body panels are removed and replaced in accordance with manufacturer specifications.
- Interior and exterior vehicle trim are removed and replaced in accordance with manufacturer specifications.
- Vehicle glass is removed and replaced in accordance with manufacturer specifications.
- Vehicle dashboards are removed and replaced in accordance with manufacturer specifications.
- Ferrous metal panels are repaired to original specifications.

Integrated Assessment:

Integrated assessment at the level of the qualification provides an opportunity for learners to show they are able to integrate concepts, actions and ideas achieved across a range of unit standards and contexts.

Integrated assessment must evaluate the quality of observable performance as well as the thinking behind the performance. Some assessment aspects will demand practical demonstration while others may not. In some case inference will be necessary to determine competence depending on the nature and context within which performance takes place.

In order to ensure that the learner is able to work within various contexts of the automotive industry, it is necessary to conduct assessments that will provide evidence that learners are able to apply their knowledge and skills in a range of other contexts and for further learning. The assessment should also ensure that all the critical cross-field outcomes have been achieved.

INTERNATIONAL COMPARABILITY

As a starting point, this qualification which is part of a series of qualifications in the field of vehicle technology including, servicing, maintenance, repairs and diagnostics, was compared to other, similar outcomes-based qualifications, certifications or skills standards in English speaking countries of the world.

It was found to be difficult to compare the New Zealand and Australian narrow focus qualifications with this broad-based qualification that also include fundamentals, however the generic core and specialisation areas` unit standards did compare favourably to both the Australian (AUR99) Automotive Industry, Service and Repair unit standards and the NVQ qualification in the United Kingdom.

An example of the exact multi specialisation area approach used in this qualification was found in Australia under Automotive Retail Service Repair Training (www.automotivetraining.org.au).

The range of unit standards used in Australia that relate similarly to core unit standards in this qualification may be found at (www.ntis.gov.au).

It was further difficult to undertake specific comparisons given that the New Zealand and Australian qualifications, although they are in the same field of vehicle technology and cover the same areas of specialisation (thus containing a large degree of similar content) are conceptualised as three year qualifications without exit level outcomes at the intermediate levels.

This notwithstanding, the technical content of this qualification for automotive repair and maintenance (with the various specialisations) corresponds with the equivalent level of qualification in vehicle servicing (with the various specialisations) in Australia, New Zealand and the United Kingdom.

Elements of the Institute of Motor Industry (IMI) in the UK have been used in benchmarking best practice procedures in some of the unit standards used in this qualification. The NVQ qualifications offered in the UK cover all the same objectives of this series of qualifications at various levels of complexity. The qualifications are offered as an internship wherein the learner enrols with a college or training centre for the theoretical component, and achieves the practical component in-house. The qualifications are all based on specific levels of performance, and lead to progressive levels of complexity, but are identified as separate qualifications. The learning towards these qualifications is offered through long-term learner-employer relationships, with short-term stints at a training centre. Qualification titles in the UK include:

- Vehicle Mechanical & Electronic Systems, Maintenance and Repair, NQF Level 3 (Q1015915).
- Vehicle Mechanical & Electronic Systems, Maintenance and Repair, NQF Level 3 (Q1015916).
- Motorcycle Mechanical & Electronic Systems, Maintenance and Repair, NQF Level 3 (Q1015918).
- Vehicle Refinishing, NQF Level 3 (Q1017590).
- Vehicle Body Repair, NQF Level 3 (Q1015917).
- Vehicle Body Fitting, NQF Level 2 (Q1015913).
- Vehicle Mechanical & Electronic Systems, unit Replacement, NQF Level 2 (Q1015914).

The qualifications offered in other European countries, such as Germany, are also predominantly vocational qualifications with theoretical components being achieved through a specified period at a training centre. The qualifications are aimed at achieving complete competence in all aspects of vehicle maintenance through the progressive series of qualifications and includes mechanical, electrical and coach works. The training programmes are progressive qualifications of one year duration each and include ongoing training through workbooks in which the trainee is required to complete evidence of understanding for each month of the registered year of learning. Germany has a requirement that competent people be licensed to operate under the meister (master craftsman) programme, and this licence is valid for a period of two years. The qualification titles offered in Germany include:

- Auto Fachman, NQF Level 1.
- Auto Fachman, NQF Level 2.
- Auto Fachman, NQF Level 3.
- Auto Fachman, Meister.

America uses a system of specialisation areas, with a master technician being identified as a person who is competent in all areas and will be able to perform on almost any part of a vehicle. The learning is conducted through apprenticeships and has specialisation areas for engine technicians, transmission technicians, steering and suspension technicians, brake technicians, electrical system technicians, heating and airconditioning technicians, driveability and performance technicians and lubrication technicians.

None of the SADC countries have their own qualifications relating to vehicle maintenance, but use the British City and Guilds Standards for training learners in the automotive field. Namibia has indicated interest in the South African qualifications and may implement this qualification once it has been registered.

ARTICULATION OPTIONS
This qualification allows for both horizontal and vertical articulation.

Horizontal articulation can occur with this Qualification:

- ID 23274: National Certificate in Mechanical Engineering: Fitting, NQF Level 3.

Vertical articulation can occur with this Qualification:

- ID 58539: FETC Automotive Repair and Maintenance, NQF Level 4.

MODERATION OPTIONS
- Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with an appropriate Education and Training Quality Assurance Body (ETQA) 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 Qualification must be accredited as a provider with the relevant ETQA or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

- Moderation of assessment will be overseen by the relevant ETQA 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 at exit points of the Qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual Unit Standards as well as in the exit level outcomes described in the Qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS
For an applicant to register as an assessor, the applicant needs:

- To be registered as an assessor with the relevant ETQA.
- A similar qualification at one level above the level of the qualification and a minimum of three years experience in the relevant field.

NOTES
This qualification replaces qualification 24456, "National Certificate: Maintaining Vehicles", Level 3, 139 credits.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	9530	Manage work time effectively	Level 3	3
Core	114598	Demonstrate an understanding of an entrepreneurial profile	Level 4	5
Core	12456	Explain and use organisational procedures	Level 3	6
Core	9526	Manage basic business finance	Level 3	6
Core	13234	Apply quality procedures	Level 3	8
Core	116714	Lead a team, plan, allocate and assess their work	Level 3	4
Core	12457	Develop learning strategies and techniques	Level 3	3
Elective	244114	Replace vehicle glass	Level 3	3

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	15109	Recondition vehicle undercarriage components	Level 3	10
Elective	13205	Operate and monitor a lathe to produce simple components	Level 2	12
Elective	12220	Service and repair conventional automobile ignition systems	Level 3	6
Elective	12221	Trace and repair auto-electrical circuits on automobiles	Level 3	20
Elective	15105	Install vehicle sub-components	Level 3	8
Elective	15116	Remove vehicle engines	Level 3	8
Elective	15103	Install vehicle engines	Level 3	8
Elective	116703	Check and maintain air-conditioners in vehicles	Level 3	4
Elective	12218	Construct and test basic electronic circuits	Level 2	16
Elective	12455	Perform the role of a safety, health and environmental protection representative	Level 3	4
Elective	244060	Inspect, assess and report on crankshaft assemblies	Level 3	4
Elective	244054	Demonstrate knowledge of electronic fuel injection and engine management systems	Level 3	10
Elective	244056	Understand the fundamentals of engine technology	Level 3	4
Elective	244049	Repair and assemble automotive components	Level 3	8
Elective	244053	Dismantle automotive main components	Level 3	4
Elective	244052	Install automotive main components	Level 3	6
Elective	244059	Remove automotive main components	Level 3	6
Elective	244109	Perform a basic condition test on an engine	Level 3	8
Elective	12211	Build basic auto electrical circuits	Level 2	16
Elective	244111	Remove and install a dashboard	Level 3	5
Elective	244112	Remove, fit and align the body panels of a vehicle	Level 3	8
Elective	244116	Repair deformed ferrous metal panels	Level 3	11
Elective	117924	Use a Graphical User Interface (GUI)-based word processor to format documents	Level 2	5
Elective	242820	Maintain records for a team	Level 3	4
Elective	244161	Apply 2 coat metallic paint finishes	Level 3	4
Elective	244173	Mix and match paint colours	Level 3	8
Elective	244115	Replace vehicle trim	Level 3	6
Elective	244113	Apply decorative painting techniques	Level 4	4
Elective	244055	Check an engine for condition using hand held test equipment	Level 2	4
Elective	244050	Demonstrate knowledge of petrol fuel injection and engine management systems	Level 3	7
Elective	244044	Demonstrate knowledge of diesel fuel injection and engine management systems	Level 3	7
Elective	244043	Disassemble and clean engines and components	Level 2	5
Elective	244162	Conduct spot repairs	Level 4	4
Elective	244110	Conduct paintless dent removal	Level 3	9
Elective	244057	Test and repair an engine lubrication system	Level 3	4
Elective	244051	Test and repair an engine cooling system	Level 3	4
Elective	244045	Inspect, assess and report on piston and connecting rod assemblies	Level 3	3
Elective	244048	Inspect, assess and report on external components of engines	Level 3	6
Elective	244047	Inspect, assess and report on a cylinder head assembly	Level 3	6
Elective	244042	Inspect, assess and report on a cylinder block assembly	Level 3	6
Elective	11202	Fit and commission air-conditioners to vehicles	Level 3	8
Elective	244058	Diagnose and repair mechanical fuel injection systems	Level 3	6
Elective	15110	Test and report on condition of vehicle charging system	Level 3	4
Elective	15107	Test and report on condition of vehicle starting system	Level 3	4
Elective	116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets	Level 2	4
Elective	15100	Check and adjust steering geometry	Level 3	4
Elective	244046	Demonstrate knowledge of mechanical fuel injection systems	Level 3	5
Fundamental	9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	5
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 3	5
Fundamental	9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 3	4

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5
Fundamental	119466	Interpret a variety of literary texts	Level 3	5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Inspect, assess and report on a cylinder block assembly

SAQA US ID	*UNIT STANDARD TITLE*		
244042	Inspect, assess and report on a cylinder block assembly		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	6

SPECIFIC OUTCOME 1
Inspect cylinder block assemblies.

SPECIFIC OUTCOME 2
Assess cylinder block assemblies.

SPECIFIC OUTCOME 3
Report on cylinder block assemblies.

SPECIFIC OUTCOME 4
Order parts required for cylinder block assemblies.

SCUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Disassemble and clean engines and components

SAQA US ID	*UNIT STANDARD TITLE*		
244043	Disassemble and clean engines and components		
SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level **2**	***(5***

SPECIFIC OUTCOME 1
Prepare to disassemble engines

SPECIFIC OUTCOME 2
Disassemble engines.

SPECIFIC OUTCOME 3
Clean and store engine components

SPECIFIC OUTCOME 4
Maintain cleaning equipment

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of diesel fuel injection and engine management systems

SAQA US ID	*UNIT STANDARD TITLE*		
244044	Demonstrate knowledge of diesel fuel injection and engine management systems		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	7

SPECIFIC OUTCOME 1
Demonstrate knowledge of the principles and operation of a diesel fuel system.

SPECIFIC OUTCOME 2
Demonstrate knowledge of low-pressure diesel fuel system components.

SPECIFIC OUTCOME 3
Demonstrate knowledge of high-pressure diesel fuel injection systems.

SPECIFIC OUTCOME 4
Demonstrate knowledge of and identify the components of electronic diesel control (EDC) systems.

SPECIFIC OUTCOME 5
Demonstrate knowledge of air pollution and vehicle exhaust emissions.

SPECIFIC OUTCOME 6
Demonstrate knowledge of emission control for diesel engines.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Inspect, assess and report on piston and connecting rod assemblies

SAQA US ID	*UNIT STANDARD TITLE*		
244045	Inspect, assess and report on piston and connecting rod assemblies		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	3

SPECIFIC OUTCOME 1
Inspect piston and conrod assemblies.

SPECIFIC OUTCOME 2
Assess piston and conrod assemblies.

SPECIFIC OUTCOME 3
Report on piston and conrod assemblies.

SPECIFIC OUTCOME 4
Order parts required for piston and conrod assemblies.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of mechanical fuel injection systems

SAQA US ID	*UNIT STANDARD TITLE*		
244046	Demonstrate knowledge of mechanical fuel injection systems		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	5

SPECIFIC OUTCOME 1
Demonstrate knowledge of the principles and operation of a mechanical fuel injection system.

SPECIFIC OUTCOME 2
Demonstrate knowledge of low-pressure fuel injection system components.

SPECIFIC OUTCOME 3
Demonstrate knowledge of high-pressure fuel injection systems.

SPECIFIC OUTCOME 4
Demonstrate knowledge of injector pump timing.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Inspect, assess and report on a cylinder head assembly

SAQA US ID	*UNIT STANDARD TITLE*		
244047	Inspect, assess and report on a cylinder head assembly		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	6

SPECIFIC OUTCOME 1
Inspect cylinder head assemblies.

SPECIFIC OUTCOME 2
Assess cylinder head assemblies.

SPECIFIC OUTCOME 3
Report on cylinder head assemblies.

SPECIFIC OUTCOME 4
Order parts required for cylinder head assemblies.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Inspect, assess and report on external components of engines

SAQA US ID	*UNIT STANDARD TITLE*		
244048	Inspect, assess and report on external components of engines		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	6

SPECIFIC OUTCOME 1
Inspect external components.

SPECIFIC OUTCOME 2
Assess external components.

SPECIFIC OUTCOME 3
Report on external components.

SPECIFIC OUTCOME 4
Order parts required for external components.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Repair and assemble automotive components

SAQA US ID	*UNIT STANDARD TITLE*		
244049	Repair and assemble automotive components		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	8

SPECIFIC OUTCOME 1
Plan and prepare work area and component parts for assessment.

SPECIFIC OUTCOME 2
Measure and assess component parts and order replacement parts.

SPECIFIC OUTCOME 3
Repair and assemble components.

SPECIFIC OUTCOME 4
Apply quality checks on assembled components.

SPECIFIC OUTCOME 5
Apply safety procedures during component repair and assembly task.

SPECIFIC OUTCOME 6
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of petrol fuel injection and engine management systems

SAQA US ID	*UNIT STANDARD TITLE*		
244050	Demonstrate knowledge of petrol fuel injection and engine management systems		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	7

SPECIFIC OUTCOME 1
Demonstrate knowledge of petrol fuel injection principles.

SPECIFIC OUTCOME 2
Demonstrate knowledge of throttle body injection (TBI) system.

SPECIFIC OUTCOME 3
Demonstrate knowledge of continuous fuel injection system.

SPECIFIC OUTCOME 4
Demonstrate knowledge of pulsed fuel injection system.

SPECIFIC OUTCOME 5
Demonstrate knowledge of and identify the components of petrol engine management systems.

SPECIFIC OUTCOME 6
Demonstrate knowledge of air pollution and vehicle exhaust emissions.

SPECIFIC OUTCOME 7
Demonstrate knowledge of emission control for spark-ignition engines.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Test and repair an engine cooling system

SAQA US ID	*UNIT STANDARD TITLE*		
244051	Test and repair an engine cooling system		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	4

SPECIFIC OUTCOME 1
Demonstrate knowledge of heat transfer.

SPECIFIC OUTCOME 2
Understand the functions of cooling system components.

SPECIFIC OUTCOME 3
Test the engine cooling system and locate any faults.

SPECIFIC OUTCOME 4
Repair cooling system faults.

SPECIFIC OUTCOME 5
Conduct post repair functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install automotive main components

SAQA US ID	*UNIT STANDARD TITLE*		
244052	Install automotive main components		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	6

SPECIFIC OUTCOME 1
Plan and prepare work area and component installation task.

SPECIFIC OUTCOME 2
Install components.

SPECIFIC OUTCOME 3
Check and test component installation.

SPECIFIC OUTCOME 4
Apply safety procedures during component removal task.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Dismantle automotive main components

SAQA US ID	*UNIT STANDARD TITLE*		
244053	Dismantle automotive main components		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	4

SPECIFIC OUTCOME 1
Plan and prepare work area and component dismantling task.

SPECIFIC OUTCOME 2
Dismantle components.

SPECIFIC OUTCOME 3
Prepare component parts for storage.

SPECIFIC OUTCOME 4
Apply safety procedures during component removal task.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of electronic fuel injection and engine management systems

SAQA US ID	*UNIT STANDARD TITLE*		
244054	Demonstrate knowledge of electronic fuel injection and engine management systems		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	10

SPECIFIC OUTCOME 1
Demonstrate knowledge of fuel injection principles.

SPECIFIC OUTCOME 2
Demonstrate knowledge of throttle body injection (TBI) system.

SPECIFIC OUTCOME 3
Demonstrate knowledge of continuous fuel injection system.

SPECIFIC OUTCOME 4
Demonstrate knowledge of pulsed fuel injection system.

SPECIFIC OUTCOME 5
Demonstrate knowledge of and identify the components of engine management systems.

SPECIFIC OUTCOME 6
Demonstrate knowledge of air pollution and vehicle exhaust emissions.

SPECIFIC OUTCOME 7
Demonstrate knowledge of emission control.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Check an engine for condition using hand held test equipment

SAQA US ID	*UNIT STANDARD TITLE*		
244055	Check an engine for condition using hand held test equipment		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1
Perform a visual inspection of engines and components.

SPECIFIC OUTCOME 2
Carry out a compression test on engines.

SPECIFIC OUTCOME 3
Carry out a cylinder leakage test on engines.

SPECIFIC OUTCOME 4
Carry out a vacuum test on engines.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Understand the fundamentals of engine technology

SAQA US ID	*UNIT STANDARD TITLE*		
244056	Understand the fundamentals of engine technology		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	4

SPECIFIC OUTCOME 1
Identify the various types of automotive engines and engine operation.

SPECIFIC OUTCOME 2
Identify the function of the major parts of a typical automotive engine.

SPECIFIC OUTCOME 3
Explain engine design classifications.

SPECIFIC OUTCOME 4
Explain the various automotive engine systems, their functions and associated components.

SPECIFIC OUTCOME 5
Explain safe working practises related to automotive engines.

SPECIFIC OUTCOME 6
Interact with others in the workplace.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Test and repair an engine lubrication system

SAQA US ID	*UNIT STANDARD TITLE*		
244057	Test and repair an engine lubrication system		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	4

SPECIFIC OUTCOME 1
Demonstrate knowledge of lubrication.

SPECIFIC OUTCOME 2
Understand the functions of lubrication system components.

SPECIFIC OUTCOME 3
Test the engine lubrication system and locate any faults.

SPECIFIC OUTCOME 4
Repair lubrication system faults.

SPECIFIC OUTCOME 5
Conduct post repair functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair mechanical fuel injection systems

SAQA US ID	*UNIT STANDARD TITLE*		
244058	Diagnose and repair mechanical fuel injection systems		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	6

SPECIFIC OUTCOME 1
Read and interpret available information.

SPECIFIC OUTCOME 2
Prepare the vehicle and connect the required test equipment.

SPECIFIC OUTCOME 3
Test, diagnose and repair fuel injection system faults.

SPECIFIC OUTCOME 4
Confirm system repairs.

SPECIFIC OUTCOME 5
Apply safety concepts during diagnosing and repairing of fuel injection systems.

SPECIFIC OUTCOME 6
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remove automotive main components

SAQA US ID	*UNIT STANDARD TITLE*		
244059	Remove automotive main components		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	6

SPECIFIC OUTCOME 1
Plan and prepare work area and component removal task.

SPECIFIC OUTCOME 2
Remove components.

SPECIFIC OUTCOME 3
Conduct post-removal activities.

SPECIFIC OUTCOME 4
Apply safety procedures during component removal task.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Inspect, assess and report on crankshaft assemblies

SAQA US ID	*UNIT STANDARD TITLE*		
244060	Inspect, assess and report on crankshaft assemblies		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	4

SPECIFIC OUTCOME 1
Inspect crankshaft assemblies.

SPECIFIC OUTCOME 2
Assess crankshaft assemblies.

SPECIFIC OUTCOME 3
Report on crankshaft assemblies.

SPECIFIC OUTCOME 4
Order parts required for crankshaft assemblies.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Perform a basic condition test on an engine

SAQA US ID	*UNIT STANDARD TITLE*		
244109	Perform a basic condition test on an engine		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	8

SPECIFIC OUTCOME 1
Perform a visual inspection of engines and components.

SPECIFIC OUTCOME 2
Carry out a compression test on engines.

SPECIFIC OUTCOME 3
Carry out a cylinder leakage test on engines.

SPECIFIC OUTCOME 4
Carry out a vacuum test on engines.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Conduct paintless dent removal

SAQA US ID	*UNIT STANDARD TITLE*		
244110	Conduct paintless dent removal		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	9

SPECIFIC OUTCOME 1
Demonstrate knowledge of paintless dent removal.

SPECIFIC OUTCOME 2
Prepare panels for paintless dent removal.

SPECIFIC OUTCOME 3
Remove dents.

SPECIFIC OUTCOME 4
Apply safety procedures during dent removal.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remove and install a dashboard

SAQA US ID	*UNIT STANDARD TITLE*		
244111	Remove and install a dashboard		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	5

SPECIFIC OUTCOME 1
Demonstrate knowledge of removing and installing a dashboard.

SPECIFIC OUTCOME 2
Determine the extent of work required.

SPECIFIC OUTCOME 3
Remove the dashboard.

SPECIFIC OUTCOME 4
Install the dashboard.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remove, fit and align the body panels of a vehicle

SAQA US ID	*UNIT STANDARD TITLE*		
244112	Remove, fit and align the body panels of a vehicle		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	8

SPECIFIC OUTCOME 1
Demonstrate knowledge of the removal, fitment and aligning process.

SPECIFIC OUTCOME 2
Assess the damage and determine the scope of repair.

SPECIFIC OUTCOME 3
Remove the body panel.

SPECIFIC OUTCOME 4
Install the body panel.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Apply decorative painting techniques

SAQA US ID	*UNIT STANDARD TITLE*		
244113	Apply decorative painting techniques		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Demonstrate knowledge of decorative painting techniques.

SPECIFIC OUTCOME 2
Prepare surfaces for decorative painting techniques.

SPECIFIC OUTCOME 3
Apply and cure decorative coats.

SPECIFIC OUTCOME 4
Apply safety procedures during decorative painting.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Replace vehicle glass

SAQA US ID	*UNIT STANDARD TITLE*		
244114	Replace vehicle glass		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	3

SPECIFIC OUTCOME 1
Demonstrate knowledge of the replacement of vehicle glass.

SPECIFIC OUTCOME 2
Determine the extent of work required.

SPECIFIC OUTCOME 3
Remove vehicle glass.

SPECIFIC OUTCOME 4
Install vehicle glass.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Replace vehicle trim

SAQA US ID	*UNIT STANDARD TITLE*		
244115	Replace vehicle trim		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	6

SPECIFIC OUTCOME 1
Demonstrate knowledge of the replacement of interior and exterior trim and parts.

SPECIFIC OUTCOME 2
Assess the damage and determine the scope of repair.

SPECIFIC OUTCOME 3
Remove trim and parts.

SPECIFIC OUTCOME 4
Install trim and parts.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Repair deformed ferrous metal panels

SAQA US ID	*UNIT STANDARD TITLE*		
244116	Repair deformed ferrous metal panels		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	11

SPECIFIC OUTCOME 1
Demonstrate knowledge of principles pertaining to the repair process.

SPECIFIC OUTCOME 2
Assess the damage and determine the scope of repair.

SPECIFIC OUTCOME 3
Repair the damaged area.

SPECIFIC OUTCOME 4
Perform a quality evaluation of the repaired panel.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Apply 2 coat metallic paint finishes

SAQA US ID	*UNIT STANDARD TITLE*		
244161	Apply 2 coat metallic paint finishes		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	4

SPECIFIC OUTCOME 1
Demonstrate knowledge of the characteristics of finishing coats.

SPECIFIC OUTCOME 2
Demonstrate knowledge of the curing processes of finishing coats.

SPECIFIC OUTCOME 3
Apply and cure the finishing coat.

SPECIFIC OUTCOME 4
Apply safety procedures during application task.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Conduct spot repairs

SAQA US ID	*UNIT STANDARD TITLE*		
244162	Conduct spot repairs		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Demonstrate knowledge of spot repairs.

SPECIFIC OUTCOME 2
Prepare surfaces for spot repairs.

SPECIFIC OUTCOME 3
Apply and cure the finishing coat.

SPECIFIC OUTCOME 4
Apply safety procedures during spot repairing.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Mix and match paint colours

SAQA US ID	*UNIT STANDARD TITLE*		
244173	Mix and match paint colours		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	8

SPECIFIC OUTCOME 1
Demonstrate knowledge of the principles of mixing and matching colours.

SPECIFIC OUTCOME 2
Demonstrate knowledge of the functions of matching and mixing equipment.

SPECIFIC OUTCOME 3
Mix and match colours

SPECIFIC OUTCOME 4
Apply safety procedures during mixing and matching operations.

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.