



Qualification Assessment Specifications Assessment Grid – Addendum 1 to QMS-WP-012

External Integrated Assessment Specifications Document				
SAQA ID	Qualification Title			
234201	CHEMIST – SURFACE COATINGS TECHNOLOGIST			
Date(s) of EIA:	NQF Level	Credits		
	5	178		
Assessment Quality Partner	Name	E-mail	Phone	Logo
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1 ASSESSMENT STRATEGY

1.1 Assessment Model and Distribution

Type of Model:	The external assessment will be conducted through a combination of a written examination, a Practical Skills assignment and the evaluation of the work skills component. The written examination will consist of three sections namely Section A: General Formulating Principles (30%) Section B: Formulating – External and Internal Wood coatings; High Performance coatings; Powder coatings; OEM & Refinish Automotive coatings & Linings for Beverage and Food Containers. (60% and Section C: Formulating and Technical Service Project Management; Managing Interpersonal Skills in the Paint Industry (10)
If written, indicate whether AQP or Assessment Centre will be making copies:	Affirmative
Explain distribution process of EIA (all types of models):	Locked up & couriered
Date of distribution to Assessment Centers/venues:	2 days prior to set date
Briefly explain security precautions followed in all of the above:	Questions selected by appointed assessors/moderators (SME) from databank. Assembled papers generated by Admin Dept., sealed in envelope & locked away in strong room. Papers are couriered to invigilator including register of students and a letter of confidentiality. Envelope opened 15 minutes before assessment starts. At the end of the prescribed time all question papers are collected from the students as they hand in their answer sheets. All documents placed in a sealed envelope and distributed to the marking assessor.

1.2 Qualification Outcomes

EXIT LEVEL OUTCOMES:	Weighting:	Key Assessment Focus Areas:
PRECURSORS TO MODULE 08		
01 Basic Technology - understanding of paint manufacture	5%	Basic understanding of Paint Technology
02 Paint Technology	5%	Basic understanding in paint application
03 Solvents & binders	6%	Understanding of solvents & binders
04 Pigments & Dispersion	7%	Understanding of pigments & pigment dispersion processes
05 Modifiers	4%	Understanding various modifiers (additives) used in coatings
06 Evaluation	3%	Know & understand various test methods of testing paint
07 Convertible Media	7%	Know & understand convertible binders (manufacturing cure chemistry & selection of specific properties)
TOTAL WEIGHTING (PRECURSORS) TOTAL CREDITS - 83	37%	

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FINAL EXIT LEVEL OUTCOMES		
ELO 1 - Formulation Principles, Formulating, Project Management and Managing Interpersonal Relationships in the Paint Industry	10%	<p>Knowledge, understanding and application of formulating principles & the practical application thereof.</p> <p>Key assessment Focus Areas:</p> <ul style="list-style-type: none"> # Planning, researching & developing design parameters for surface coatings. # Optimising formulations for surface coatings products. # Providing technical support on surface coatings to internal & external customers.
ELO 2 - Practical Skills Assignment	18%	<p>Formulate a selected coating from first principles.</p> <p>Key Assessment Focus Areas:</p> <ul style="list-style-type: none"> # Evaluation of application and performance requirements # Explanation of formulating principles # Preparation and testing of samples # Preparation and testing of samples # Evaluation of prepared samples against required specifications (compare 1st formulation with requirements, identify problems, reformulate as necessary and retest # Final Formula – does it meet requirements in terms of performance, application, cost and manufacture) # Critical review of work done (conclusions, suggested further work) # Submission of all prepared samples, test results and test panels # Comprehensive report in accordance with set layout.
ELO 3 - Work Experience	18% higher order and 17% Medium order) 35%	<p>Complete three occupational tasks as follows:</p> <p>Occupational Task 1: Planning, researching and developing design parameters for surface coatings</p> <p>Occupational Task 2: Optimising formulations for surface coating products</p> <p>Occupational Task 3: Providing technical support on surface coatings to internal and external customers</p>

1.3 Distribution of Cognitive application (Bloom’s taxonomy)

Level	Knowledge and Comprehension (Lower order)	Application (Medium order)	Analysis, synthesis and Evaluation: (Higher order)
		47%	35%

1.4 Assessment Requirements:

Title of Occupational Qualification:	CHEMIST – SURFACE COATINGS TECHNOLOGIST 234201
NQF Level:	5
Credits:	Knowledge & Theory = 70 Practical Skills = 48 Work Experience = 60 Total = 178
Duration of Assessment	Computer Marked Formative Assessments (MC) – 30 minutes each over a study period of 14 weeks Practical Skills Assignment – Internal readiness assessment at 14 weeks (120 minutes). On-going assessment up to a maximum of 12 months Work experience assessment: Assessed throughout period of experience and finally by registered assessor Written examination 150 minutes
Total Marks:	200 Marks - CMA 900 Marks – Practical skills Assignment 900 Marks – Written summative assessment 2000 Marks – Total 1400 Marks to Pass
Pass Mark:	Minimum 50% for final written EIA Minimum 70% for Practical Skills Assignment Assessed as competent in work experience component
Format:	3 X Computer marked assessments (MC) Practical Skills Assignment – Assessment of planning and implementation process and evidence of practical work done Work experience: Assessment of work experience log sheets and evidence of work done Written summative assessment – based on learning material
Layout:	Open ended questions with extended constructed response Section A: General Formulating Principles (30%) Section B: Formulating – External and Internal Wood coatings; High Performance coatings; Powder coatings; OEM & Refinish Automotive coatings & Linings for Beverage and Food Containers. (60%) Section C: Formulating and Technical Service Project Management; Managing Interpersonal Skills in the Paint Industry (10%)

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Requirements	<ul style="list-style-type: none"> - Invigilator ratio 1:10 - Attendance registers - Hand held non-programmable calculators allowed
Open Book or Closed Book:	Closed book
Points at which assessment will take place:	<ul style="list-style-type: none"> # Internal (formative) assessments (CMAs) during the 14 weeks of learning period (end of semesters – June or November) # Written (formative) assessment at the end of the 14 weeks learning period ((end of semesters – June or November) # Assessment of Practical skills assignment on submission by learner (not later than 12 months after written formative assessment) # Assessment of work experience work on submission by student (not later than 12 months after written formative assessment) # Final summative assessment on successful completion of Practical Skills Assignment and “competent” assessment in terms of work experience requirements
Supplementary Assessments	Supplementary re-assessment in April or September
% to be moderated:	20%
Number of working days allowed for marking:	10 days after the exam sessions
Number of working days allowed for moderating:	5 days
Number of working days from date of assessment that results & certification request will be submitted to the AQP:	Maximum 3 calendar weeks

1.5 Assessment Grid (PTO)

Key: (4th column: “Format Type”)

- MC - Multiple Choice
- CR - Constructed Response
- ECR - Extended Constructed Response
- TE - Technology Enhanced
- PT - Performance Task

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ASSESSMENT GRID

DATE OF ASSESSMENT:				MAINTAINING WEIGHTING OF ELOs AND CORRECT SCORING OF MARK ALLOCATIONS (as per 1.2)							MAINTAINING DISTRIBUTION OF COGNITIVE APPLICATION (as per 1.3)			
ELO	Section	Evidence Required	Format Type (MC/CR, etc.)	Max Marks	Time (minutes)	Topic (from curriculum)					Cognitive Category			Total Cognitive Marks
						1	2	3	4	5	K&C	A	A,S&E	
ELO 1	Section A	General Formulating Principles: Be able to demonstrate knowledge and understanding of the general formulating principles for successful surface coating formulating.	CR	255	40	Refer section 1.2					255	0	0	255
	Section B	<p># External Woodwork: – able to describe basic formulation requirements of coating for use on external woodwork.</p> <p># High Performance Applications: – able to describe basic formulation requirements of coatings for use in high performance application (including structural metal work, pipe-work & marine situations)</p> <p># Automotive coatings: Original finish – able to describe basic formulation requirements of coatings intended for initial use on automotive vehicle bodies.</p> <p># Automotive Coatings: Refinishing Topcoats – able to describe basic formulation requirements of coatings intended for the refinishing of automobile vehicle bodies.</p> <p># Powder Coatings: for general industrial applications – able to describe basic formulation requirements for use in powder coatings for general industrial applications.</p> <p># Linings for Beverage & food Containers: – able to describe basic formulation requirements for use in linings for beverage & food containers.</p>	CR	515	90	Refer section 1.2					515	0	0	515
SUB-TOTALS:				900	150						900	0	0	900

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DATE OF ASSESSMENT:				MAINTAINING WEIGHTING OF ELOs AND CORRECT SCORING OF MARK ALLOCATIONS (as per 1.2)						MAINTAINING DISTRIBUTION OF COGNITIVE APPLICATION (as per 1.3)				
ELO 1	Section	Evidence Required	Format Type (MC/CR, etc.)	Max Marks	Time (Hours)	Topic (from curriculum)					Cognitive Category			Total Cognitive Marks
						1	2	3	4	5	K&C	A	A,S&E	
	Section C	# Project Management: Be able to describe and explain basic principles & techniques of project management as they apply to formulating projects # Be able to describe and explain the basic principles of managing interpersonal relationships in the paint industry	CR	130	20	Refer section 1.2					130	0	0	130
ELO 2	Section D	Practical Skills Assignment: Demonstration of the learner's ability to apply the theory by formulating, preparing and evaluating a coating produced from first principles; to prepare a comprehensive report in accordance with the prescribed format.	PT	900	160 hours	Refer section 1.2					300	300	300	900
SUB-TOTALS:				900	160						300	300	300	900
ELO 3	Section E	Work Experience: Demonstration and evidence that the learner has completed the prescribed work and was found competent by his or her supervisor. All work completed and recorded in the log book shall be signed off by the supervisor.	PT	C/NYC	600 hours	Refer section 1.2					n/a	n/a	n/a	n/a
SUB-TOTALS:				C/NYC	600						0	0	0	0
GRAND TOTALS:				1800	910						300	300	300	900