

Field Engineering and Technology**Review of *Mechanical Engineering* unit standards**

Subfield	Domain	ID
Mechanical Engineering	Maintenance and Diagnostics in Mechanical Engineering	2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2406, 2407, 2408, 2409, 2410, 2411, 19873, 19874, 22901, 22902, 22903, 22904, 22905

Competenz has completed the review of the standards listed above.

Date new versions published

April 2011

Planned review date

December 2016

Summary

Competenz has completed a review of the standards above in consultation with assessors and moderators of the standards and training providers.

The review was to ensure the standards continued to meet industry requirements, and to ensure they were clear, logical and fit for purpose.

The review found that the majority of the standards from the *Maintenance and Diagnostics in Mechanical Engineering* domain were fit for purpose with the exception of two “under supervision” standards which have been designated as expiring and will not be replaced, and two standards which have been separated into knowledge and practical work standards. Updates and improvements have been made to the remaining standards to clarify interpretation. This included simplification and contextualisation. Changes made to the standards now better reflect the way that the standards are used in industry.

Main changes

- Standards 2398 and 2399 were designated as expiring as standards 2406 and 2407 assess essentially the same competencies.
- Credits for 2406 have been increased to 15 to better reflect the time taken to learn and be assessed.
- Credits for 2407 have been increased to 10 to better reflect the time taken to learn and be assessed.
- Changes have been made to the entry information and ranges of standard 2401 to improve accessibility.
- Standard 2402 has been replaced with standards 27203 and 27204, separating the knowledge and practical components of lubrication.
- The titles of standards 2403 and 2404 have been simplified.
- Standard 2410 has been replaced with standards 24705 and 24706, separating the knowledge and practical components of non-destructive testing.
- References have been checked and updated where required.
- The explanatory notes for each standard were standardised for consistency.

- Outcomes and evidence requirements in many of the standards have been amended or added to, to improve assessment and better reflect the current practices and industry requirements.

Category C and D unit standards will expire at the end of December 2016.

Impact on existing organisations with consent to assess

Current consent for			Consent extended to		
Nature of consent	Classification or ID	Level	Nature of consent	ID	Level
Subfield	Mechanical Engineering	3	Standards	2406, 2407	4
Domain	Maintenance and Diagnostics in Mechanical Engineering	3			
Standard	2399	3	Standard	2406	4

Impact on registered qualifications

Key to type of impact	
Affected	The qualification lists a reviewed classification (domain or subfield) in an elective set The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard
Not materially affected	The qualification lists a standard that has a new title The qualification lists a standard that has a new classification

The following Competenz qualifications are impacted by the outcome of this review. Ref: 0259 is scheduled in the Qualifications Review Schedule for 2014, and is dependent on work by Maritime New Zealand. The remaining qualifications are scheduled by Competenz for review in 2011/2012 and will be updated then. The classifications and/or standards that generated the status *Affected* are listed in **bold**.

Ref	Qualification Title	Classification or ID
0129	National Certificate in Metal Casting (Technology)	2410
0130	National Certificate in Refrigeration and Air Conditioning (Level 4)	2399
0259	National Certificate in Maritime (Merchant Navy Deck and Engine Room Watch Rating)	2398
1262	National Certificate in Mechanical Engineering (Level 4) with strands in Fitting and Machining, General Engineering, Machining, Maintenance Engineering, Toolmaking, and Electricity Supply	2402, 2403, 2406, 2407

The following table identifies qualifications developed by other SSBs that are impacted by the outcome of this review. The SSBs have been advised that the qualifications require revision. The classifications and/or standards that generated the status *Affected* are listed in **bold**.

Ref	Qualification Title	Classification or ID	SSB Name
1295	National Certificate in Electricity Supply (Electrical) (Level 4) with strands in Electricity Supply Electrician, Electrical	2406	Electricity Supply Industry Training Organisation

Ref	Qualification Title	Classification or ID	SSB Name
	Fitter, and Electrical Technician		
0877	National Certificate in Boatbuilding (Level 4) with strands in Marine Cabinetmaking, Composite Sparmaking, Alloy Boatbuilding, Marine Rigging, Interior and Exterior Marine Painting, Composite Boatbuilding, Steel Boatbuilding, Wooden Boatbuilding, Marine Systems Engineering, Metal Sparmaking, Composite Production Trailer Boats, and Alloy Production Trailer Boats	2399, 2406	NZ Marine Industry Training Organisation
0395	National Certificate in Plastics Processing Technology (Technical) (Level 3) with strands in Injection Moulding, Extrusion, Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding	2398	Plastics and Materials Processing Industry Training Organisation Incorporated
1234	National Certificate in Pharmaceutical and Allied Products Manufacturing (Level 2)	2399	
1235	National Certificate in Engineering and Technology (Pharmaceutical and Allied Products) (Level 2)	2398	
1363	National Certificate in Plastics Processing Technology (Production) (Level 3) with strands in General, and Expanded Polystyrene Moulding	2398	
1407	National Certificate in Engineering and Technology (Plastics Engineering) (Level 4) with strands in Injection Moulding, Extrusion, Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding, and Rotational Moulding	2398, 2399, 2402, 2403, 2404, 2406, 2407	

Transition

Competenz qualifications will include exemptions as outlined in the table below.

Credit for	Exempt from
2402	27203, 27204
2410	27205, 27206

Detailed list of unit standards – classification, title, level, and credits

All changes are in **bold**. Details of recommended alternative unit standards are in *italics*.

Key to review category	
A	Dates changed, but no other changes are made - the new version of the standard carries the same ID and a new version number
B	Changes made, but the overall outcome remains the same - the new version of the standard carries the same ID and a new version number
C	Major changes that necessitate the registration of a replacement standard with a new ID
D	Standard will expire and not be replaced

Engineering and Technology > Mechanical Engineering > Maintenance and Diagnostics in Mechanical Engineering

ID	Title	Level	Credit	Review Category
2397	Service machines and equipment	2	4	B
2398	Monitor, under supervision, the condition of machinery and equipment	3	4	D
<i>2407</i>	<i>Monitor the condition of machinery and equipment</i>	<i>4</i>	<i>10</i>	
2399	Dismantle, inspect, assemble and test components under supervision	3	10	D
<i>2406</i>	<i>Dismantle, inspect, assemble and test components</i>	<i>4</i>	<i>15</i>	
2400	Describe the principles of static and dynamic balancing, and carry out static balancing	3	4	B
2401	Safely shut down and isolate machines and equipment	3	3	B
2402	Demonstrate knowledge of lubricants and lubrication systems, and inspect lubrication systems	3	5	C
27203	Demonstrate knowledge of lubrication for mechanical engineering trades	3	2	
27204	Inspect lubrication systems	3	3	
2403	Select and replace static seals in machines and equipment Replace static seals in machines and equipment	3	5	B
2404	Select and replace dynamic seals in machines and equipment Replace dynamic seals in machines and equipment	3	8	B
2406	Dismantle, inspect, assemble and test components	4	6 15	B
2407	Monitor the condition of machinery and equipment	4	4 10	B
2408	Align machinery and equipment	4	8	B
2409	Level machinery and equipment	3	4	B
2410	Describe and use non destructive testing (NDT) technology	4	8	C
27205	Describe non-destructive testing (NDT) technology in mechanical engineering	4	3	
27206	Use non-destructive testing (NDT) technology in mechanical engineering	4	5	

ID	Title	Level	Credit	Review Category
2411	Test fluids used in machinery and equipment for variation from specification	4	3	B
19873	Demonstrate knowledge of bearings used in machines and equipment	3	8	B
19874	Service and replace bearings in machines and equipment	4	12	B
22901	Demonstrate knowledge of pumps, fans, and valves used in engineering Demonstrate knowledge of pumps, fans, and valves for mechanical engineering trades	3	3	B
22902	Demonstrate knowledge of process control in mechanical engineering	4	3	B
22903	Demonstrate knowledge of modern manufacturing concepts and their significance in plant maintenance	4	3	B
22904	Demonstrate knowledge of modern engineering plant maintenance practice	4	5	B
22905	Perform planned maintenance work on mechanical equipment	4	5	B