National Certificate in Plastics Processing Technology (Technical) (Level 4) with strands in Injection Moulding, Extrusion, Extrusion Blow Moulding, Thermoforming, Blown Film Extrusion, Injection Stretch-Blow Moulding Single Stage, Injection Stretch-Blow Moulding Two Stage, and Rotational Moulding

Level **4**

Credits **55**

This qualification has been **reviewed**. The last date to meet the requirements is 31 December 2019.

Transition Arrangements

This qualification has been reviewed and replaced by the New Zealand Certificate in Plastics Engineering (Level 4) [Ref: 2975].

The last date for entry into programmes leading to the replaced qualification is 31 December 2017. The last date for assessment against the replaced qualification is 31 December 2019.

Candidates currently working towards this qualification may either complete its requirements by the date specified or transfer to the replacement qualification.

It is anticipated that no existing candidates will be disadvantaged by these transition arrangements. However, anyone who feels that they have been disadvantaged may appeal to Competenz at the address below. Appeals will be considered on a case by case basis.

For detailed information see Review Summaries on the NZQA website.

NZQF National Qualification Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	February 1998	December 2004
Revision	2	February 1999	December 2004
Revision	3	May 1999	December 2004
Review	4	October 2002	December 2008
Revision	5	August 2004	December 2009
Review	6	August 2008	December 2012
Review	7	September 2010	December 2015
Revision	8	June 2013	December 2019
Review	9	October 2015	December 2019

Standard Setting Body

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National Certificate in Plastics Processing Technology (Technical) (Level 4) with strands in Injection Moulding, Extrusion, Extrusion Blow Moulding, Thermoforming, Blown Film Extrusion, Injection Stretch-Blow Moulding Single Stage, Injection Stretch-Blow Moulding Two Stage, and Rotational Moulding

Level **4**

Credits **55**

Purpose

The National Certificate in Plastics Processing Technology (Technical) (Level 4) with strands [Ref: 0396] is designed to recognise the skills and knowledge of people who have become processing specialists in a specific sector of the plastics industry.

The qualification comprises compulsory standards selected. The strands cover the knowledge and skills involved in advanced production processes and maintenance requirements for a specified sector of the plastics industry. The balance of credits comes from the elective section, which is designed to allow recognition of skills at the specific worksite.

The qualification comprises compulsory standards – selected to recognise supervisory skills, advanced knowledge of plastics materials, and skills in trialling for production quality selected to build sound basic engineering and plastics materials knowledge and capabilities – and strands, which cover the knowledge and skills involved in advanced production processes and maintenance requirements for a specified sector of the plastics industry.

In addition to gaining credit for the compulsory standards and a strand, candidates will also choose a balance of credits, to meet the minimum of 55 credits, from an elective section that is designed to allow recognition of skills relevant to candidates' specific worksites. The elective section allows candidates to choose from a range of standards in areas such as quality management, people development and coordination, and occupational health and safety practice among others.

This qualification builds on the skills gained through the National Certificate in Plastics Processing Technology (Technical) (Level 3) with strands in Injection Moulding, Extrusion, Extrusion Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding, Rotational Moulding and Expanded Polystyrene Moulding [Ref: 0395].

Certificate holders are encouraged to undertake further training. This could be by expanding on this qualification by undertaking a further strand, or by undertaking further training for one or more of the strands in the 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 [Ref: 1407].

Special Notes

While it is not a prerequisite, it is recommended that people undertaking this qualification should complete the corresponding strand in the National Certificate in Plastics Processing Technology (Technical) (Level 3) with strands in Injection Moulding, Extrusion, Extrusion Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding, Rotational Moulding, and Expanded Polystyrene Moulding [Ref: 0395].

People may apply for recognition of prior learning (RPL) or recognition of current competence (RCC) through an organisation with consent to assess or in writing to Competenz.

Credit Range

	Core Compulsory	**Injection Moulding Strand**	
		Compulsory	**Elective**
Level 1 credits	-	-	0-14
Level 2 credits	-	-	0-14
Level 3 credits	-	-	0-14
Level 4 or above credits	30	11	0-14
Minimum totals	30	11	14

	Extrusion Strand		**Extrusion Blow Moulding Strand**	
	Compulsory	**Elective**	**Compulsory**	**Elective**
Level 1 credits	-	0-15	-	0-15
Level 2 credits	-	0-15	-	0-15
Level 3 credits	-	0-15	-	0-15
Level 4 or above credits	7	3-18	8	2-17
Minimum totals	7	18	8	17

	Thermoforming Strand		**Blown Film Extrusion Strand**	
	Compulsory	**Elective**	**Compulsory**	**Elective**
Level 1 credits	-	0-7	-	0-12
Level 2 credits	-	0-7	-	0-12
Level 3 credits	8	0-7	-	0-12
Level 4 or above credits	-	10-17	10	3-15
Minimum totals	8	17	10	15

	Injection Stretch-Blow Moulding Single Stage Strand		**Injection Stretch-Blow Moulding Two Stage Strand**	
	Compulsory	**Elective**	**Compulsory**	**Elective**
Level 1 credits	-	0-13	-	0-9
Level 2 credits	-	0-13	-	0-9
Level 3 credits	-	0-13	-	0-9
Level 4 or above credits	12	0-13	16	0-9
Minimum totals	12	13	16	9

	Rotational Moulding Strand	
	Compulsory	**Elective**
Level 1 credits	-	0-15
Level 2 credits	-	0-15
Level 3 credits	-	0-15
Level 4 or above credits	6	4-19
Minimum totals	6	19

Requirements for Award of Qualification

Award of NZQF National Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided on the New Zealand Qualifications Authority (NZQA) website: http://www.nzqa.govt.nz/qualifications-standards/standards/standards-exclusion-list/.

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (ID). Any version of a standard with the same ID may be used to meet qualification requirements that list the ID and/or that specify the past or current classification of the standard.

Summary of Requirements

- A minimum of 55 credits
  - Of which a minimum of 40 credits at Level 4 or above
- Core Compulsory standards
- Elective – Balance

One of the following strands is required
- Injection Moulding Strand
- Extrusion Strand
- Extrusion Blow Moulding Strand
- Thermoforming Strand
- Blown Film Extrusion Strand
- Injection Stretch-Blow Moulding Single Stage Strand
- Injection Stretch-Blow Moulding Two Stage Strand
- Rotational Moulding Strand

Detailed Requirements

Core Compulsory
The following standards are required

Business > Business Operations and Development > People Development and Coordination

ID	Title	Level	Credit
15190	Develop and implement a work team plan	4	5

Humanities > Communication Skills > Interpersonal Communications

ID	Title	Level	Credit
21335	Lead a group/team to achieve an objective(s)	4	5

Manufacturing > Plastics Processing Technology > Plastics Materials

ID	Title	Level	Credit
9708	Explain the influence of polymer morphology on properties and processing	4	7
9709	Explain additive mixing, compounding, and plasticisation	4	7

Manufacturing > Plastics Processing Technology > Plastics Processing - General

ID	Title	Level	Credit
9711	Review and analyse production trial and specify re-trial	4	6

Elective
The balance of credits to achieve a minimum of 55 credits (of which a minimum of 40 credits must be at Level 4 or above) may come from the following:

Field	Subfield	Domain
Business	Business Operations and Development	People Development and Coordination
		Quality Management
		Systems and Resources Management
Engineering and Technology	Mechanical Engineering	Engineering - Measurement
		Maintenance and Diagnostics in Mechanical Engineering
		Mechanical Assembly
Health	Occupational Health and Safety	Occupational Health and Safety Practice
Humanities	Communication Skills	Interpersonal Communications
Manufacturing	Any	Any

Injection Moulding Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Injection Moulding

ID	Title	Level	Credit
9712	Trial advanced injection moulds	4	6
9713	Set up and remove complex injection moulds	4	5

Extrusion Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Extrusion

ID	Title	Level	Credit
9715	Prepare extrusion dies and calibrators for production and demonstrate knowledge of their design principles	4	7

Extrusion Blow Moulding Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Extrusion Blow Moulding

ID	Title	Level	Credit
9714	Trial and evaluate an advanced or complex extrusion blow mould or moulding process	4	8

Thermoforming Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Thermoforming

ID	Title	Level	Credit
270	Service complex tooling for thermoforming	3	8

Blown Film Extrusion Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Blown Film Extrusion

ID	Title	Level	Credit
9710	Demonstrate knowledge of the application of advanced processing technology	4	10

Injection Stretch-Blow Moulding Single Stage Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Injection Stretch-Blow Moulding

ID	Title	Level	Credit
15209	Trial and optimise the single stage injection stretch-blow moulding production process	4	12

Injection Stretch-Blow Moulding Two Stage Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Injection Stretch-Blow Moulding

ID	Title	Level	Credit
15210	Trial and optimise the two stage injection stretch-blow moulding production process	4	16

Rotational Moulding Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Rotational Moulding

ID	Title	Level	Credit
16121	Trial a complex rotationally moulded product	4	6

Transition Arrangements

Version 8

Version 8 of this qualification was issued following revision. It was revised to ensure it remains achievable until review.

This qualification is due for mandatory review in 2014 as a result of the Targeted Review of Qualifications. However, the qualification included a standard that was expiring so a revision was needed.

Changes to structure and content

- The strand name Blow Moulding was changed to Extrusion Blow Moulding to reflect the change in domain name.
- Standards in the Extrusion Blow Moulding strand were updated to reflect their reclassification.
- Expiring standard 18336 was replaced with standard 15190 in the core compulsory section.

For detailed information see Review Summaries on the NZQA website.

Transition

People currently working towards version 7 of this qualification may either complete that version or transfer their results to version 8.

For those who have partially completed version 7 and wish to transfer to version 8, the following exemptions apply.

Version 8 of this qualification contains standards that replace earlier standards. For the purposes of this version of the qualification, people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement standards – see table below.

Credit for	Exempt from
9676	21335
18336	15190

For candidates who do choose to complete Version 7 of this qualification, the following reverse transition has been included to allow existing candidates to complete the qualification by using the replacement standard as credit for the expiring standard – see table below.

Credit for	Exempt from
15190	18336

It is anticipated that no existing candidates will be disadvantaged by these transition arrangements. However, anyone who feels that they have been disadvantaged may appeal to Competenz (Competenz) at the address below. Appeals will be considered on a case by case basis.

Previous versions of the qualification

Version 7 was issued following review. Qualification and strand prerequisites were removed and an Elective section was added. Overall credit requirement was reduced from 68-74 to 55 credits. Overall credit requirement for the Core Compulsory section was reduced from 62 to 30 credits. Standards 1297, 1299, 1312, 1988, 8082 and 8089 were removed from the Core Compulsory section, but can still be used to meet the requirements of the new Elective section.

Version 6 was issued following review. Classifications, titles, and credits of reviewed standards updated. Standard 1296, 1983 and 9676 replaced by 1297, 1988 and 21335 respectively in the Core Compulsory. Range of credit totals adjusted from 51-69 to 68-74. Standards 9708, 9709, and 9711 were moved from strands to Core Compulsory. Standard 270 was added to the Thermoforming strand. The descriptor *Technical* was added to the title.

Version 5 was issued to delete the Core Elective requirement for 15 credits from science and mathematics domains and to adjust the total credits accordingly.

Version 4 was issued following review. Changes to structure and content included: standard 1984 replaced by standard 18336 in the Core Compulsory section; standard 2780 removed from the Core Compulsory section; standards 1296 and 1299 added to the Core Compulsory section; and the Core Elective section modified.

Version 3 was issued to change the name of the Pressure Thermoforming Strand to Thermoforming Strand.

Version 2 was issued to provide for the addition of strands in Injection Stretch-Blow Moulding Single Stage, Injection Stretch-Blow Moulding Two Stage, and Rotational Moulding.

Other standard setting bodies whose standards are included in the qualification

NZQA

Certification

This certificate will display the logos of NZQA, Competenz and the organisation that has been granted consent to assess against standards that meet the requirements of the qualification (accredited).

Classification

This qualification is classified according to the classification system listed on the Directory of Assessment Standards (DAS) and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

DAS Classification		**NZSCED**	
Code	**Description**	**Code**	**Description**
190	Manufacturing > Plastics Processing Technology	030108	Engineering and Related Technologies > Manufacturing, Engineering and Technology > Plastics Processing Technology

Quality Management Systems
Providers and Industry Training Organisations must be granted consent to assess by a recognised Quality Assurance Body before they can register credits from assessment against standards. Organisation with consent to assess and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Consent to assess requirements and the moderation system are outlined in the associated Consent and Moderation Requirements (CMR) for each standard.