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

Level **3**

Credits **71**

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 Processing (Level 3) with an optional strand in Plastics Engineering [Ref: 2974].

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
Review	2	February 1999	December 2004
Revision	3	July 1999	December 2004
Revision	4	April 2000	December 2004
Review	5	October 2002	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 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

Level **3**

Credits **71**

Purpose

The National Certificate in Plastics Processing Technology (Technical) (Level 3) with strands [Ref: 0395] is designed for people who are intermediate level processing specialists in a specified sector of the plastics industry. Holders of this certificate are able to undertake a range of activities related to processing, equipment, and tooling under limited supervision. Holders have developed mechanical engineering skills and knowledge, and have been introduced to key quality assurance concepts.

The qualification comprises compulsory standards – selected to recognise engineering quality assurance and plastics materials knowledge – and strands, which cover the skills and knowledge involved in production 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 71 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 mechanical assembly, occupational health and safety practice, and systems and resources management among others.

This qualification builds on the skills gained through the National Certificate in Plastics Processing Technology (Technical) (Level 2) with strands in Injection Moulding, Extrusion, Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding, Rotational Moulding, Film Slitting, and Expanded Polystyrene Moulding [Ref: 0394].

Certificate holders are encouraged to undertake further training towards the 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 [Ref: 0396], or 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 2) with strands in Injection Moulding, Extrusion, Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding, Rotational Moulding, Film Slitting, and Expanded Polystyrene Moulding [Ref: 0394].

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	-	-	0-13
Level 2 credits	8	-	0-13
Level 3 or above credits	21	29	0-13
Minimum totals	29	29	13

	Extrusion Strand		**Extrusion Blow Moulding Strand**	
	Compulsory	**Elective**	**Compulsory**	**Elective**
Level 1 credits	-	0-27	-	0-16
Level 2 credits	-	0-27	-	0-16
Level 3 or above credits	14	1-28	26	0-16
Minimum totals	14	28	26	16

	Pressure Thermoforming Strand		**Vacuum Thermoforming Strand**	
	Compulsory	**Elective**	**Compulsory**	**Elective**
Level 1 credits	-	0-25	-	0-25
Level 2 credits	-	0-25	-	0-25
Level 3 or above credits	17	0-25	17	0-25
Minimum totals	17	25	17	25

	Blown Film Extrusion Strand		**Film Conversion Strand**	
	Compulsory	**Elective**	**Compulsory**	**Elective**
Level 1 credits	-	0-10	-	0-27
Level 2 credits	8	0-10	-	0-27
Level 3 or above credits	24	0-10	14	1-28
Minimum totals	32	10	14	28

	Injection Stretch-Blow Moulding Strand		Rotational Moulding Strand	
	Compulsory	**Elective**	**Compulsory**	**Elective**
Level 1 credits	-	0-20	-	0-27
Level 2 credits	-	0-20	-	0-27
Level 3 or above credits	22	0-20	12	3-30
Minimum totals	22	20	12	30

	Expanded Polystyrene Moulding Strand	
	Compulsory	**Elective**
Level 1 credits	-	0-27
Level 2 credits	-	0-27
Level 3 or above credits	12	3-30
Minimum totals	12	30

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 71 credits
  - Of which a minimum of 40 credits at Level 3 or above
- Core Compulsory standards
- Elective – Balance

One of the following strands is required
- Injection Moulding Strand
- Extrusion Strand
- Extrusion Blow Moulding Strand
- Pressure Thermoforming Strand
- Vacuum Thermoforming Strand
- Blown Film Extrusion Strand
- Film Conversion Strand
- Injection Stretch-Blow Moulding Strand
- Rotational Moulding Strand
- Expanded Polystyrene Moulding Strand

Detailed Requirements

Core Compulsory
The following standards are required

Business > Business Operations and Development > Quality Management

ID	Title	Level	Credit
8085	Demonstrate knowledge of quality and its management	3	4

Engineering and Technology > Mechanical Engineering > Mechanical Assembly

ID	Title	Level	Credit
22913	Assemble and fit precision tooling	3	10

Manufacturing > Plastics Processing Technology > Plastics Materials

ID	Title	Level	Credit
23130	Classify and name plastics materials	2	8
23131	Compare melt flow and dimensional stability of plastics materials	3	7

Elective
The balance of credits to achieve a minimum of 71 credits (of which a minimum of 40 credits must be at Level 3 or above) may come from the following:

Field	Subfield	Domain
Business	Business Operations and Development	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
		Writing
Manufacturing	Any	Any

Injection Moulding Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Injection Moulding

ID	Title	Level	Credit
255	Control and optimise the injection moulding production process	3	12
260	Service and maintain a complex mould for injection moulding	3	10
27926	Set up advanced moulds for injection moulding	3	7

Extrusion Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Extrusion

ID	Title	Level	Credit
286	Demonstrate knowledge of advanced extrusion tooling and change extruder screws	3	6
27631	Optimise the extrusion process and operate an extrusion process for complex products	3	8

Extrusion Blow Moulding Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Extrusion Blow Moulding

ID	Title	Level	Credit
298	Control and trial the extrusion blow moulding process for a simple extrusion blow mould	3	8
301	Service a die head for extrusion blow moulding	3	12
303	Set up and start up an extrusion blow moulding machine to run advanced or complex moulds	3	6

Pressure Thermoforming Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Thermoforming

ID	Title	Level	Credit
266	Control the production process for pressure thermoforming	3	8
268	Set up complex tooling for thermoforming	3	9

Vacuum Thermoforming Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Thermoforming

ID	Title	Level	Credit
265	Control the production process for vacuum thermoforming	3	8

ID	Title	Level	Credit
268	Set up complex tooling for thermoforming	3	9

Blown Film Extrusion Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Blown Film Extrusion

ID	Title	Level	Credit
291	Operate a blown film extrusion machine for co-extrusion production	2	8
292	Set up, monitor, and adjust co-extrusion production for blown film extrusion	3	10
294	Coordinate and lead a co-extrusion die service for blown film extrusion	4	9
27666	Optimise complex mono-layer production processes for blown film extrusion	3	5

Film Conversion Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Film Conversion

ID	Title	Level	Credit
278	Set up and control operations for advanced products for film conversion	3	14

Injection Stretch-Blow Moulding Strand
The following standards are required

Manufacturing > Plastics Processing Technology > Injection Stretch-Blow Moulding

ID	Title	Level	Credit
15212	Demonstrate knowledge and carry out routine maintenance of preform injection moulds	4	16
15213	Set up tooling for injection stretch-blow moulding	3	6

Rotational Moulding Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Rotational Moulding

ID	Title	Level	Credit
16118	Control and optimise the rotational moulding production process for a standard product	3	12

Expanded Polystyrene Moulding Strand
The following standard is required

Manufacturing > Plastics Processing Technology > Expanded Polystyrene Moulding

ID	Title	Level	Credit
17464	Control and optimise the expanded polystyrene moulding production process	3	12

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 standards that were expiring and so a revision was needed.

Changes to structure and content

- The total credits of the qualification decreased to 71.
- 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 257 was replaced with new standard 27926 in the Injection Moulding strand.
- Expiring standard 284 was replaced with new standard 27631 in the Extrusion strand.
- Expiring standard 290 was replaced with new standard 27666 in the Blown Film Extrusion strand.
- Expiring standard 2398 was removed from the Core Compulsory section with no direct replacement.

For detailed information see Review Summaries on the NZQA website.

Transition

People currently working towards version 7 of this qualification who achieve credit for expiring standard 2398 before its expiry date may either complete that version or transfer their results to version 8.

People currently working towards version 7 of this qualification who do not achieve credit for expiring standard 2398 before its expiry date are advised to discuss their training plan with the ITO to decide whether they should 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
257	27926
273	23130
274	23131
284	27631
290	27666
2388	22913

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 standards as credit for the expiring and expired standards – see table below.

Credit for	Exempt from
27926	257
27631	284
27666	290

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.

Previous versions of the qualification

Version 7 was issued following review. Qualification and strand prerequisites were removed, an Expanded Polystyrene Moulding strand was added and the qualification title was amended. An Elective section was added. The overall credit requirement changed from 71-100 to 75 credits. The credit requirement of the Core Compulsory section was reduced from 59 to 33 credits. Standard 23130 was added to the Core Compulsory section. Standard 2780 was removed from the Core Compulsory section. Standards 3488, 4438, 8077, 8081, and 8087 were removed from the Core Compulsory section, but can still be used to meet the requirements of the new Elective section. Standard 2403 was removed from the strands, but can still be used to meet the requirements of the new Elective section.

Version 6 was issued following review. Changes to structure and content include: standards 750 and 15862 removed from the Core Compulsory; standards 274 and 2388 replaced by 23131 and 22913 respectively, and were moved to the Core Compulsory; classifications, titles, levels and credits of reviewed standards updated; range of credit totals adjusted from 66-103 to 71-100; the descriptor *Technical* was added to the title;

standard 270 has been removed from the Pressure Thermoforming and Vacuum Thermoforming Strands and transferred to the Level 4 qualification.

Version 5 was issued to remove standards 1296 and 1299, and to add standards 3488 and 2780 in the Core Compulsory, and to remove the Core Elective.

Version 4 was issued in order to include the domains Core Driving Knowledge and Skills and Driver Licence Endorsements in the Core Elective to incorporate changes to driving regulations in relation to fork lift operations.

Version 3 was to take into account the review of Electrical Engineering standards and to include the subfields of Lifting Equipment and Storekeeping and Warehousing in the Core Elective section. Standard 750 was updated; standard 2026 was replaced by standard 15862, and the credit total for was amended.

Version 2 was issued to include strands in Injection Stretch-Blow Moulding and Rotational Moulding. Standard 1556 was removed from the qualification.

Other standard setting bodies whose standards are included in the qualification

Competenz
NZQA

Certification

This certificate will display the logos of NZQA, Competenz Incorporated 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**

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.