

Title	Process and use plastics materials		
Level	2	Credits	6

Purpose	People credited with this unit standard are able to: demonstrate knowledge of plastics materials processing methods, applications, and waste reduction, recovery and disposal; and maintain plastics materials processing conditions.
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Classification	Plastics Processing Technology > Plastics Materials
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Available grade	Achieved
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Recommended skills and knowledge	Unit 23128, <i>Demonstrate basic knowledge of plastics production processes and materials.</i>
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Explanatory notes

- 1 Legislation relevant to this unit standard includes but is not limited to the Health and Safety at Work Act 2015.
- 2 Definitions
Workplace procedures – procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – standard operating procedures, site safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of plastics materials processing methods, applications, and waste reduction, recovery, and disposal.

Evidence requirements

- 1.1 The principles of common production methods for plastic products are described. The most common types of plastic products, and an example produced by each production method, are identified.
- Range common production methods – injection moulding, thermoforming, extrusion blow moulding, injection stretch-blow moulding, rotational moulding, extrusion, extrusion wire coating, film extrusion, film conversion, expanded polystyrene moulding, fabrication;
types of plastic products – solid shapes, foamed solid shapes, enclosed hollow shapes, continuous shapes, film;
evidence is required for five common production methods.
- 1.2 Examples of plastic products used in sectors of commerce are identified and the plastics material used for each example is named using its generic polymeric name.
- Range sectors of commerce – packaging, transport, construction and building, home and consumer;
plastics materials examples are – low density polyethylene, high density polyethylene, polypropylene, polyvinyl chloride, general purpose polystyrene, high impact polystyrene, acrylonitrile butadiene styrene, polyethylene terephthalate, polycarbonate, polyamide;
evidence is required for one example for each sector of commerce each using different plastics materials.
- 1.3 The purpose of waste reduction in plastics processing is described. Examples of waste in plastics processing are identified, and an example of how waste reduction can be achieved for each is described.
- Range purpose includes – costs, environmental effects;
examples of waste are – raw materials, additives, product packaging, production rejects, purged materials, water, energy for heating, energy for cooling, energy for compressed air, leaking equipment;
evidence is required for five examples of waste.
- 1.4 The purpose of recovering resources resulting from plastics processing is described and a method for the recovery of resources from plastics processing is outlined.
- Range purpose includes – costs, more efficient resource use;
examples of resources resulting from plastics processing are – raw materials, additives, packaging, production rejects, purged materials, water, oil, solvents;
evidence of a method for the recovery of resources is required for four examples of resources resulting from plastics processing.

- 1.5 An environmentally sensitive method for the disposal of non-recoverable plastics processing waste is described.

Range examples of non-recoverable plastics processing waste are – raw materials, additives, packaging, production rejects, purged materials, hazardous substances, hazardous waste, waste water, contaminated stormwater, oil, solvents, air emissions; evidence is required for five examples of non-recoverable plastics processing waste.

Outcome 2

Maintain plastics materials processing conditions.

Evidence requirements

- 2.1 Plastics raw materials are handled and stored.

Range handled and stored includes – avoiding hazards, avoiding contamination from: metals; packaging; other plastics materials; dirt; moisture, maintaining packaging: integrity; sealing; labelling; cleanliness; evidence is required for handling and storing plastics materials throughout a normal production shift.

- 2.2 Material processing conditions are maintained and the effect on the final product of a common change in each of the processing conditions is explained.

Range examples of processing conditions are – pre drying, pre heating, pre mixing, compounding, processing temperatures, annealing, regrinding, regrind dosing; evidence is required for maintaining three different material processing conditions throughout a normal production shift.

Replacement information	This unit standard replaced unit standard 272.
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Planned review date	31 December 2021
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 August 2006	31 December 2019
Review	2	15 September 2016	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.