Title	**Service and maintain a complex mould for injection moulding**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the construction and operation of complex injection moulds; use engineering drawings to interpret complex mould operation and construction; and service complex moulds and describe potential problems.

Classification	Plastics Processing Technology > Injection Moulding

Available grade	Achieved

Entry information	
Recommended skills and knowledge	Unit 29515, *Carry out routine service of injection moulding equipment*.

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
Complex mould – mould which uses at least one external power and control source to actuate product forming components, and requires sequencing with the mould operation. Includes moulds which retain molten material within the mould between cycles. Typical features may include: hot runners; insulated runners; externally actuated sliding blocks, cores, and unscrewing systems; safety interlocks.
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.

3 All evidence requirements must be performed in accordance with workplace procedures.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of the construction and operation of complex injection moulds.

Evidence requirements

1.1 Injection mould construction is described.

1.2 Injection mould functions and operations are described.

Range examples of functions and operations are – injection, cooling, opening, ejection, closing, electrical sensing and/or interlocking; evidence is required for at least five.

Outcome 2

Use engineering drawings to interpret complex mould operation and construction.

Range evidence is required for one complex mould.

Evidence requirements

2.1 Workplace engineering drawings are used to interpret mould operation and construction.

Outcome 3

Service complex moulds and describe potential problems.

Range two of – hot runners, hydraulic cylinders, hydraulic motors, pneumatics, bearings and seals.

Evidence requirements

3.1 Mould is opened and inspected and findings are reported.

Range includes – hydraulic cylinders.

3.2 Preventative maintenance is carried out.

Range evidence is required for at least two potential problems.

3.3 Mould lubrication is carried out.

3.4 Mould closing-up procedures are performed.

Range closing-up procedures include – inspection, cleaning, protective spraying, cooling medium removal, tag tools, tool storage.

3.5 The potential problems associated with moulds are described in terms of their causes, consequences, and prevention.

Planned review date	31 December 2021

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 April 1993	31 December 2013
Revision	2	13 February 1997	31 December 2013
Review	3	23 January 1998	31 December 2013
Review	4	24 August 2006	31 December 2019
Review	5	21 March 2013	31 December 2019
Review	6	15 September 2016	N/A

Consent and Moderation Requirements (CMR) reference	0013

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.