Title	**Set up, monitor, and adjust mono-layer production for blown film extrusion**		
Level	**2**	**Credits**	**12**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the operation of a film extrusion line for mono-layer production; set up a blown film extrusion line for mono-layer production; and monitor and adjust mono-layer production on a blown film extrusion line for a repeat production run, and identify and correct process faults and equipment malfunctions.

Classification	Plastics Processing Technology > Blown Film Extrusion

Available grade	Achieved

Entry information	
Recommended skills and knowledge	Unit 29514, *Operate pre-set plastics processing machinery;* Unit 23130, *Classify and name plastics materials*.

Explanatory notes

1 Legislation relevant to this unit standard includes but is not limited to the Health and Safety at Work Act 2015.

2 Definition
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 Films applicable to this unit standard are those produced from general purpose polymers such as low density polyethylene, linear low density polyethylene or high density polyethylene.

4 All assessment must be carried out using a mono-layer blown film extrusion machine, i.e. a blown film extrusion machine running a single extruder line.

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

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of the operation of a blown film extrusion line for mono-layer production.

Evidence requirements

1.1 The design and operation of spiral mandrel film dies, plate dies, air rings, and bubble cooling systems are described.

Range air rings – single lip, dual lip;
bubble cooling systems – ambient and refrigerated air supply and control, internal bubble cooling;
die – oscillating, stationary.

1.2 The design and operation of blown film extrusion downstream equipment are described.

Range equipment examples are – bubble guide; collapsing frame; fixed and driven top nips; opening and closing top nips; web guide; treater; edge slitter; edge trimmer; bowed spreader roll; cooling roller; in-line printer; surface winder; centre winder;
evidence is required for at least six pieces of equipment.

1.3 The relevance of blown film extrusion parameters is explained.

Range parameters – blow-up ratio, draw-down ratio.

Outcome 2

Set up a blown film extrusion line for mono-layer production.

Evidence requirements

2.1 Blown film extrusion line set-up information is interpreted.

2.2 Blown film extrusion line is set up.

Outcome 3

Monitor and adjust mono-layer production on a blown film extrusion line for a repeat production run, and identify and correct process faults and equipment malfunctions.

Evidence requirements

3.1 Blown film extruder and line controls are monitored and adjusted to meet quality and production specifications.

3.2 Routine film process faults are identified and the correction is described.

Range routine film process faults – carbon contamination, surface finish, edge finish, roll tension, die lines, low impact strength, film blocking, crushed cores, roll telescoping, roll taper.

3.3 The identification and correction of common equipment malfunctions are described.

Range common equipment malfunctions include – feed throat bridging; excessive head pressure; extruder surging; drive belt slippage; leaking adaptor clamp; faulty temperature controllers; barrel or die heater element failure; over-riding barrel temperatures.

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 2014
Revision	2	13 February 1997	31 December 2014
Review	3	23 January 1998	31 December 2014
Review	4	27 October 2005	31 December 2014
Review	5	17 May 2012	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.