

Title	Assemble acrylic components using chemical bonding agents		
Level	4	Credits	10

Purpose	<p>This unit standard is for people working in the plastics fabrication industry wishing to specialise in the fabrication of acrylic materials, Polyvinyl Chloride (PVC), Polyethylene Terephthalate (PET), Polyester and Polycarbonates.</p> <p>People credited with this unit standard are able to: demonstrate knowledge of the fundamentals of bonding and bonding agents used in acrylics fabrication, and mixing and dispensing techniques for bonding agents; prepare to assemble acrylic components by bonding; apply bonding agents; inspect bonding; and, prepare item for storage or transit.</p>
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Classification	Plastics Processing Technology > Plastics Fabrication
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Available grade	Achieved
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Guidance Information

1 References

Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of:

Health and Safety at Work Act 2015;

Health and Safety in Employment Regulations 1995.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

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 Assessment information

Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with legislative requirements and workplace procedures and meet accepted industry practice.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the fundamentals of bonding and bonding agents used in acrylics fabrication.

Performance criteria

- 1.1 Adhesives are described in terms of their applications for acrylic, PVC, PET, polyesters and polycarbonate materials.
- Range adhesives may include but are not limited to – isocyanate resins, phenolic resins, resorcinol adhesives, methylene dichloride, tetrahydrofuran, adhesive tapes; evidence is required for three adhesives.
- 1.2 The purpose of introducing additives to synthetic resins is explained in terms of the additives' effect on curing time and pot life.
- Range additives may include but are not limited to – curing agents, hardeners, buffers.
- 1.3 The consequences of non-conformance of assembled components with visual quality requirements are described.
- Range productivity, customer satisfaction, company reputation, aesthetics, free of visual defects or blemishes.
- 1.4 Physical factors affecting the bonding of acrylic, PVC, PET, polyesters and polycarbonate materials are explained.
- Range factors may include but are not limited to – glue type and mix, material type, application, curing times.
- 1.5 Bonding agent safety data sheets are explained in terms of their location, chemical content, and potential hazards content.

Outcome 2

Demonstrate knowledge of mixing and dispensing techniques for bonding agents.

Performance criteria

- 2.1 Recipe formulations and selection of bonding agents are described according to environmental conditions, temperature, humidity and material type.
- 2.2 Bonding agents are mixed, dispensed, and monitored.

Outcome 3

Prepare to assemble acrylic components by bonding.

Performance criteria

- 3.1 Work area is prepared, and correct equipment is selected.
- Range may include but is not limited to – tools, safety equipment, jigs, patterns, fixtures, environmental conditions.
- 3.2 Component parts and test pieces are prepared for assembly.
- Range mark out, inspect, clean, align, bonding preparation.

Outcome 4

Apply bonding agents.

Performance criteria

- 4.1 Hazards associated with bonding and bonding agents are identified and managed.
- 4.2 Equipment is identified and prepared for application of adhesive to ensure best contact and maximum mechanical connection.
- Range may include but is not limited to – jigs, forms, clamping equipment, masking of joints.
- 4.3 Adhesives are applied to acrylic components.
- 4.4 Glue application errors are identified, and corrective action is taken.
- Range out-of-specification applications, incorrect formulations.

Outcome 5

Inspect bonding.

Performance criteria

- 5.1 Bonded parts are monitored and adjusted, to ensure that bond aesthetics and strength requirements are met.
- Range while curing and post cure.
- 5.2 Bonded parts are monitored and checked for compliance with bonding specifications.
- 5.3 Joints are inspected and cleaned post cure, any defects are identified and remedied.

Outcome 6

Prepare item for storage or transit.

Performance criteria

- 6.1 Protective film and masking is applied.
- 6.2 Packing, strapping, internal and external supports are applied.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 September 2023	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>.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.