Title	**Form, assemble and join rigid plastics fabrication components to manufacture an assembly**		
Level	**4**	**Credits**	**15**

Purpose	People credited with this unit standard are able to prepare to form, assemble and join, and form rigid plastics fabrication components; assemble and join rigid plastics fabrication components; and inspect the completed assemblies.

Classification	Plastics Processing Technology > Plastics Fabrication

Available grade	Achieved

Guidance Information

1 Health and Safety at Work Act 2015;
Health and Safety in Employment Regulations 1995;
International Organisation for Standardisation (ISO) 21307-17;
German Welding Society (DVS), Technical Codes on Plastics Joining Technologies, DVS standards, DVS Media (dvs-media.eu);
Plastics Industry Pipe Association of Australia (PIPA) Technical Guidelines, Plastics Industry Pipe Association of Australia – PIPA.

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 refer to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace, and are consistent with manufacturer's requirements. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the industry sector.

3 Assessment information
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer's specifications, workplace procedures and legislative requirements.

Outcomes and performance criteria

Outcome 1

Prepare to form, assemble and join rigid plastics fabrication components.

Range material thickness – 1mm to 50mm.

Performance criteria

1.1 Plan work to meet job requirements.

Range may include but is not limited to – materials, tools and equipment, work sequences, identification of potential problems, identification of solutions to resolve problems.

1.2 Select and set up tools, equipment and machinery to meet job requirements.

1.3 Perform calculations to confirm components are formed according to job requirements.

Range may include but is not limited to – templates, mean radius, efficient use of materials, pressure settings, bend allowances; evidence for a minimum of two calculations is required.

1.4 Carry out safety procedures before forming, assembling and joining.

Range may include but is not limited to – use of personal protective equipment, checking of equipment for faults, correct use of lifting and handling equipment, use of fume extraction equipment, elimination of risk of fire, protection from electrocution.

Outcome 2

Form rigid plastics fabrication components.

Range formed rigid plastics fabrication components must include – angle bends, cylindrical shapes, cones.

Performance criteria

2.1 Form components to meet job requirements.

Range forming machines may include – press, rollers, strip heater; hand forming tools may include – mandrels, formers; evidence is required for a minimum of two machines and two hand tools.

2.2 Correct damage and distortion caused by mechanical or thermal fabrication work during forming.

Range damage may include – tooling marks, handling damage marks, work surface marks, material fatigue;
distortion may include – material stretching, material thinning.

Outcome 3

Assemble and join rigid plastics fabrication components.

Range assembly may include but is not limited to – fabricating a small box, pipe-based project, welding pipe to flat sheet.
must include a minimum of three joining methods and one closed container.
evidence is required for three unique assemblies incorporating formed components from outcome 2.

Performance criteria

3.1 Assemble and join formed components in accordance with job requirements.

Range may include but is not limited to – jigs and fixtures, assembly tools, machinery and equipment.

3.2 Mark out datum points and lines to aid assembly in accordance with job requirements.

3.3 Correct damage and distortion by mechanical or thermal means to meet job requirements.

Range may include but is not limited to – press, former, roller;
application of heat.

Outcome 4

Inspect the completed assemblies.

Range assemblies completed from outcome 3.

Performance criteria

4.1 Inspect assemblies for compliance with job requirements.

Range visual examination, tolerance checks, dimensional checks.

4.2 Test assemblies for compliance with job requirements

Range hydrostatic, air test, spark test.

4.3 Report and fix any deviation from job requirements.

4.4 Report completion of work.

Planned review date	31 December 2027

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

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.