Title	**Demonstrate knowledge of metal roof and wall cladding systems**		
Level	**3**	**Credits**	**7**

Purpose	This unit standard is intended for use in the training and assessment of people carrying out metal roof and wall cladding installation and covers knowledge of metal roof and wall cladding system. People credited with this unit standard are able to: – demonstrate knowledge of specifications and other documentation used for metal roof and wall cladding; – demonstrate knowledge of the work procedures used for installing metal roof and wall cladding; – identify common residential metal roof parts and types; – identify common industrial metal roof and wall cladding types; – identify common support framing for metal roof and wall cladding; – demonstrate knowledge of metals, profiles, and coatings used for profiled metal roof and wall cladding; – demonstrate knowledge of underlays used in metal roof and wall cladding; – demonstrate knowledge of insulation used in metal roof and wall cladding; – demonstrate knowledge of fastenings used in metal roof and wall cladding; and – demonstrate knowledge of the purpose and use of sealants.

Classification	Plumbing, Gasfitting and Drainlaying > Roofing

Available grade	Achieved

Guidance Information

1 This unit standard has been developed for learning and assessment on-job and off-job.

2 References
Construction Contracts Act 2002;
Historic Places Act 1993;
Local Government Act 2002;
Building Act 2004 and associated regulations;
Health and Safety at Work Act 2015;
Resource Management Act 1991;

Acceptable Solutions and Verification Methods for New Zealand Building Code Clause E2 External Moisture;
New Zealand Metal Roof and Wall Cladding Code of Practice;
Licensed Building Practitioner Scheme – Understanding the Regulatory Environment Booklet – available at: http://www.business.govt.nz/lbp/the-board/getting-licensed/applying-for-licensing;
NZS 3604:2011 Timber-framed buildings;
NZS 3902:2004 Housing, alterations and small buildings contract;
NZS 4121:2001, Design for access and mobility: Buildings and associated facilities;
New Zealand Building Code handbook – available at: http://www.building.govt.nz/building-code-compliance/building-code-and-handbooks/building-code-handbook;
and all subsequent amendments and replacements.

3 This unit standard applies to both new roof and re-roofing installations.

4 Range
- a Candidates must refer to current legislation and Standards during assessment.
- b Demonstration of safe working practices are essential components of assessment of this unit standard.
- c All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with:
  - i legislation;
  - ii policies and procedures;
  - iii ethical codes;
  - iv Standards – may include but are not limited to those cited in the New Zealand Building Code Hand Book;
  - v applicable site, enterprise, and industry practice; and,
  - vi manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of specifications and other documentation used for metal roof and wall cladding.

Performance criteria

1.1 Describe the use of plans or written specifications and sketches to define the roof or wall cladding requirements.

1.2 Describe the use of manufacturers' specifications in terms of specific installation requirements and instructions.

1.3 Identify legislation and codes that may affect roof installation specifications.

Range includes but is not limited to – the New Zealand Metal Roof and Wall Cladding Code of Practice, the NZBC, New Zealand Standards, Material Safety Data Sheets.

Outcome 2

Demonstrate knowledge of the work procedures used for installing metal roof and wall cladding.

Performance criteria

2.1 Describe the purpose of communication and toolbox meetings in terms of information sharing and job organisation.

2.2 Describe procedures for handling and protecting materials.

2.3 Describe procedures for using ladders and walking on roofs.

Outcome 3

Identify common residential metal roof parts and types.

Performance criteria

3.1 Identify common residential metal roof types using industry terminology.

Range includes but is not limited to – pitch, gable, angled gable, cross gable, dutch gable, hip, four hip, mansard, mono slope, bull nose, verandah, lean-to, parapet, stepped, hipped dormer, dog kennel dormer, dormer gable, crimp curve, drape curve, skillion.

3.2 Identify the parts that form a common residential metal roof using industry terminology.

Range includes but is not limited to – dormer, eaves, fascia board, flashing, collar flashing, penetration, fascia gutter, rainwater head, ridging, ridge cap, flat roof, gable, hip, hip end, ridge, soffit, valley, lean-to, down pipe, chimney penetration, foam filler blocks.

Outcome 4

Identify common industrial metal roof and wall cladding types.

Performance criteria

4.1 Identify common industrial metal roof types using industry terminology.

Range includes but is not limited to – pitch, low slope, parapet, saw tooth, draped curve, crimped curve.

4.2 Identify the parts that form common industrial metal roof and wall cladding using industry terminology.

Range includes but is not limited to – internal gutter, parapet capping, internal sump, ridging, fascia gutter, barge flashing, apron flashing, internal corner, ventilator, ridge vent, external gutter, foam filler blocks.

Outcome 5

Identify common support framing for metal roof and wall cladding.

Performance criteria

5.1 Identify common structural components used for the roof support framework.

Range purlins, rafters, portal frames, trusses.

5.2 Identify common uses of timber and steel as support frameworks in terms of building type and size.

Outcome 6

Demonstrate knowledge of metals, profiles, and coatings used for profiled metal roof and wall cladding.

Performance criteria

6.1 Identify metals used for metal roof and wall cladding in terms of their properties, advantages, and disadvantages.

Range aluminium, galvanised steel, zinc, copper, stainless steel.

6.2 Identify a range of metal roof profiles.

Range asymmetrical trapezoidal, symmetrical trapezoidal, corrugated, self-supporting concealed fixing, fully supported concealed fixing.

6.3 Identify profiled metal cladding terms.

Range cover width, web, rib width, trough, pan, rib, crest, depth, corrugate, corrugate lap, swage, vertical rib, trapezoidal lap, anti-capillary groove.

6.4 Describe pre-coated profiled steel sheeting in terms of advantages and disadvantages.

Range client’s requirements, installation economy.

Outcome 7

Demonstrate knowledge of underlays used in metal roof and wall cladding.

Performance criteria

7.1 Explain the purpose of underlays in terms of their role in the metal roof or wall cladding system.

7.2 Identify common underlay types according to their use in metal roof and wall cladding applications.

Range impregnation types, self-supporting, grades.

7.3 Describe underlay support system types in terms of their advantages and disadvantages.

Range wire netting, safety mesh, strapping.

Outcome 8

Demonstrate knowledge of insulation used in metal roof and wall cladding.

Performance criteria

8.1 Describe bulk insulation options in terms of composition.

8.2 Describe reflective insulation and compared with bulk insulation.

8.3 Explain installation methods for insulation according to roof type.

Range roof with attic type space, skillion roof type, metal wall cladding.

Outcome 9

Demonstrate knowledge of fastenings used in metal roof and wall cladding.

Performance criteria

9.1 Identify types of fastenings used in terms of their purpose.

Range primary, secondary, screw, nail, rivet.

9.2 Describe fastening material options according to fastening type, common use, and material compatibility.

9.3 Describe methods of fixing in terms of tools used and technique.

9.4 Identify head types and drivers and describe their application.

Range head type – hexagon, countersunk, pan, wafer;
drivers – Phillips, pozi drive, square, slotted, external hexagon, multi-head.

9.5 Identify head stamp information in accordance with manufacturers' specifications and fastening class.

9.6 Identify screw point types in terms of their use.

Range type 17, self-drilling, self-piercing, self-tapping.

9.7 Describe the purpose of fastening washers.

Outcome 10

Demonstrate knowledge of the purpose and use of sealants.

Performance criteria

10.1 Describe the purpose of sealants in terms of use in a roof installation.

10.2 Identify the use of sealants in terms of sealant type, preparation and application options.

Planned review date	31 December 2023

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 January 2009	31 December 2020
Review	2	16 March 2017	N/A
Rollover	3	25 August 2022	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact the Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.