

Title	Demonstrate knowledge of equal pitch gable, and hip, timber and steel roof construction		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: explain the requirements for timber and steel equal pitch gable and hip roofs in accordance with industry standards or specific design; explain methods used to calculate lengths and bevels for timber and steel equal pitch gable and hip roofs; describe the construction of timber and steel gable and hip roofs; and describe the construction of gable and hip roofs using timber and steel roof trusses.
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Classification	Construction Trades > Carpentry Theory
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Available grade	Achieved
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Guidance Information

- 1 Definitions
Industry standards means standards that are documented and recognised by industry, and are relevant to the building material used. Standards that may be applicable are listed in guidance note 3.
Specific design is a design that ensures compliance with the Building Act 2004 when the construction requirements of a building deviates from, or is beyond the scope of recognised industry standards (New Zealand Standards, Australia/New Zealand Standards, British Standards and other published standards that govern the construction industry).
- 2 Credit for this unit standard indicates compliance with industry practice. *Industry practice* refers to the ability to demonstrate knowledge that reflects the uniformity, finish quality and material economies currently accepted within industry.
- 3 Legislation and publications relevant to this unit standard include:
 Health and Safety in Employment Act 1992 and Health and Safety in Employment Regulations 1995;
 Building Act 2004;
 Resource Management Act 1991;
 New Zealand Building Code;
 NZS 3604:1999 *Timber Framed Buildings*, available from Standards NZ (<http://www.standards.co.nz>);
National Association of Steel Framed Housing (NASH) 3405 Design and Construction Guide (Non-specific), available from NASH NZ, PO Box 76 134, Manukau City.

Outcomes and performance criteria

Outcome 1

Explain the requirements for timber and steel equal pitch gable roofs and hip roofs in accordance with industry standards or specific design.

Performance criteria

- 1.1 Gable and hip roofs are described in terms of their differences.
- 1.2 Roof and ceiling framing members are described in terms of their location and purpose.
- Range rafters, valley rafters, hip rafters, purlins, valley boards, ceiling joists, ceiling runners, ceiling battens, ridge, panels for steel framed roofing.
- 1.3 Roof bracing and support systems are described in terms of their location and purpose.
- Range under purlins, struts, dragon ties, strutting beams, collar ties and cleats, roof space braces, roof plane braces including sarking.
- 1.4 Penetration framing, and trim, are described in terms of its location and purpose.
- Range eaves (soffits), verges, fascia boards, barge boards, linings and trim, ceiling and roof penetrations.

Outcome 2

Explain methods used to calculate lengths and bevels for timber and steel equal pitch gable and hip roofs.

Performance criteria

- 2.1 Principles of roof geometry are explained in terms of obtaining roof member lengths and bevels.
- 2.2 Methods used to calculate the lengths and bevels of roof framing are described, and accurate sample calculations performed in accordance with industry practice.

Outcome 3

Describe the construction of timber and steel gable and hip roofs.

Performance criteria

- 3.1 Methods for the set out and cutting of roof framing members to correct lengths and bevels are explained.
- Range rafters, valley rafters, hip rafters, purlins, valley boards, ceiling joists, ceiling runners, ceiling battens ridge, panels for steel framed roofing.
- 3.2 The erection and fixing in position of roof framing members is explained.
- Range rafters, valley rafters, hip rafters, purlins, under purlins, struts, strutting beams, collar ties and cleats, roof space braces, roof plane braces including sarking, valley boards, ceiling joists, ceiling runners, ceiling battens, ridge, panels for steel framed roofing.
- 3.3 The construction of framing and trim is explained.
- Range fascia boards, barge boards, eaves (soffits) and verges, linings, ceiling and roof penetrations.
- 3.4 Procedures for maintaining health and safety requirements when erecting roof framing are described.
- Range work methods, plant, equipment, identification of hazards and controls.

Outcome 4

Describe the construction of gable and hip roofs using timber and steel roof trusses.

Performance criteria

- 4.1 Handling and storage of roof trusses without damage is described in accordance with truss manufacturer's instructions.
- 4.2 Set out, erection and fixing in position of roof trusses using fastenings, is described in accordance with truss manufacturer's instructions.
- 4.3 Trimming of penetrations in roof space is described in accordance with truss manufacturer's design.
- 4.4 Procedures for maintaining health and safety requirements when erecting roof trusses are described.
- Range work methods, plant, equipment, identification of hazards and controls.

Replacement information	This unit standard replaced unit standard 13013 and unit standard 20888. This unit standard was replaced by unit standard 32490.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 January 2008	31 December 2023
Review	2	30 September 2021	31 December 2023

Consent and Moderation Requirements (CMR) reference	0048
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.