

## GL17S Rafters – Sheet/Tile N3

Size (mm)	Rafters carrying Sheet Roofing + Ceiling – Rafter Spacing (mm)					
	Single Span Rafters			Continuous Span Rafters		
	300	600	900	300	600	900
140x42	4.7	3.9	3.5	6.1	5.3	4.7
190x42	6.0	5.2	4.7	7.5	6.6	6.1
240x42	7.0	6.2	5.7	8.8	7.8	7.2
290x42	7.9	7.1	6.5	10.0	8.9	8.2
140x65	5.2	4.4	3.9	6.6	5.8	5.4
190x65	6.4	5.7	5.3	8.1	7.2	6.7
240x65	7.4	6.7	6.2	9.4	8.4	7.9
290x65	8.4	7.6	7.1	10.5	9.6	8.9
240x80	7.6	6.9	6.5	9.6	8.7	8.2
Size (mm)	Rafters carrying Concrete or Terracotta Tiles + Ceiling – Rafter Spacing (mm)					
	Single Span Rafters			Continuous Span Rafters		
	300	600	900	300	600	900
140x42	3.8	3.1	2.7	5.1	4.2	3.7
190x42	5.1	4.1	3.6	6.5	5.6	5.0
240x42	6.1	5.2	4.6	7.6	6.6	6.0
290x42	6.9	6.0	5.5	8.7	7.6	6.9
140x65	4.3	3.5	3.1	5.7	4.8	4.2
190x65	5.6	4.7	4.2	7.1	6.1	5.6
240x65	6.6	5.8	5.2	8.3	7.2	6.6
290x65	7.5	6.6	6.0	9.4	8.3	7.6
240x80	6.8	6.0	5.5	8.6	7.6	6.9

Span values are in metres

### Loading Data:

Dead Load of roof: Sheet roof + ceiling, maximum 40 kg/m<sup>2</sup>, Tiled roof + ceiling, maximum 90 kg/m<sup>2</sup>

(Covers standard residential roof materials, for roof pitch maximum 35deg)

Wind Load taken as N3 in accordance with AS 4055 Wind Loads for Housing

ETH LAM GL beams are manufactured straight, without any camber built into the beams.

Deck Joist design criteria in accordance with methods presented in AS1684.1-1999, and structural timber design in accordance with AS1720.1-2010.

Notes:

- 1) Minimum bearing lengths for support of rafters: 35mm on end supports, and 45mm internal supports.
- 2) The span value shown is the distance between centrelines of supports.
- 3) For continuous spans, the adjacent rafter spans may be different, but look up the larger of the spans, and the shorter span must be more than 50% of the larger span. If this rule is not met, then consider the rafters are simply supported, and look up the larger span in the single span table.
- 4) Deflection criteria: for dead load, the lesser of Span/300, or 20mm, and for Roof Live Loads, Span/250.
- 5) For deck joists the lateral restraint is assumed to be achieved via the fixing of flooring direct to the top edge. No restraint of the bottom edge of the joist is assumed.
- 6) Where there are conflicts in design between loading codes (AS/NZS1170 series), timber code (AS1720.1-2010) and AS1684.1-1999, the loading codes and timber codes take preference.

The above span table values have been designed in accordance with the following codes:

- ☑ AS1720.1-2010 Timber Design Code
- ☑ AS1170.0, .1, .2-2002 Loading Codes for Limit State design, Live Loads, and Wind Loads respectively.
- ☑ AS1684.1-1999 Design Criteria for Residential Timber Framing.