

Building Control Guidance Note	Subject	PURLIN AND RAFTER ROOFS Timber sizes and construction details						18	
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The following tables give details of the allowable spans and spacing for some of the more common timber sizes used in traditional roofing construction. All the figures are based on roofing tiles or slates laid on timber laths over sarking felt. For heavier roofing materials or unusual loading conditions these tables may not be appropriate and you should refer to the **TRADA Document – ‘Span tables for solid timber members in floors, ceilings and roofs for dwellings’** or ask your Building Control Officer for advice.

**MAXIMUM CLEAR SPAN OF RAFTERS IN METRES
FOR ROOF PITCHES OF BETWEEN 15 AND 45 DEGREES**

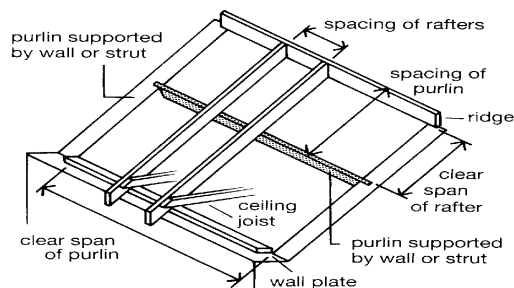
Size of rafters in mm	Roof pitch between 15 and 22.5 degrees with rafter spacing of			Roof pitch between 22.5 and 30 degrees with rafter spacing of			Roof pitch between 30 and 45 degrees with rafter spacing of		
	400mm	450mm	600mm	400mm	450mm	600mm	400mm	450mm	600mm
100 x 47	2.11	2.04	1.83	2.19	2.10	1.91	2.26	2.17	1.97
125 x 47	2.67	2.57	2.27	2.73	2.63	2.38	2.82	2.71	2.46
150 x 47	3.20	3.08	2.69	3.27	3.15	2.85	3.38	3.25	2.95

Table assumes a minimum C16 structural grade timber - not all timber is structurally graded – ensure you purchase the right material!!

**MAXIMUM CLEAR SPAN OF PURLINS IN METRES
FOR ROOF PITCHES OF BETWEEN 15 AND 45 DEGREES**

Size of purlin in mm	Roof pitch between 15 and 22.5 degrees with purlin spacing of			Roof pitch between 22.5 and 30 degrees with purlin spacing of			Roof pitch between 30 and 45 degrees with purlin spacing of		
	1.5m	2.1m	2.7m	1.5m	2.1m	2.7m	1.5m	2.1m	2.7m
175 x 63	2.06	1.82	-	2.11	1.87	-	2.19	1.93	-
200 x 63	2.36	2.08	1.82	2.41	2.13	1.89	2.50	2.21	1.98
225 x 63	2.65	2.32	2.04	2.71	2.40	2.11	2.81	2.48	2.22
275 x 63	3.24	2.80	2.46	3.31	2.90	2.55	3.43	3.03	2.68
175 x 75	2.20	1.94	-	2.25	1.99	1.81	2.33	2.06	1.88
200 x 75	2.51	2.22	2.00	2.57	2.27	2.07	2.66	2.36	2.15
225 x 75	2.82	2.50	2.23	2.89	2.56	2.31	2.99	2.65	2.41

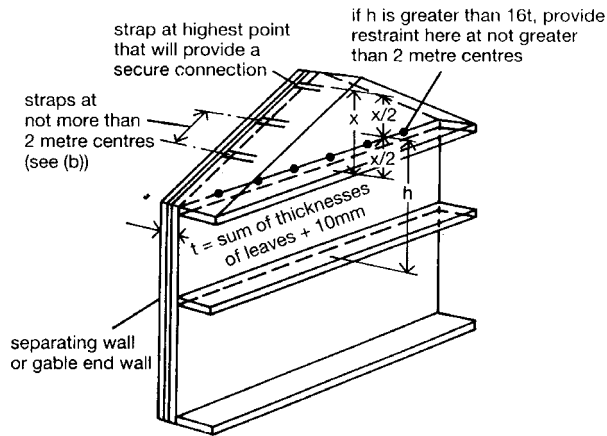
The diagram to the right illustrates the typical arrangement of a rafter and purlin roof and shows the dimensions referred to in the tables above



take the clear span for the purlin as the clear dimension between supporting struts and/or walls

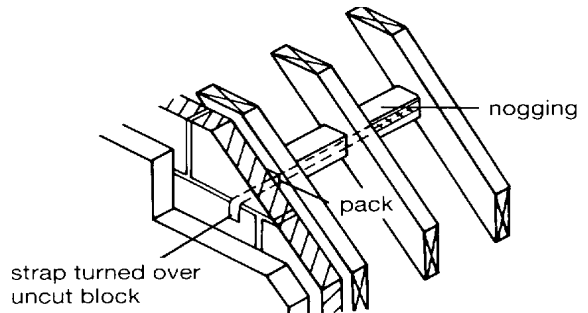
No notching of timbers permitted.

Max birdsmouth to be 1/3rd rafter depth – provided they are restrained by ceiling ties.

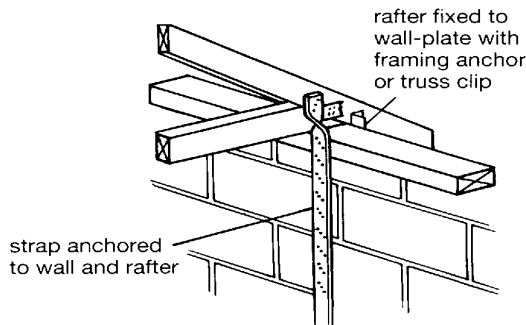


Gable walls need to be strapped to the roof at maximum 2m centres using 30 x 5mm galvanised mild steel straps

Each strap should be fixed as shown in the diagram opposite with noggins between the rafters to support the metal strap along its whole length



b. EFFECTIVE STRAPPING AT GABLE WALL



d. VERTICAL STRAPPING AT EAVES-PITCHED ROOFS

At eaves level, vertical straps 1m long should be fixed as shown in the diagram opposite at a maximum of 2m centers.

And finally - this is the right way to fix truss clips connecting the rafter and wall plate. Note that these are normally only required to trussed rafter roofs and not for traditional purlin and rafter roof construction.

