

PERMISSIBLE CLEAR SPANS FOR RAFTERS (TO BS 5268-7.5)

Slope - 15° or more but less than 22.5°
Imposed load - 0.75 kN/m²
Strength class - C24
Plasterboard - Yes

- This span table is to the format and methodology given in BS 5268-7.5.
- These span tables are the equivalent of other industry-standard span tables and are calculated to the same standards.
- This table uses commonly available UK **regularised** timber depths.
- Read the notes at the bottom of the table for assumptions, references and related standards.

C24	Dead load per square metre (in kN/m²) supported by rafters								
	Not more than 0.5			More than 0.5 but not more than 0.75			More than 0.75 but not more than 1		
	Centre-to-centre spacing of rafters (in mm)								
Rafter size Width × depth (mm)	400	450	600	400	450	600	400	450	600
	Permissible clear span on slope (metres)								
47 × 95	2.091	2.065	1.995	1.995	1.964	1.881	1.916	1.881	1.791
47 × 120	2.847	2.805	2.693	2.693	2.643	2.516	2.569	2.516	2.380
47 × 145	3.625	3.565	3.387	3.406	3.337	3.161	3.234	3.161	2.977
47 × 170	4.416	4.335	3.963	4.127	4.038	3.727	3.905	3.811	3.538
47 × 195	5.166	4.977	4.536	4.852	4.688	4.268	4.578	4.455	4.052

The allowable clear spans have been calculated in accordance with BS 5268-2:2002 Structural use of timber - Part 2: Code of practice for permissible stress design, materials and workmanship and BS 5268-7.5:1990 Structural use of timber - Section 7.5 Domestic rafters.

The dead loads shown at the top of span table above do not include the self weight of the rafters, however, the rafter self weights are included (in addition to the dead loads) in the calculations used to determine permissible clear spans.

These span tables do not apply to trussed rafter roofs.

These span tables only apply to roof systems with four or more rafters. It is also assumed ceiling joists will be used to transmit the horizontal component of thrust occurring at eaves level to complementary rafters.

These span tables are based on the assumption that the tiling battens fastened to the top of the rafters will provide adequate lateral restraint and also ensure that lateral loads are distributed.

The calculations on which these span tables are based conservatively assume that the rafters are not continuous over the purlins, but they can be continuous over the supporting purlin if required.

Holes and notches cannot be drilled or cut into the rafters unless proved adequate by specialist calculations.

Timber to be covered, these span tables do not apply to timber which is fully exposed to the elements.

Wane as allowed in BS 4978:2007+A2:2017 is permitted in all sections included in these span tables.

Rafters are to have minimum end bearing of 35mm.

The imposed load should be calculated in accordance with BS 6399:Part 3:1988 Code of practice for imposed roof loads, as a rule of thumb for altitudes not exceeding 100m you can use a uniformly distributed load of 0.75 kN/m² and for most other areas exceeding 100m but not exceeding 200m you can use 1 kN/m², for parts of Scotland, Pennines, North East England and heights over 200m you will need to refer to BS 6399 Part 3.