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SR 11 : 1988

STANDARD RECOMMENDATION

STRUCTURAL TIMBER FOR DOMESTIC CONSTRUCTION

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1.0 Scope

This Standard Recommendation covers the requirements for joists, rafters and purlins used in domestic construction, by reference to the strength classification of timber used.

The document classifies timber of given species and stress grades into strength classes and it also permits the classification by machine, of timber of given species directly into strength classes. The strength classes in turn are used in the permissible span tables to specify the maximum spans for floor joists and ceiling joists and roof rafters and purlins of given minimum cross-sectional sizes.

1.1 Field of Application

It is intended that the timber members complying with the permissible span tables will be suitable for use in domestic construction. However, the document does not cover all domestic construction situations and it is recommended that a consulting structural engineer or other equally qualified person be engaged to advise on the structural design of members not covered herein.

The stress grading of timber shall comply with BS 4978 : 1973 (as amended)*. However the rate of growth requirement in BS 4978 is waived, for the purposes of visually graded timber, to permit ring widths not greater than 10 mm for General Structural grade and 6 mm for Special Structural grade timber.

*Pending the publication of I.S. 3211 : Part 2 "Specification for stress grades and strength classes" (in course of preparation).

1.2 Abbreviations

The following abbreviations are adopted, and used in the permissible spans given in Tables 5 to 13.

1.2.1 Stress graded timber:

1.2.1.1 General structural grade timber:

Visually graded	GS
Machine graded	MGS

1.2.1.2 Special structural grade timber:

Visually graded	SS
Machine graded	MSS

1.2.1.3 The other machine grade, i.e. M75, does not have a direct visual equivalent.

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1.2.2 Timber in a strength class: SC

1.2.2.1 The classification of timber into a strength class may be timber which has been visually graded as GS or SS or machine graded as MGS or MSS or M75 see Table 1.

1.2.2.2 Timber which is mechanically classified into a strength class:

Strength Class A	M SC A
Strength Class B	M SC B
Strength Class C	M SC C

1.2.2.3 Timber which is visually classified into a strength class:

Strength Class A	SC A
Strength Class B	SC B
Strength Class C	SC C

1.3 Marking

For the purposes of tables 5 to 12, timber shall be marked with the appropriate strength class mark given in 1.2.2.2 and 1.2.2.3 above.

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2. STRENGTH CLASSES

2.1 Visual classification

Timber visually classified (see 1.2.2.3 above) shall be a combination of the timber species and grade given in Table 1 for each of the strength classes shown.

2.2 Machine classification

Timber mechanically classified (see 1.2.2.2 above) shall be classified by an approved* machine. Information as to the timber species is necessary for machine classification.

M75 stress grade Irish spruce corresponds with machine strength class M SC C

*Approved by EOLAS/NSAI/ILAB.

Table 1: Softwood species and grades which satisfy Strength Classes

Softwood Species	Strength Classes		
	M SC A or SC A	M SC B or SC B	M SC C or SC C
Irish Timber			
Sitka Spruce	GS or MGS	SS or MSS	
Norway Spruce	GS or MGS	SS or MSS	
Douglas Fir	GS or MGS		SS or MSS
Larch		GS or MGS	SS or MSS
Imported Timber			
European Whitewood		GS or MGS	SS or MSS
European Redwood		GS or MGS	SS or MSS
Douglas Fir-Larch		GS or MGS	SS or MSS
Spruce-pine-fir (Canada)		GS or MGS	SS or MSS
Hem-fir (Canada)		GS or MGS	SS or MSS

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3. PERMISSIBLE STRESSES

Table 2 gives the values of permissible stresses and modulus of elasticity for use with timber of the Strength Classes shown. A species and grade combination has been assigned to a strength class if the species and grade physical properties are not less than 95% of the class values.

Table 2: Permissible Stress and Moduli Values

Properties	STRENGTH CLASSES		
	M SC A or SC A	M SC B or SC B	M SC C or SC C
Stress	MPa	MPa	MPa
Bending	4.1	5.6	6.6
Tension	2.5	3.4	4.0
Compression parallel	5.2	6.1	6.4
Compression perpendicular	1.4	1.6	1.8
Shear	0.64	0.64	0.8
Modulus of elasticity			
E mean	7000	8000	9000
E minimum	4500	5000	6000

1 MPa = 1 N/mm^2

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