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MODEL CLAUSES FOR CIVIL ENGINEERING WORKS

SECTION 160

GENERAL REQUIREMENTS FOR STRUCTURAL TIMBER

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SECTION 160

GENERAL REQUIREMENTS FOR STRUCTURAL TIMBER

Application of standards

160.001 The structural design, manufacture, supply and construction of timber and wood based products shall be carried out in accordance with the requirements of BS 5268-2 or BS EN 1995-1-1 (Eurocode 5) and the UK National Annex to BS EN 1995-1-1 except where qualified by the Clauses in Sections 160 to 164 inclusive.

A consistent system of standards shall be applied to the design of works, based either on BS 5268 or BS EN 1995-1-1.

Additional guidelines to BS 5268 for specific structural assemblies and design situations are given in BS 5268-3, BS 5268-4.1, BS 5268-4.2 and BS 5268-6.1.

Additional guidelines to BS EN 1995-1-1 for fire situations are given in BS EN 1995-1-2 and UK National Annex to BS EN 1995-1-2.

When using BS 5268-2, softwood and hardwood timber for structural use shall comply with BS 5268-2 and conform to the strength class or species and grade as shown on the Contract Drawings.

When using BS EN 1995-1-1, softwood and hardwood timber for structural use shall comply with BS EN 1995-1-1 and conform to the strength class in accordance with BS EN 1912 and as shown on the Contract Drawings.

Softwood and hardwood timber

160.002 Solid timber for structural use shall be selected by visual or machine strength grading in accordance with the relevant part of BS EN 14081 or BS 4978 for softwoods or BS 5756 for hardwoods or other national strength grading procedures that are recognised in BS or EN standards.

Timber of the appropriate species and grade combination shall be assigned to a strength class following BS 5268-2 or BS EN 1912. Material properties for design to BS 5268 shall be taken for strength classes and for certain additional species/grade combinations from BS 5268-2.

Material properties for design to BS EN 1995-1-1 shall be taken for strength classes from BS EN 338. Material properties for design of glued laminated timber to BS EN 1995-1-1 shall be taken from BS EN 1194.

Timber shall also comply with any additional requirements shown on the Contract Drawings.

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Notwithstanding the requirements of BS 5268-2 or BS EN 14081 for the timber to be stamped to certify its grade and species, the Employer's Representative shall be provided with written certification for the timber proposed to be used to certify:

- (i) the species,
- (ii) the strength grade and/or strength class,
- (iii) the moisture content at time of delivery (before and after preservative treatment as applicable).

Timber shall, where practicable, be supplied from sustainable managed forests accredited under an independent third party certification scheme.

Timber species 160.003 Timber species are referred to on the Contract Drawings by standard names as defined in BS 5268-2, BS EN 1912 or BS EN 13556.

Glued laminated (glulam) structural timber 160.004 Glued laminated (glulam) timber members shall be manufactured in accordance with BS 5268-2 and BS EN 386 or BS EN 14080. The moisture content of the laminations at the time of manufacture shall be within $\pm 2\%$ of that likely to be attained in service in accordance with BS 5268-2 Table 1 or BS EN 1995-1-1.

Adhesive shall be in accordance with BS EN 301 and shall be type matched to the service class and environment.

Glulam products shall be marked by the manufacturer with the characteristic strength as defined in BS EN 1194 in addition to the marking requirements given in BS EN 386 and BS EN 14080.

The following glulam timber strength characteristics shall be as identified in **Appendix 160/1**:

- (i) strength class of inner laminations,
- (ii) strength class of outer laminations.

Glulam shall be supplied by manufacturers whose quality system for product conformity has been approved by an inspection body accredited by the United Kingdom Accreditation Service (UKAS) or equivalent in accordance with the procedures to BS EN 386 and BS EN 14080.

Where glulam is used in an external environment, details of timber species, adhesive type and preservative treatment and their suitability for external use shall be as identified in **Appendix 160/2**.

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