

# Current Softwood Standards – Made Easy!



## From British to European Standards

The European Union is a free trade area, which means in principle that products can be sold in any EU Country without encountering barriers to trade. Hence the old name for the EU was "The Common Market". In the early 1980s the European Union identified that because each country had its own Technical Standards for Construction Products these created very effective barriers to trade. Therefore the European Parliament set in motion a Harmonisation process to reconcile these different technical standards and effectively dismantle the barriers to free trade in construction products. After a difficult gestation period of over 20 years the first of these Harmonised Standards was born!

## Who creates standards?

The European Standards body CEN was charged with managing the process of harmonising technical standards and spent the first few years defining and grouping together the many types of Construction Products used throughout Europe. CEN then went on to create European Technical Committees (TCs) to be responsible for each major product grouping and these were given reference numbers as well as names to make identification easy in all EU languages. Examples in the wood sector are TC.124 Structural Timber, TC.112 Wood Based panels and TC.175 Round and Sawn Timber. The Technical Committees are subdivided into numbered Working Groups (WGs) representing specialist product areas, for instance TC.112 - WG5 Plywood.

Each EU member state is entitled to provide representation on the Technical Committees and their Working Groups. In the UK this representation is drawn from the relevant BSI Committee, often termed mirror committee as the work reflects on a national basis what is happening at the CEN Technical Committee level on a Europe wide basis. BSI committees in turn comprise representatives from Industry, Trade Associations, Research Bodies and other interested parties. The relationship between some of the numerous CEN and BSI committees is shown in the table below. However, not all BSI Committees have identical mirror CEN committees and vice versa.

### BSI Committee

B/515 Wood Preservation  
B/518 Structural Timber  
B/525/05 Design Codes/Structural Use of Timber  
B/541 Wood Based Panels  
B/543 Round and Sawn Timber

### CEN Committee

CEN/TC 38 Durability of Wood  
CEN/TC 124 Timber Structures  
CEN/TC 250 Structural Eurocodes SC5  
CEN/TC 112 Wood-Based Panels  
CEN/TC 175 Round & Sawn Timber

## Standards Funding

Ultimately Industry funds work on the creation and maintenance of standards. The representatives on BSI committees are not directly paid for the standards work they undertake. It is their company which must fund their attendance and input, whilst those from Trade Associations, academia or consultancies, are indirectly funded from membership fees or other industry funded initiatives. BSI is a commercial organisation which does not receive government funding but generates income from the sales of standards and other commercial activities. This income is used to convert the technical information generated by the BSI and CEN Committees into publishable standards which can be purchased and used by Suppliers, Buyers and Distributors of products. The overheads for BSI are quite substantial as they include the provision of meeting facilities for the committees, some secretarial services for the committees and a wide range of professional editing and publishing staff.

## The Standards Process

Each European member state originally had its own Technical Standard (or Standards) covering a Product Type, and these included unique terminology, product performance requirements and most importantly unique test methods to determine the different attributes of the product. In order to sell in a particular country a supplier had to meet the product requirements and follow the test methods described in the national standard of that country, which often meant paying for many different test programmes and various third party assurance schemes.

During the Harmonisation process the CEN Technical Committee uses its combined expertise to reach a consensus as to which product requirements and which test methods will be used throughout Europe. Once formulated these product requirements and test methods are then published as draft standards (prEN) which are circulated to each member state for a fixed period of public comment, during which industry and other interested parties must express their opinions on the details of the standard. Comments from all member states are fed back to the CEN TC who work to achieve a consensus document which takes into account as many of the expressed views as possible. This is always a difficult task as the views expressed by different member states will often be conflicting. If necessary, such as when the changes made are very substantial the revised document is circulated for a second period of public comment.

Once consensus is reached the text of the document is issued as a European EN Standard. The standards body in each member state such as BSI then publish the document in their own national language, with all those produced by BSI in English being given the prefix BS EN.

## What is a Harmonised Standard?

The harmonisation process requires the CEN Technical Committee to create a raft of interlinked Product and Test standards, but in terms of Construction Products it is mandated to produce a single Harmonised Standard for each defined type of construction product. Such as: EN.13986 for Wood Based Panels or EN.14081 for Structural Timber. These Harmonised Standards list the essential requirements for the product type and provide a reference to the other European standards which further define the product attributes and the methods by which they shall be tested.

Once the Harmonised Standard for a particular type of product is published then all national standards relating to the same product type must be withdrawn within a specified time frame, normally one year. At the end of this period compliance with the harmonised standard becomes the minimum requirement in order to place this type of product on the EU market. The normal means by which to demonstrate a product complies with the requirements of the harmonised standard is by application of a CE Mark.

## What is CE Marking?

Products which follow the test methods and meet the requirements defined in the Harmonised Standard are entitled to carry a CE Mark. The full CE mark consists of the letters CE plus a list of performance criteria showing how the product reacted when subjected to the test methods defined in the Harmonised Standard. This full information may be marked on the product itself, the product packaging, the documentation accompanying the product or divided between the three locations. Application of a CE mark entitles a product to be placed on the construction products market of any EU member state. However, it is vital to understand that allowing a product to be made available for sale is NOT the same as confirming the product is suitable for a particular construction end use. If the Supplier wants to make such additional claims, they may do so BUT

CE MARKING OFFERS NO SUPPORT OR GUARANTEE THAT SUCH ADDITIONAL PRODUCT CLAIMS ARE VALID. IT IS THE SUPPLIERS' RESPONSIBILITY TO PROVIDE EVIDENCE TO SUPPORT SUCH CLAIMS AND THE BUYERS' RESPONSIBILITY TO READ THE SMALL PRINT AND ENSURE THEY ARE SATISFIED THE EVIDENCE SUPPORTS THE CLAIM.

## Is it compulsory for a product to carry a CE Mark?

Compliance with the requirements of the harmonised standard is compulsory in all EU member states, and the simplest way to demonstrate compliance is via CE Marking. However the UK has for the present time chosen not to make CE Marking the compulsory means by which to demonstrate compliance. For instance a UK company could choose instead to obtain a BBA certificate, which is a well recognised document, as the means to demonstrate compliance with the harmonised standard.

## Is it compulsory to use published standards?

Responsible Suppliers should always investigate whether a published standard exists for the product type and if so why would they choose not to meet the requirements of that standard?

## Which Standard should I use?

There is normally one standard setting out the main requirements for a particular type of product, and where necessary this will point users towards other applicable documents such as test and measurement standards and reference documents such as Design guides or Codes of Practice.

The following pages provide brief information about these primary standards and their main supporting documents, However they are not intended to be fully exhaustive explanations and therefore can not replace the purchase and use of EN or BS standards. The standards are listed numerically for ease of use, however, if you wish to search for a specific type of standard, you can do so by imputing a key word into the "Find" facility. Simply click on "Edit" at the top of the document followed by "Find" and then type in your key word(s) and then click "Next". The find wizard will then highlight your key word(s) if they exist within the text.

The TTF Guides to British and European Standards will be updated regularly and are available for members to download at [www.ttf.co.uk](http://www.ttf.co.uk). However, please let us know if you have any suggestions on how we could improve this guide or if you feel any standards should be added.

Standard	Title	Description
EN 335 - 1 2006	Durability of wood and wood-based products. Definitions of use classes. General	This standard defines the five "use classes" which represent the different service situations to which wood and wood-based products can be exposed: 1) Dry; 2) Humid; 3) Exterior; 4) Fresh water; 5) Marine. This Standard replaces the 1992 version in which the five use classes were defined as "hazard" classes.
EN 335 - 2 2006	Durability of wood and wood-based products. Definition of use classes. Application to solid wood	This standard gives guidance on the application of the use class system, as defined in part 1 of EN 335, to solid wood in relation to the biological agencies that can attack solid wood and result in deterioration. Informative Annex A provides additional guidance on the use and suitability of solid wood, sawn or preservative treated within a given hazard class.
EN 336 - 2003	Structural timber. Sizes, permitted deviations	This standard contains a National Annex which gives an informative list of tables of target sizes and tolerance classes for structural timber commonly available in the UK. Under the TTF Softwood Code of practice, in instances where no contractual reference is made to any specified standard, or specific agreement between two parties, the dimensional tolerances of the product will be as per EN 336.  The standard specifies two classes of permitted deviations from target sizes for structural timber of softwood and hardwood species. 20% moisture content is used as a reference point for the measurement of sizes, and average values for changes in size due to changes in moisture content are given. It is applicable to sawn and prepared timber in the range 22mm to 300mm.

Standard	Title	Description
EN 338 - 2003	STRUCTURAL TIMBER Strength Classes	This standard provides for a number of strength classes, each designated by a number indicating the value of bending strength in newtons per square millimetre, e.g. C16, C18, C24 etc for softwood and D 30, D40, D50 etc for hardwood. The characteristic values of strength, stiffness and density for strength classes are given in a table. An informative annex lists the equations used to determine the characteristic values in the table. It gives the rules for the allocation of timber populations (i.e. combinations of species, source and grade) to the classes.
EN 350 - 1 1994	Durability of Wood and Wood-based Products – Natural Durability Of Solid Wood: Guide To The Principles Of Testing And Classification Of The Natural Durability Of Wood	This part of EN 350 gives guidance on methods for the determination of the natural durability of untreated solid wood to attack by wood-destroying organisms. It lists the five classes of natural durability of wood: 1) Very durable; 2) Durable; 3) Moderately durable; 4) Slightly durable; 5) Not durable. It also gives the principles of classification of the wood species based on the results of these test methods.
EN 350 - 2 1994	Durability of Wood and Wood-based Products – Natural Durability Of Solid Wood: Guide To Natural Durability And Treatability Of Selected Wood Species Of Importance In Europe	This European standard lists tables showing the Natural Durability of Softwood and Hardwood Species along with information about how amenable they are to preservative treatment. Refer to DD CEN/TS 1099 for specific guidance on plywood.
EN 384 - 2004	STRUCTURAL TIMBER Determination Of Characteristic Values Of Mechanical Properties And Density	This European standard gives a method for determining characteristic values of mechanical properties and density, for defined populations of timber of visual and/or mechanical strength grades. A method is also given for checking the strength of a timber sample against its designated value. The values determined in accordance with this standard for mechanical properties and density are suitable for assigning grades and species to the strength classes of EN 338.
EN 385 - 2001	Finger jointed structural timber. Performance requirements and minimum production requirements	This European standard specifies the requirements for bonded finger-joints and minimum requirements for the manufacture of cut, interlocking, bonded finger joints in structural timber members of the same species (coniferous or broad-leaved species). It provides requirements for timber, adhesive, moisture content, cutting, and bonding. NOTE: This standard is elaborated as a supporting standard for a harmonised standard on structural timber with finger joints (EN 15497) to be published in the future.

Standard	Title	Description
EN 942 - 2007	Timber in joinery. General requirements	This European standard specifies the general requirements including in particular the grading and classification by appearance quality of timber in joinery products or individual joinery parts. It lists seven appearance classes (J2, J5, J10, J20, J30, J40, J50) according to set limits for each feature (spiral grain, slope of grain, knots, resin pockets etc). These limits shall not be exceeded when a specific class is specified. The standard includes an informative National Annex which gives guidance on some species of softwood and hardwood and their suitability for use in joinery.
BS 1186 - 2 1988	TIMBER FOR AND WORKMANSHIP IN JOINERY: Specification For Workmanship	This part of the British Standard provides a specification and recommendation useful for most requirements of joinery workmanship such as forming joints (fixed, finger jointed, and edge jointed etc), laminating and application of adhesives. This part of BS 1186 does not apply to wood trim.
BS 1186 - 3 1990	TIMBER FOR AND WORKMANSHIP IN JOINERY: Specification For Wood Trim And Its Fixing	This part of BS 1186 specifies requirements for the timber species, moisture content, classification, quality, and workmanship involved in fixing and end trimming solid wood trim profiles or of laminated, finger jointed and edge jointed wood trim. It lists four joinery quality classes (CSH, Class1, Class 2, and Class 3) and a method of classification based on limits of knots and other defects. Several appendices give information and recommendations on the specifying of timber for wood trim, moisture content, typical profiles, suitable species of softwood and hardwood, and making good at the time of decoration.
BS 1282 - 1999	WOOD PRESERVATIVES Guidance On Choice, Use And Application	This British standard provides an overview of wood preservation and the factors for consideration in the selection, and application of appropriate wood preservatives and in the use and disposal of preservative-treated timber. It also references the many British and European standards relating to specific aspects of wood preservation such as wood preservation vocabulary, types of preservatives, wood durability, and use classes of wood.
BS 1297 - 1987	SPECIFICATION FOR TONGUED AND GROOVED SOFTWOOD FLOORING	This British Standard specifies a range of species, characteristics, and manufacturing and moisture content requirements for tongued and grooved softwood flooring. Annex A describes a method of knot measurement.
EN 1309 - 1 1997	ROUND AND SAWN TIMBER Method Of Measurement Of Dimensions: Sawn Timber	This European Standard specifies the methods of measuring dimensions of sawn hardwood and softwood. It does not apply to tropical timber.

Standard	Title	Description
EN 1312 - 1997	ROUND AND SAWN TIMBER Determination Of The Batch Volume Of Sawn Timber	This European standard specifies the rules for the determination of the batch volume of sawn softwood or hardwood.
EN 1313 - 1 1997	ROUND AND SAWN TIMBER Permitted Deviations And Preferred Sizes	This European standard specifies the permitted deviations for thicknesses and widths of non-structural sawn softwood at a reference moisture content of 20% and adjustments for changes in size due to changes in moisture content. Table 1 lists preferred sizes for thicknesses of 38mm and over. The Informative Annex A6 lists additional preferred sizes in the UK.
EN 1611 - 1 2000	SAWN TIMBER Appearance Grading Of Softwoods: European spruces, firs, pines, Douglas fir and larches	This European Standard defines visual appearance grades for dry and green non-structural sawn European spruces, firs, pines, Douglas fir and larches. The standard gives two grading procedures; G2 (Knots on two faces and other features such as wane) and G4 (Knots on two faces and two edges and other features such as wane). Grades for both procedures range from 0 (best) to 4 (most defects), e.g. G2-0, G4-0, G2-1, G4-1 etc. This standard is intended to replace the Nordic Green Book grading unsorted (U/S), fifths (V) and sixths (VI) etc.
EN 1912 - 2004	STRUCTURAL TIMBER Strength Classes Assignment of visual grades and species	This European Standard lists a comparison of Strength Classes of different hardwood and softwood species from EN 338 (C18, D50 etc) to the Visual Strength Grades from different countries (SS, GS, HS, TH2 etc). If designing to BS 5268 the grade/species assignments given in EN 1912 that are not given in BS 5268-2 are recommended to be used in the UK if they also have quality control by a certification body approved by the UK Timber Grading Committee. EN 1912 and EN 338 are referenced in EN 14081, the harmonised standard for rectangular structural timber.
BS 2482 - 1981	SPECIFICATION FOR TIMBER SCAFFOLD BOARDS	This British Standard specifies requirements for scaffold boards made of sawn softwood. It specifies a single grade 'M' or 'V' denoting machine or visual grade, timber quality is stipulated for boards of 225 mm width and thicknesses of 38 mm, 50 mm and 63 mm. For the purposes of this standard, the surface measurement method for the assessment of knots has been retained. Measurements of characteristics other than knots should be in accordance with BS 4978. A series of annexes cover criteria for assessing stress grading machines measuring modulus of elasticity of timber in bending as a plank, machine calibration requirements, list of recommended competent authorities, method of test for determination of the bending strength of scaffold boards, and performance characteristics of scaffold boards.

Standard	Title	Description
BS 4978 – 2007	VISUAL STRENGTH GRADING OF SOFTWOOD. SPECIFICATION	<p>This British standard specifies a method of strength grading softwood visually for structural use. The permissible limits of characteristics for two visual strength grades of softwood, General Structural (GS) and Special Structural (SS) are specified. This edition of BS 4978 complies with the requirements of EN 14081-1:2005 Annex A. The standard specifies ways of assessing the quality of softwood for which design values are given in BS 5268-2 and characteristic values are given in EN 338. The assignments to those strength classes of grade/species combinations defined in this standard are given in EN 1912. Annex A specifies the method to be used for the determination of knot area ratio in cases of dispute, and Annex B specifies the minimum requirements for the control and supervision of visual strength grading operations.</p>
BS 5268 – 2 2002	<p>STRUCTURAL USE OF TIMBER. Code of practice for permissible stress design, materials and workmanship.</p>	<p>BS 5268-2 is a design standard which provides guidance on the structural use of hardwood and softwood, glued laminated timber, plywood and other panel products in load-bearing members. It gives structural performance data for the specific types of timber and panel products listed in the appropriate tables so that designers can more easily choose which products to specify for a particular application. Claims that structural plywood is equivalent to those listed in BS 5268, part 2 means that structural properties have been tested in the same way. However, the supplier must still provide the actual third-party results of structural testing performed on these products.</p>
EN 14081 – 1 2005	<p>TIMBER STRUCTURES Strength Graded Structural Timber With Rectangular Cross-Section: General Requirements</p>	<p>This European Harmonised Standard specifies the requirements for visual and machine graded structural timber with rectangular cross-sections and target size corresponding to EN 336.</p> <p>It covers preservative treated or untreated timber. The standard replaces EN 518 and EN 519. This standard does not cover fire retardant treated products or finger jointed timber. There are a number of annexes: Normative Annex A gives the requirements for strength reducing characteristics for visual grading standards such as knots, slope of grain, wane and warp. Informative Annex B gives marking codes for single species. Normative Annex C gives Reaction to fire: Euroclass without the need for further testing. Informative Annex ZA lists the clauses that address the provisions of the EU Construction Products Directive such as the procedure for attestation of conformity and CE marking requirements.</p>

Standard	Title	Description
EN 14081 - 2 2005	TIMBER STRUCTURES Strength Graded Structural Timber With Rectangular Cross-Section: Machine Grading Additional Requirement For Initial Type Testing	This part of the European Standard specifies requirements, additional to those in EN 14081-1, for initial type testing of machine graded structural timber. This includes requirements for strength grading machines and test equipment for proof loading graded material, and operational requirements for control planks to test the dynamic performance of grading machines. It supersedes EN 518 & EN 519.
EN 14081 - 3 2005	TIMBER STRUCTURES Strength Graded Structural Timber With Rectangular Cross-Section: Machine Grading Additional Requirement For Factory Production Control	This part of the European Standard specifies, in addition to those given in EN 14081-1, for factory production control (FPC) of machine graded structural timber. It includes requirements for the operation, calibration and maintenance of machine controlled and output controlled grading machine systems. It replaces EN 518 and EN 519.
EN 14081 - 4 2005	TIMBER STRUCTURES Strength Graded Structural Timber With Rectangular Cross-Section: grading machine settings for machine controlled systems	This part of the European Standard contains machine setting data, derived according to the requirements of EN 14081-2, for various combinations of strength classes or grades, grading machines and different species. If Machine Type / Species / Origin / Grade combination is not listed it cannot be graded. This standard is regularly revised to include new combinations and applications should be made to the appropriate CEN committee.
EN 14298 - 2004	SAWN TIMBER Assessment Of Drying Quality	This European Standard defines a method of assessment of drying quality for sawn or planed timber. It applies to both softwood and hardwood with a thickness not greater than 100mm. The quality of drying is expressed in terms of target and average moisture content of the 'lot' as well as defining the moisture content variation between individual pieces expressed as allowable upper and lower limits. An option for specifying the degree of case-hardening is included.
EN 14342 - 2008	WOOD FLOORING Characteristics, Evaluation Of Conformity And Marking	This European Standard defines and specifies for wood, wood veneer, and parquet flooring the relevant characteristic and appropriate test methods to determine these characteristics for internal use as flooring. The standard provides scope and relevant characteristics for addressing the provisions of the EU Construction Products Directive. CE Marking is the best way of demonstrating compliance with the Construction Products Directive. In September 2008 Amendment A1:2008 was published which now includes flooring that is treated for improved fire performance.

## Standard

EN 14915 - 2006

## Title

Solid wood panelling and cladding. Characteristics, evaluation of conformity and marking

## Description

This European standard defines and specifies the relevant characteristics and the appropriate test methods to determine these characteristics for products (including sidings) used in solid wood panelling and cladding for internal and external uses. It does not cover products which are produced from laminated layer section. The standard provides scope and relevant characteristics for addressing the provisions of the EU Construction Products Directive. CE Marking is the best way of demonstrating compliance with the Construction Products Directive.