

Glossary of

**Building and civil
engineering terms**

Part 4. Forest products

**Section 4.1 Characteristics and
properties of timber and wood based
panel products**

Glossaire de la construction et des travaux
publics
Partie 4. Produits forestiers
Section 4.1 Caractéristiques et propriétés du
bois et des panneaux en bois

Begriffe für den Hoch- und Tiefbau
Teil 4. Holzzeugnisse
Abschnitt 4.1 Merkmale und Eigenschaften
von Holz und von Tafelungsplatten aus Holz

Foreword

This Section of Part 4 of BS 6100 has been prepared under the direction of Technical Committee B/500, Basic data, and supersedes BS 6100 Section 4.1 : 1984, which is withdrawn.

This edition introduces technical changes but it does not reflect a full review or revision of the standard, which will be undertaken in due course.

Terms included in this Section refer primarily to timber but can also apply to wood based panel products; where this is so, it is clearly stated in the definition. Terms applying solely to wood based panel products will be included in Section 4.3.

This Section also contains certain terms dealing with wood preservation considered as being basic to construction. For further, more detailed terms, users are referred to BS 4261 *Glossary of terms relating to timber preservation*.

A general introduction to the explanation of this glossary is given in Part 0 of this standard which itemizes the Parts, Sections and Subsections into which the glossary is divided and provides a general alphabetical index of all the terms in the Sections and Subsections already published. Those using individual Sections and Subsections of this glossary are urged to consult Part 0 when doing so.

The other Sections of this Part are as follows.

4.2 *Sizes and quantities*

4.3 *Wood based panel products*

4.4 *Carpentry and joinery*

4.5 *Cork*

Terms are listed alphabetically in the index and are referred to by numbers which are found against the term in the body of the Section. There they are arranged in a classified order, each term having an individual number consisting of seven digits in two parts, the first of three digits, the second of four. The first three digits represent the number of the Part, Section and Subsection (in this case, the third digit is 0 as there is no division into Subsections). The fourth digit represents the group of terms, the fifth digit represents the subgroup of terms and the last two digits represent the place within the subgroup.

Alternative terms are given below the preferred term with their status indicated, e.g. 'deprecated', 'non-preferred'. These terms are not individually numbered, but are included in the index with a reference to the preferred term. Terms of more than one word, e.g. 'round knot', are written in a direct style, not as 'knot, round'. The inverted term is included in the index with a reference to the direct term. Scientific terms in Latin are printed in small capitals and are also included in the index with a reference to the term whose definition contains the Latin words.

Italicized words indicate terms that are defined elsewhere in this Section.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

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No.	Term	Definition
410 1 Base terms		
410 1001	timber	Wood in the form of standing or felled trees, or the product of these after <i>conversion</i> . NOTE. Does not include <i>wood based panel products</i> .
410 1002	wood based panel product	Manufactured panel, board or sheet made from <i>veneers</i> , <i>wood particles</i> or <i>wood fibres</i> .
410 1003	standing timber	Standing trees suitable for <i>conversion</i> .
410 1004	bled timber	<i>Timber</i> from trees that have been tapped for resin or other exudations.
410 1005	round timber timber in the round <i>deprecated</i>	Felled trees that have been trimmed.
410 1006	butt	Base of the trunk of a tree or the thicker end of a branch or <i>log</i> .
410 1007	hardwood	Wood of trees of the botanical group DICOTYLEDONAE.
410 1008	softwood	Wood of trees of the botanical group GYMNOSPERMS. NOTE. Commercial <i>timbers</i> of this group are practically confined to the class CONIFERAE (conifers).
410 1009	sound timber	<i>Timber</i> free from <i>rot</i> , <i>timber infection</i> or <i>timber infestation</i> .
410 1010	green timber	<i>Timber</i> , freshly felled, or still containing original <i>free moisture</i> .
410 1011	bright timber	<i>Timber</i> free from discoloration.
410 1012	clean timber	<i>Timber</i> free from <i>knots</i> .
410 1013	clear timber	<i>Timber</i> free from visible <i>defects</i> and <i>imperfections</i> .
410 1014	imperfection	<i>Feature</i> that mars appearance or lowers quality.
410 1015	blemish	<i>Imperfection</i> that mars appearance but does not lower quality.
410 1016	defect	<i>Imperfection</i> that lowers quality and may mar appearance.
410 1017	durability of timber	Resistance of <i>timber</i> to destruction by <i>wood destroying organisms</i> . NOTE. For categories of durability of <i>heartwood</i> with respect to <i>fungi</i> see the table in BRE Technical Note No. 40 ^[1] .
410 1018	strength of timber	Mechanical properties of <i>timber</i> . NOTE. In practice, the name of the property under consideration is stated, e.g. strength in compression parallel to the <i>grain</i> ; strength in bending.
410 1019	structural timber	<i>Timber</i> used in framing and loadbearing structures where strength is the major factor in its selection and use.

No.	Term	Definition
410 1020	grade	Established classification of <i>timber</i> and <i>wood based panel products</i> according to quality or performance.
410 1021	brack	To sort <i>timber</i> into established <i>grades</i> according to quality.
410 1022	reject	Material or product not accepted because it does not meet the specification.
410 1023	dunnage	<i>Timber</i> and <i>wood based panel products</i> , usually of poor quality, used for supporting cargo in ships, or stacks of <i>timber</i> or other material in storage.
410 1024	wrack	Low quality <i>softwood</i> .
410 1025	edge	Either of the narrower longitudinal opposite surfaces of <i>timber</i> .
410 1026	face	Either of the wider longitudinal opposite surfaces of <i>timber</i> or any longitudinal surface if the <i>timber</i> is of square <i>cross section</i> (see figure 1).
410 1027	better face	<i>Face</i> that, using a particular grading rule, is judged to be superior to the other <i>face</i> .
410 1028	face measure	Area measurement of one <i>face</i> of a piece of <i>timber</i> .
410 1029	side	Longitudinal surface of square <i>sawn timber</i> .
410 1030	arris	Sharp external angle formed by the meeting of two surfaces of a piece (see figure 1).
410 1031	timber cross section	Section at right angles to the longitudinal axis of a <i>log</i> or a piece.
410 1032	radial section	Lengthwise (longitudinal) section in a plane that passes through the <i>pith</i> , i.e. along the radius of a stem.
410 1033	tangential section	Lengthwise (longitudinal) section in a plane tangential to a <i>growth ring</i> , i.e. at right angles to the radius.
410 1034	outside face	<i>Face</i> cut furthest from the <i>pith</i> of the <i>log</i> .
410 1035	inside face	<i>Face</i> cut nearest to the <i>pith</i> of the <i>log</i> .
410 1036	worse face	<i>Face</i> that, using a particular grading rule, is judged to be inferior to the other <i>face</i> .
410 1037	feature	Physical, morphological or growth characteristics of <i>timber</i> or of <i>wood products</i> .

410 2 Anatomical

410 2001	wood	<i>Lignocellulosic substance</i> of which trees and shrubs are largely composed, excluding <i>pith</i> and <i>bark</i> .
410 2002	bark	Outer covering of the trunk and branches, surrounding the woody stem of a tree.

No.	Term	Definition
410 2003	cambium	Actively dividing layer of cells between <i>wood</i> and <i>bark</i> . Usually only apparent in freshly felled <i>timber</i> as a thin moist layer under the <i>bark</i> .
410 2004	pith heart centre <i>deprecated</i>	Central core of the stem of a tree or shrub that consists chiefly of parenchyma or soft tissue (see figure 2).
410 2005	heartwood	Inner zone of <i>wood</i> that, in a growing tree, has ceased to contain living <i>cells</i> and reserve materials (e.g. starch). Not to be confused with <i>heart</i> . NOTE. In commercial practice it is usual to restrict the term to the darker coloured <i>wood</i> that is visually distinct from the <i>sapwood</i> (see figure 2).
410 2006	sapwood sap <i>deprecated</i>	Outer zone of <i>wood</i> that, in a growing tree, contains living <i>cells</i> and reserve materials (e.g. starch), generally lighter in colour than <i>heartwood</i> though not always clearly differentiated (see figure 2).
410 2007	bright sapwood	<i>Sapwood</i> of natural colour.
410 2008	lignocellulosic substance	Basic chemical composition of the woody tissue of plants.
410 2009	cell	One of the small, often microscopic, units that make up the structure of <i>wood</i> and other plant tissues.
410 2010	fibre	Long narrow <i>cell</i> or bundles of <i>cells</i> of which <i>wood</i> and certain other plant tissues are largely composed. NOTE. Botanically, the term is used in a more restricted sense for a specialized type of hardwood <i>cell</i> that has a support function only.
410 2011	pore	Principal vascular or water conducting <i>cell</i> of <i>hardwoods</i> as seen on the end <i>grain</i> .
410 2012	ray medullary ray <i>deprecated</i>	Strip or ribbon of tissue extending radially in the stem. NOTE. May be microscopic or large enough to be visible to the naked eye, e.g. the characteristic silver <i>grain</i> in oak (see figure 3).
410 2013	diffuse-porous wood	<i>Wood</i> in which the <i>pores</i> are of fairly uniform or only gradually changing size and distribution throughout a <i>growth ring</i> .
410 2014	ring-porous wood	<i>Wood</i> in which the <i>pores</i> of <i>early wood</i> are distinctly larger than those of <i>late wood</i> and form a well-defined zone or ring.
410 2015	exposed pith	<i>Pith</i> that is visible on a <i>face</i> or <i>edge</i> .

410 3 Growth characteristics

410 3001	growth ring	Layer of <i>wood</i> produced in one growing season.
410 3002	annual ring	<i>Growth ring</i> corresponding to an annual period of growth (see figures 3 and 4).
410 3003	rate of growth	Growth expressed as the number of <i>growth rings</i> per 25 mm measured radially on the <i>end grain</i> of a <i>log</i> or piece of <i>converted timber</i> .

No.	Term	Definition
410 3004	narrow-ringed timber close grown <i>deprecated</i> fine grown <i>deprecated</i> slow grown <i>deprecated</i>	<i>Timber</i> having comparatively narrow <i>growth rings</i> (see figure 2). NOTE. This may be a characteristic of the species or of growing conditions.
410 3005	wide-ringed timber coarse grown <i>deprecated</i> open grown <i>deprecated</i> fast grown <i>deprecated</i>	<i>Timber</i> having comparatively wide <i>growth rings</i> (see figure 2). NOTE. This may be a characteristic of the species or of growing conditions.
410 3006	early wood spring wood <i>deprecated</i>	Less dense <i>wood</i> formed during the earlier stages of the growth of each <i>growth ring</i> (see figures 2, 3 and 4).
410 3007	late wood autumn wood <i>deprecated</i> summer wood <i>deprecated</i>	Denser <i>wood</i> formed during the later stages of growth of each <i>growth ring</i> (see figures 2, 3 and 4).

410 4 Appearance

410 41 Grain

410 4101	grain	General direction or arrangement of <i>fibres</i> .
410 4102	straight grain	<i>Grain</i> that is straight and parallel or nearly parallel to the longitudinal axis of the piece.
410 4103	cross grain	<i>Grain</i> deviating considerably from the general direction of the longitudinal axis, forming an angle with the edge of a piece. NOTE. The term covers <i>sloping grain</i> , <i>spiral grain</i> and other deviations from <i>straight grain</i> .
410 4104	short grain	<i>Grain</i> deviating considerably from the general direction of the longitudinal axis, forming a relatively sharp angle with the <i>face</i> of a piece.
410 4105	irregular grain	<i>Grain</i> that is not straight because of abnormal structure of the <i>wood</i> .
410 4106	sloping grain diagonal grain <i>deprecated</i>	<i>Grain</i> that is at an angle to the longitudinal axis of the piece because of the method of <i>conversion</i> . NOTE. May present a similar appearance to <i>spiral grain</i> .
410 4107	end grain	<i>Grain</i> in which the general direction of the <i>fibres</i> is at right angles to the surface.
410 4108	side grain	Surface approximately parallel to the <i>grain</i> .
410 4109	curly grain	<i>Grain</i> occurring in irregular curves.
410 4110	spiral grain	<i>Grain</i> that follows a spiral course in one direction around a <i>log</i> .
410 4111	wavy grain	<i>Grain</i> in fairly uniform waves or ripples.
410 4112	interlocked grain	<i>Grain</i> in which <i>cells</i> in succeeding growth periods incline alternately in opposite directions that are different from that of the axis of the tree.

No.	Term	Definition
410 4113	raised grain	Rough or uneven surface, due to either <i>early wood</i> or <i>late wood</i> projecting above the general level of the surface.
410 4114	slope of grain	Angle between the direction of the <i>grain</i> and the axis of a piece. NOTE. Usually expressed as a tangent ratio, e.g. 1 in 6, 1 in 10, etc.

410 42 Texture

410 4201	texture of wood	Structural character of <i>wood</i> as revealed by touch or reaction to cutting tools, largely determined by distribution and size of the various <i>cells</i> .
410 4202	coarse texture	<i>Texture</i> with relatively large <i>cells</i> or usually wide <i>growth rings</i> for the species.
410 4203	fine texture close texture <i>deprecated</i>	<i>Texture</i> with relatively small <i>cells</i> .
410 4204	even texture	<i>Texture</i> with little variation in size of <i>cells</i> and little contrast between <i>early wood</i> and <i>late wood</i> .
410 4205	uneven texture	<i>Texture</i> with considerable variation in size of <i>cells</i> or distinct contrast between <i>early wood</i> and <i>late wood</i> .

410 43 Figure

410 4301	figure	Ornamental markings, seen on a cut surface of <i>timber</i> , formed by the structural features of the <i>wood</i> .
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410 5 Knots

410 5001	knot	Portion of a branch embedded in the <i>wood</i> .
410 5002	sound knot	<i>Knot</i> free from <i>rot</i> , solid across its <i>face</i> and at least as hard as the surrounding <i>wood</i> .
410 5003	unsound knot rotten knot <i>deprecated</i>	<i>Knot</i> not solid across its <i>face</i> or softer than the surrounding wood due to <i>rot</i> or other <i>defects</i> .
410 5004	tight knot	<i>Knot</i> held firmly in place.
410 5005	dead knot	<i>Knot</i> having <i>fibres</i> intergrown with those of the surrounding <i>wood</i> to the extent of approximately 25 % or less of the cross-sectional perimeter.
410 5006	loose knot	<i>Dead knot</i> that is not held firmly in place.
410 5007	encased knot bark ringed knot <i>non-preferred</i>	<i>Knot</i> wholly or partially surrounded with <i>bark</i> or resin.

No.	Term	Definition
410 5008	arris knot	<i>Knot that emerges on an arris, other than a splay knot (see figure 5).</i>
410 5009	splay knot	<i>Knot cut more or less parallel to its axis so that the exposed section is elongated and emerges on an arris (see figure 6).</i>
410 5010	face knot	<i>Knot exposed on a face, other than an arris knot or a splay knot or a spike knot (see figure 7).</i>
410 5011	edge knot	<i>Knot exposed on an edge, other than an arris knot or a splay knot or a spike knot (see figure 7).</i>
410 5012	margin knot	<i>Knot appearing on a face, outside the middle half of the depth of face, near to or breaking through an arris (see figure 8).</i>
410 5013	oval knot	<i>Knot cut more or less at right angles to its long axis so that the exposed section is essentially oval.</i>
410 5014	round knot	<i>Knot cut more or less at right angles to its long axis so that the exposed section is essentially circular.</i>
410 5015	branched knot winged knot <i>deprecated</i>	Two or more <i>knots</i> branching from a common axis.
410 5016	intergrown knot live knot <i>non-preferred</i>	<i>Knot having fibres intergrown with those of the surrounding wood to the extent of approximately 75 % or more of the cross-sectional perimeter.</i> NOTE. Knot formed from the base of a live actively growing branch is normally completely intergrown.
410 5017	knot cluster	Group of <i>knots</i> around which the <i>fibres</i> are deflected.
410 5018	knot hole	Hole caused by the removal of a <i>knot</i> .
410 5019	spike knot	<i>Knot cut more or less parallel to its axis so that the exposed section is elongated but does not emerge on an arris.</i>

410 6 Conversion and machining

410 6001	log	Crosscut length of <i>round timber</i> with or without <i>bark</i> .
410 6002	boule	<i>Log cut longitudinally by successive parallel cuts, the resultant unedged timber then reassembled into the original log form with or without the slabs.</i>
410 6003	butt length butt log <i>deprecated</i>	Lowest <i>log</i> from a tree, i.e. the one next to the stump.
410 6004	second length	<i>Log cut from the trunk of a tree above the butt length.</i>
410 6005	top log	Uppermost <i>log</i> from the trunk of a tree.
410 6006	peeler log	<i>Log suitable for manufacture of rotary cut veneer.</i>
410 6007	squared log	<i>Log sawn or hewn on four faces to a square or rectangular cross section with or without wane.</i>

No.	Term	Definition
410 6008	flitch	Large piece of a <i>log</i> , sawn or hewn, waney, bevel edged or <i>square edged</i> , suitable for further <i>conversion</i> .
410 6009	float	<i>Logs</i> fastened together to form a raft, for storage in water.
410 6010	heart	Portion of a <i>log</i> that includes the <i>pith</i> and the associated defective wood.
410 6011	lumber	Imported square edged, sawn <i>hardwood</i> of random width. NOTE. Sometimes also applied to softwoods of North American origin.
410 6012	conversion	Process of sawing <i>logs</i> .
410 6013	through-and-through sawing	Method of converting <i>logs</i> by parallel cuts in the general direction of the <i>grain</i> .
410 6014	cross cutting	Cutting of <i>timber</i> across the <i>grain</i> .
410 6015	converted timber	<i>Timber</i> sawn from a <i>log</i> .
410 6016	resawing	Sawing of <i>converted timber</i> into smaller cross sections.
410 6017	deep cutting <i>deeping deprecated</i>	<i>Resawing</i> of <i>timber</i> lengthwise parallel to the <i>faces</i> .
410 6018	flat cutting <i>flatting deprecated</i> <i>ripping deprecated</i> <i>rip-sawing deprecated</i>	<i>Resawing</i> of <i>timber</i> lengthwise parallel to the <i>edges</i> .
410 6019	machined timber	<i>Timber</i> having a surface or a dimension that has been subject to machine operation after initial <i>conversion</i> .
410 6020	hewn timber	<i>Timber</i> , with or without <i>wane</i> , finished to size by axe or adze; the <i>ends</i> are sometimes sawn.
410 6021	sawn timber	Solid wood product that results from the lengthwise sawing or chipping of <i>timber</i> .
410 6022	mill run	<i>Sawn timber</i> produced in a mill without reference to <i>grade</i> .
410 6023	plain-sawn timber <i>flat grain timber deprecated</i> <i>flat sawn timber deprecated</i> <i>slash grain timber deprecated</i>	<i>Timber</i> converted so that the <i>growth rings</i> meet the <i>face</i> in any part at an angle of less than 45° (see figure 9).
410 6024	quarter sawn timber <i>edge grain timber non-preferred</i> <i>comb grain timber deprecated</i> <i>rift-sawn timber deprecated</i> <i>vertical grain timber deprecated</i>	<i>Timber</i> converted so that the <i>growth rings</i> meet the <i>face</i> at an angle of more than 45° (see figure 10).

No.	Term	Definition
410 6025	quartered log	<i>Log</i> sawn or split into four parts along two diameters roughly at right angles.
410 6026	square	Piece of <i>timber</i> sawn so as to be square in cross section.
410 6027	taper sawn log	<i>Log</i> sawn parallel to the <i>bark</i> rather than parallel to the longitudinal axis or <i>pith</i> .
410 6028	unedged timber waney-edged timber <i>deprecated</i>	<i>Sawn timber</i> with parallel faces and with one or both edges left unsawn.
410 6029	cutting	Rectangular area of <i>sawn timber</i> completely clear of all <i>defects</i> , other than those permitted in certain <i>grades</i> , that can be obtained by <i>cross cutting</i> or <i>ripping</i> or both.
410 6030	boxed heart	<i>Timber</i> that contains <i>pith</i> but cut so that the <i>pith</i> is not visible on any <i>face</i> or <i>edge</i> .
410 6031	offcut	Piece of <i>timber</i> produced in sawing to a specified size from a larger piece.
410 6032	cleft timber	<i>Timber</i> brought to approximately the required cross section by cleaving along the <i>grain</i> .
410 6033	resawn timber	Pieces of <i>timber</i> of smaller sizes obtained by <i>resawing</i> .
410 6034	eased arris	<i>Arris</i> that has been slightly rounded.
410 6035	eased edge	<i>Edge</i> on which both <i>arris</i> es have been slightly rounded. NOTE. The term 'eased edges' usually applies where all four <i>arris</i> es have been slightly rounded and commonly refers to North American imports.
410 6036	kerf	Groove made by a saw.
410 6037	planed timber	<i>Sawn timber</i> that has been machined for its full length and/or machined on one or more surfaces to specified tolerances at an appropriate <i>moisture content</i> .
410 6038	slab	Exterior portion of a <i>log</i> , removed by a saw in the process of <i>conversion</i> , that has one sawn surface, the other being the outside of the <i>log</i> .
410 6039	wane	Original rounded surface of a <i>log</i> , with or without <i>bark</i> , on any <i>face</i> or <i>edge</i> of <i>sawn timber</i> (see figure 11).
410 6040	veneer	Thin sheet of <i>wood</i> produced by rotary-cutting, slicing or sawing.
410 6041	centre board	Board, usually of <i>hardwood</i> , cut from a <i>heart board</i> so as to be free from <i>heart</i> (see figure 12).
410 6042	heart board	Board, usually of <i>hardwood</i> , that contains <i>heart</i> , from a <i>log</i> converted by <i>through-and-through sawing</i> (see figure 12).
410 6043	side board	Board from the outer portion of a <i>log</i> (see figure 12).