



Timber Frame Business Council
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DEFINITIONS OF COMMON TERMS RELATING TO LOG OR TIMBER FRAME STRUCTURES

AIR DRIED - stacking wood prior to installation to allow air movement to evaporate moisture for a prescribed period of time

ANGLE BRACE – a structural component, on a slope, used to secure other parts of the structure. May be permanent or temporary.

APEX – the highest point as in the peak of a roof; considered as the point at which an angled line meets the centerline of a round log.

BACKER-ROD – a length of extruded polyethylene rod used for chinking joints. Used as a bond breaker and backing material for additional caulking or chinking material.

BARGE BOARD (BARGE RAFTER) – ornamental or protective board located in the soffit of the gable end.

BASEROUND (BASECOURSE) – the first course of logs in a wall resting on the foundation or subfloor.

BAY – The space between two timber frame bents.

BEAM – a principal horizontal structural member, used to carry vertical loads.

BEAM POCKET – a notch in a wall prepared to receive the ends of a beam.

BENT – The structural network of timbers, in a wall or truss, making up one cross sectional part of a timber frame.

BEVEL CUT – an angled or sloping cut made on a board, timber, or log

BLIND MORTISE – a mortise that does not extend completely through the piece.

BLIND NAILING – nailing in such a manner that the nail-head does not show on the finished surface.

BOLT – a threaded metal rod with nuts used to fasten two pieces of wood together.

BORATE (BORAX) – a chemical used for preservation of wood and reduction of sap stain derived from sodium borate.

BOUNDED WATER (ADSORBED, OR HYGROSCOPIC WATER) – water held hygroscopically in the cell wall; water in wood below the saturation point.

BUCK (ROUGH BUCK) – a lumber-framed system used to form the opening for a window or door in a log wall.

BUTT JOINT – a joint made by bring two ends together without overlapping them. The ends are square cut and meet at the cut surface.

CAULKING (SEALANT) – material used to achieve airtight and watertight joinery; sealant that is differentiated from chinking by its smooth, non-textured appearance.

CHECK (ING) – Appears as a crack in the log or timber and occurs as the wood is seasoning; separation of wood cells along the grain as a result of uneven shrinkage (differential tension and compression stresses in the wood structure); a natural and unpredictable result of the seasoning process that generally does not affect the structural integrity of the log or timber.

CHINKING - A synthetic material used to fill the space between logs and consequently weatherproofs the structure.

COLLAR PURFLIN – horizontal, longitudinal beams that support collar ties.

COLLAR TIE (TIE LOG) – a horizontal log or timber between 2 opposing rafters that prevent sagging and spreading of the roof structure.

COMPRESSION FIT NOTCH – a log notching technique whereby the joint becomes tighter as compressive loads exert force on the notches.



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COMPRESSION SPRINGS – springs used in conjunction with lags, screws, or nails that provide additional pressure on the components being joined.

COPE – a notch cut longitudinally in a log, typically on the underside, which conforms to the contour of the log below

CORBEL – a piece or pieces projecting out from the wall thereby providing support for subsequent layers, such as girders, arches, or similar horizontal components.

COUNTERFLASHING – a flashing which, when applied over the regular flashing, allows for settling of the structure and slippage at the flashing connection, while still maintaining a weatherproof seal.

COURSE OF LOGS (ROUND, LAYER) – One complete layer of logs in the structure's shape; raising the height of the walls by one round of logs.

COVE – a shallow round shaped groove cut into the underside of the log.

CROSS-GRAIN – deviation of grain direction from the longitudinal axis of a piece of wood or from the stem axis in a tree.

CROSS TIE LOG – a horizontal beam spanning the structure and thereby connecting opposite walls and counteracting roof forces exerted on the walls.

DRAW BORING (DRAW-PINNING) – offsetting holes in a mortise and tenon joint, into which a tapered pin is driven.

DRIFT PIN – a pin that is driven into a hole slightly smaller in diameter than the pins diameter.

DRIP CAP – a flashing installed over openings such as doors and windows in order to divert water.

DRIP CUT – typically a cut in the underside of a sill log that prevents water from penetrating the sill connection. Also used on the sill of doors and windows

DRY, DRYING (AIR DRIED, KILN DRIED, SEASONED) – the condition or process defining the moisture content of wood; in lumber grading, having a moisture content of no more than 19%.

EAVE BLOCK (BIRD BLOCKING) – a lumber or timber block that fits between the rafters on top of the plate to prevent birds from entering the roof space, attic, or airway.

EQUILIBRIUM MOISTURE CONTENT (EMC) – the moisture content eventually attained in wood exposed to a given level of relative humidity and temperature.

FIBER SATURATION POINT – the condition of moisture content where cell walls are fully saturated but the cell cavities are empty of free water.

FILLER LOGS – short log pieces used to fill gaps between floor joists/beam/floor, rafters/plate/decking, etc.

FLITCH – a portion of a log sawn on 2 or more faces, commonly on opposite faces, leaving two waney edges. Also known as the upright leg of a metal connector, or in some cases the plate used in a connection that is cut into the center of the joint and thus hidden from view.

FLITCH PLATE (KNIFEPLATE) – a metal plate cut into the center of a log or timber connections, bolted to the components, in order to provide additional shear and tension strength.

FLY RAFTER – the end rafter on a roof overhang, typically on a gable end, that is supported by the ridge, trimmer, and lookout rafters.

GIRDER – a horizontal beam-carrying floor joists.

GIRT – a horizontal timber connecting 2 posts. Traditionally used for attaching vertical sheathing.

GRADING – a process used to determine the volume and quality of logs, lumber, and timbers.

GRAIN (DIRECTION) – The direction of the long axis of the dominant longitudinal cells or fibers in a log, timber, or board.

GREEN (LOGS) – freshly cut and unseasoned wood (logs); having moisture content in excess of 19%.



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GUSSET – the connectors used on truss work that provide strength to the joints. May be plywood, metal, boards, or other materials of equal strength.

GUY WIRE – an anchored cable acting as a brace.

HANDCRAFTED LOG SYSTEMS – the craft of producing a structure from logs.

HEAD – the term used to describe the remaining upper portion of log at a notch. When the notch has been cut into the log, approximately 1/2 way through the cross section of the log, the remaining part (head) protrudes above the intersecting log.

HEADER – the horizontal member that spans over the top of an opening.

HOUSED MORTISE – a recessed mortise where bearing is provided for the entire tenoned member

HYGROSCOPICITY – the ability of a substance to adsorb and desorb water from the air.

KEYWAY – refers to the groove cut in the end grain at the side of a door or window opening. A wood or metal spline (key) is inserted to stabilize the wall sections around the opening.

KILN-DRY WOOD – wood dried to constant weight in an oven maintained at temperatures of 101 to 105 degrees Celsius.

KING POST – as part of a truss, the vertical post that extends from a horizontal member (chord, joist, girt, etc.) to the peak; connected with the principal rafters.

KNEE BRACE – a diagonal brace, typically at a 45-degree angle between a post and a beam.

KNEEWALL (PONY WALL) – a short wall section; typically above the 2nd floor ending with a roof plate. At times used to define the sides of room built within the roof cavity. May also apply to wall section framed on a stepped foundation wall.

KNOT – a portion of a branch overgrown by the expanding girth of the bole or a larger branch; that area of the tree's stem that a branch grows out of; on smooth and planed surfaces appears as a hard round or oval shaped section.

LAP – a place or part where one log crosses over another.

LATHE – in log building a lathe type machine may be used for rough peeling of the bark or in the case of machine-cut logs to shape the log to its finished form.

LOG – A section cut from a tree after it has been felled that is appropriately modified for placement in a wall, floor, or roof assembly. Graded as an unsawn round timber.

LOG FACED SYSTEMS (LOG SIDING) – A wood member or assembly of wood members of any shape or thickness attached to conventionally framed or masonry walls for the purpose of providing an aesthetic and weather-resisting barrier, including but not limited to log siding, half logs and non-load supporting full logs.

LOG WALL – An assembly of individual structural-logs for use as an exterior or interior load bearing wall, shear wall, or non-load bearing wall.

LOG STRUCTURE – A type of construction whose primary structural elements are formed by a system of structural-logs supporting floor and / or roof systems.

LOG-TO-LOG INTERFACE -- The joint formed between logs when stacked or when butted end-to-end (butt joint).

LONGITUDINAL (GRAIN) – parallel to the stem axis of the tree or branches, therefore describing the axial direction of the dominant cell structure; along the grain. (Any plane cut parallel to the grain direction of wood. It may be radial, tangential or an intermediate grain.

MEAN DIAMETER (MID-SPAN DIAMETER) – the diameter of a log at the approximate center in length. Typically determined by measuring the diameter at each end of the log, adding them together and dividing by 2.



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MILDEW (MOLD) – a fungal growth on wood taking place at or near the surface.

MILLED LOG SYSTEMS – Producing a structure with solid wood timbers machined to uniform dimension.

MOISTURE CONTENT – the weight of water in the cell walls and cavities of wood, expressed as a percentage of oven-dry weight.

MOISTURE METER – an instrument used for the determination of moisture content in wood by measuring the resistance to electric current between 2 probes.

MORTISE – a square or rectangular notch, slot, or hole cut into a structure component that will accept a corresponding tenon.

MORTISE AND TENON (M&T) – a joint with a projection (tenon) on one end of a piece is inserted into a notch, slot or hole (mortise) on another piece.

NOTCH – The term refers to the cutting of a log or timber in such a manner that it can accept another log or timber intersecting it at an angle. Types include:

- **BLIND** – a notch that typically extends only halfway into the receiving member;
- **BOXED LAPPED** – a notch with level and square surfaces cut into each piece;
- **DOVETAIL** – a corner notch or joint with sloping surfaces shaped so that it forces the joint together and adds strength. A shaped tenon that fits into a corresponding mortise;
- **HALF DOVETAIL** – a variation of the dovetail notch with only one sloping side;
- **HALF-LAP** – a notch where 1/2 the wood is taken from each piece and the seats are horizontal and the sides are vertical.
- **MITERED LAPPED** – notch that has a 45 degree slope on the sides and a level surfaces on the lap;
- **ROUND** – a rounded semi-circle shape on the underside of the log that exactly fits the contour of the log below;
- **SADDLE** – a V-shaped notch that fits over the shaped surface of the log below. Typically the lower piece is triangular shaped by removing the sapwood from the log
- **SHEEP'S HEAD** – a locking notch with sloping sides cut out of each piece. The locking joint is not seen after the pieces are fit;
- **SQUARE (LOCK, DOUBLE-SCRIBED)** – a notch that has the identical appearance outside as a round or saddle notch, but the interior has a square lap joint accomplished by marking both upper and lower pieces and used for the retention of wood and strength.

OAKUM – hemp fiber matting that is used in log building as an insulating material available as oiled or un-oiled.

OUTRIGGER BEAM – a beam beyond or outside of the exterior wall that becomes the roof plate.

Typically the supports are the overhang or projection of gable and corresponding cross walls.

PEG – a 1" or larger, wooden dowel, typically made of Oak; also P.E.G., or Polyethylene Glycol – used as an immersion bath for wood pieces. The bound water in the cells is replaced with P.E.G. thus allowing the wood to maintain its size and shape without checking or cracking.

PIN – a small peg. TYPES: Drift pin, Shear pin, etc.

PLATE (LOG) – the top wall log, beam, outrigger, etc. that supports the lower end of the roofs diaphragm.

PRE-CUT LOG KIT – typically a machine cut log package wherein the all the logs are cut to length, notched, drilled and packaged ready for assembly. At times the term may also refer to a handcrafted package, when the structure is built off site and then dismantled and transported to the final site.

PURLIN – Horizontal roof beams, typically located between the plate and the ridge. Used to provide mid-span support for the rafters.



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RELATIVE HUMIDITY – the ratio of the amount of water vapor present in the air to that which the air would hold at saturation at the same temperature. Usually expressed as a percent.

SADDLE the shape cut into the head of a log in preparation for notching.

SCARF –the cuts made on the sides of a log, at the location of a notch, as the receiving portion of a Saddle Notch.

SCARF JOINT – a joint made when notching and lapping two timbers.

SEALANT -- A non-hardening resilient material used to fill and/or seal joints (where movement is expected) to prevent the passage of liquids, solids, gases, insects, or sound between two substrates so as to provide a weather-tight seal. This includes caulking, chinking, and preformed tapes (uncured or partially cured).

SAWN ROUND TIMBER BEAMS – Round timbers that are shaved or sawn along one side, normally loaded on their flat surface and stressed primarily in bending.

SEASONED (SEASONING) -- the act of drying wood to the extent that the moisture content has reached equilibrium with the outdoor atmospheric humidity.

SETTLEMENT – The reduction in overall height of a log wall due to compaction after construction due to loading and / or shrinkage of individual structural-logs as they dry.

SHRINKAGE – change in dimension due to the loss of moisture content below the fiber saturation point, expressed numerically as a percentage of green dimension.

SHRINKAGE PANEL – the finish material used to cover the settling space above windows, doors, interior partitions, etc.

SILL LOG – the first log of a wall, typically sitting on the foundation or floor frame.

SPLINE – a piece placed in slot cuts, grooves, dados, etc. to strengthen joints between two components. Made of wood or metal. In Log Building splines are typically used in openings to stabilize wall sections.

STRUCTURAL-LOG – Wood members of any shape or size normally stacked horizontally or laid-up vertically to form solid-wood (log) walls in any structure or used for other load supporting members including beams, joists, rafters, girders, columns and truss members that have been visually or mechanically stress graded and grade marked or certified to grade by an accredited inspection agency. This may include members that are glued laminated, edge-glued, and/or finger-jointed.

THROUGH-BOLTS (THRU-BOLT) – a threaded metal rod, extending the full height of a wall, fastened at each end with nuts and washers. Used to provide rigidity, and the ability to tighten a wall section as settling occurs. Compression springs may also be used to adjust for settling.

TIMBER FRAME – the methods of joining large timbers into a braced structural frame. At times referred to as Post and Beam construction.

WALL-LOGS – Wood members, referred to as wall-logs, which are normally stacked horizontally or laid-up vertically to form a load-bearing, solid-wood wall in any building. These structural members can vary greatly in dimension and section profile, and they can also be used as beams, joists, etc. and do not have to be used as wall components.