

Glossary of Terms.

Beam	A framing structural member used to support a series of joists, trusses or rafters, in place of a continuous wall.
Bottom Plate	The bottom, horizontal structural member of a stud framed wall. The bottom plate sets on the subfloor, nails through the subfloor into floor joists.
Box Joist	A framing member to help support the ends of a row of joists, which is attached to them at right angles. Also known as a rim joist.
Bridging	Small pieces of wood or metal strapping placed in an X-pattern between the floor joists at midspan to prevent the joists from twisting and squeaking.
Cap Plate	The upper top plate.
Cripple Stud	Short studs placed between the header and a top plate or between a sill and sole plate.
Crown	The upward bow, curve or rise along the length of a board. Deck boards are set on end with the crown up. Over time, the crown will sag and the board will straighten.
Collar Tie	A horizontal framing member that connects opposite rafters.
Face-Nail	Driving a nail perpendicularly through the width side board (i.e. straight, 90-degree angle)
Fascia	The visible flat front board that caps the rafter tail ends and fly rafter edges.
Floor Joists	The main subfloor framing members that support the floor span.
Header	A beam placed perpendicular to wall studs above doors, windows or other openings to carry the weight of structural loads.
Heel (Heel Cut)	The vertical/plum cut perpendicular at the seat cut of a rafter, at the outside face of a supporting wall.
Joist	Parallel framing member installed horizontally to support floor and ceiling loads.
Load-Bearing Wall	A wall that supports structural weight above it. Identified by having overlapped or butted ceiling joists running perpendicularly above it.
Miter	An angled cut, usually 45°. Unlike a compound miter cut, the saw blade remains straight at 0°.
Non Load-Bearing Wall	A wall that supports no load other than its own weight.
On Center (O.C.)	The term used to define the spacing between studs, joists, rafters, etc. O.C. measurements are taken from the center of one member to the center of the adjacent member.
Penny	A term applied to nails that originally meant the price per hundred. Today, it indicates nail length and is abbreviated with the letter "d," the English sign for one cent.
Plumb	"Vertical", walls are Plum when they are perfectly perpendicular to a level surface.
Plywood	A piece of wood made of three or more layers of wood veneer laminated together with glue.
Rafter Rise:	Is the vertical distance a rafter will span from where the rafters top edge is in line (plumb) with the outside of the wall to the roof peak.
Rafter Run	Is the horizontal distance a rafter will span. It is measured from the outside of the wall to the center of the ridge (one half the building width).
Rafters	Typically a 2x6 or greater horizontal framing member used to construct roofs. These rafters connect between the Cap Plate and Ridge Board. (See Common, Hip, Valley, Jack, and Cripple rafters).
Ridge Board	Typically a 2x8 or greater horizontal framing member used to construct roofs. This member extends the length of a roof and rafters are attached to it.
Rough Opening	The framed-in opening, slightly larger than the actual window/door, that replaces wall studs to support the structure and accommodate a window/door.
Seat (Seat Cut)	The horizontal cut portion of a rafter which sets on a cap plate.
Sheathing	The structural covering applied over studs, or rafters.
Sill	The piece of structural wood forming the lower side of a window opening.


Sill Plate	The horizontal wood member that is anchored to the foundation (pressure treated), it provides a nailing surface for joists or studs placed on it.
Sleeper.	Supporting timber at or near the ground to support joists, or a joist itself.
Sole Plate (or bottom plate)	The bottom horizontal structural member of a stud framed wall.
Spacer Blocks	Short 2x4 or 2x6 blocks nailed to corner studs to form a corner post.
Span	The horizontal distance a rafter, or joist will span. It is measured from the outside of the wall to the center of the supporting member (one half the building width for rafters).
Stud	A 2x4 or 2x6 vertical framing member used to construct walls and partitions.
Subfloor	Boards or plywood installed over joists on which the finish floor is laid.
Tack	A temporary nailer. An object it "tacked" into place to assist in positioning, measuring, handling, etc.
Toenailing	Starting a nail at an angle or slant in one framing member and driving it through into a second (usually perpendicular) framing piece.
Top Plate	The top horizontal framing members of a framed wall.

Material and Tool Identification

Wood Frame Construction Fasteners and Materials


Fasteners

Carriage Bolt



Commonly used to bolt wood. Never use a washer under the head as the square shoulders designed to grip the wood. Also found on machinery.

Drywall Screws




All are Phillips except the Hex Washer head. Used to fasten drywall. Bugle shaped flat head.

Deck Screws




A straight shank wood screw with a bugle head. Commonly made with a Phillips or square drive 2 1/2" or longer. Coated to prevent rusting.

Box Nail



Roughly speaking, d equals 1/4 inch in length, but this is not constant. The shank is smaller in diameter than the common nail to prevent splitting of the wood. Common sizes 2d to 16d

Common Nail



Roughly speaking, d equals 1/4 inch in length, but this is not constant. The shank is larger in diameter than the box nail making the nail less likely to bend. Common sizes 2d - 20d. Sizes larger than 20d are often called spikes.

Finish Nail



The sizes range from 2d to 20d. The nail is designed to be counter sunk and the hole filled.

Galvanized Nail



Common, box, and finish nails are available for exterior use with a galvanized coating. The coating may be hot dipped (thicker) or electro-plated (E.G). Used in many small projects as well as general construction projects.

Cement Coated Nails



Sizes range from 2d to 16d. Commonly found in a green coating in 8d and 16d ("sinker"). Cement coated nails are used for projects that require an extra bond, with the reduction in the chance of splitting. They are also well suited for nailing down plywood.

Galvanized Roofing Nail



The head is about 1/2 inch in diameter, and the length ranges from 1/2 to 2 inches. Used in roofing and construction projects.

Douglas Fir



Used primarily for structural framing. Very strong.

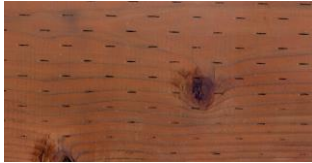
Wood/Lumber

Roofing Felt



15# or 30#. 15# commonly used under composition shingles.

Pressure Treated Lumber



Generally fir species that is treated to resist decay. Green in color.

Composition Shingles



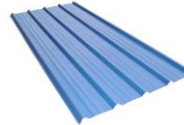
Asphalt and aggregate shingles. Sold in bundles. Commonly cover 33 square feet per bundle.

Plywood



Composed of layers of wood sheets with the grain of each sheet glued at right angles. Very strong. Used for flooring, roof sheathing, and shear walls. Comes in various grades denoted by letters. A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z. For example AC would be A on one side and C on the other. Plywood can be designated as interior or exterior depending on the type of glue used in its manufacture.

Steel Roofing



Painted and formed steel sheet. Commonly 3' width.

Oriented Strand Board (OSB)



Primarily made from wood chips. Used for shear walls and roof sheathing.

Composition Shingles



Asphalt and aggregate shingles. Sold in bundles. Commonly cover 33 square feet per bundle.

Wood Frame Constructions Tools

Safety Glasses



Eye protection that covers eyes only. Safety glasses have side shields. The California State Educational Code states that all students, teachers, and visitors in a school shop must wear eye protection.

Measuring and Layout

Steel Tape



A retractable measuring tool available in widths 1/2" to 1" and lengths 6' to 30'. It should be cleaned after using and kept free from rust.

Framing Square



Rafter framing squares are marked in 1/2ths of an inch on the back side. Also called a Carpenter's or steel square. Many of these squares are inscribed with rafter tables.

Rafter Square



An aluminum square marked for cutting rafters and angles. Also can be used as a guide for cross cutting with a circular saw. Small size will fit in a nail pouch.

Combination Square



A level and a scribe are contained in the beam. The rule is commonly marked with 1/8", 1/16", and 32nd" markings.

Sliding "T" Bevel



Used to reproduce angles. After it is set at the correct angle, it is much the same as a square.

Carpenter's Level



Used for marking level lines and for checking surfaces for level and plumb. Typical length 24-48 inches. Longer levels are often called masonry levels since they are commonly used to lay brick.


Chalk Line



A special container contains the chalk powder and line which is on a winding spool. Used to mark straight lines by stretching the string and popping it.

Power Tools

Circular Saw Blade



The size is determined by the diameter of the blade.

Extension Cord



14 ga. or 12 ga. are preferred to prevent damage to power tools.

Jig Saw




Many variations of blades are available for cutting wood, plastics, and other soft materials. Also called a Saber Saw. Used to cut in the interior of a project (e.g., a hole) and cut curves.

Portable Electric Drill/Impact Driver



Typical drill chuck sizes are 3/8" to 1/2". Impact drivers (for screws) accept standard 1/4" hex bits.

Power Miter Saw




Used to cut wood. The saw pivots on the miter box to cut angles.

Screwdriver Bit



Available in slotted, Phillips, square, and torx drives for power screwdrivers. Shank is hexagonal.

Nail Gun



Nails are fed automatically from a loading chamber and are dispensed by pulling the trigger. Available to drive brads, box and finish nails, roofing nails, and staples. Air powered or powered with a gas charge.

Circular Saw



Primarily used for cutting wood, however many blades types are available for cutting sheet metal, metal, stone, and various other products. Available as a direct drive (left) or worm drive (right).

Table Saw



A stationary saw used primarily for ripping lumber and sheet materials.

Reciprocating Saw



Similar to the jig saw but much larger and used for heavy duty work. Commonly used to cut materials such as nails, pipe, as well as wood. Available as a cordless tool. Useful for cutting out the plate under a door.

Hand Cross Cut Saw



The standard length is 26 inches. Typically 6-12 teeth/inch. Used in carpentry for cutting against the grain. Teeth are pointed.

Hand Tools

Jack Plane



Planing should be done with the grain of the wood. Note tail behind the handle. Used for general smoothing of the edges.

Tin Snip



There are four types available, regular straight snip, curved (left and right) snip, and duckbill snip.

Nail Set



A nail punch also called a nail set, is used to drive the head of a nail flush with a surface.

Straight Claw Hammer



The hammer head is the same as a curved claw hammer, but the claw is nearly straight. Weight 16-28 oz. Head may be smooth or serrated. Also called a ripping hammer. Primarily used for pounding nails into, or extracting nails from, some other object. Generally, a claw hammer is associated with woodworking but is not limited to use with wood products.

Wood Chisel



It is sharpened only on one side to a 25 or 30 degree angle and may be used with or across the grain. A sharp wood chisel can cut mortises, shave rough surfaces, chop out corners and scrape off glue.

Framing Claw Hammer



A straight claw hammer with a serrated head for driving large nails used in framing. Some models have a magnetic nail slot (shown) for starting nails.

Cat's Paw



A tool used to pull nails.

Tool Belt



Used by carpenters for common tools and fasteners.