



Wall Construction

Residential and some commercial construction wood is commonly used to construct framing of the homes such as the floors, walls, and roof sections. Wood is a natural resource that is flexible, easy to work with, light weight and strong. Creating custom or pre-fab building both can be easily done by rough-in carpenters. Following building code and building standards, homes are built safely and economically in a smart fashion to suit modern living conditions of today and the future.

Wood Framing and Construction Safety

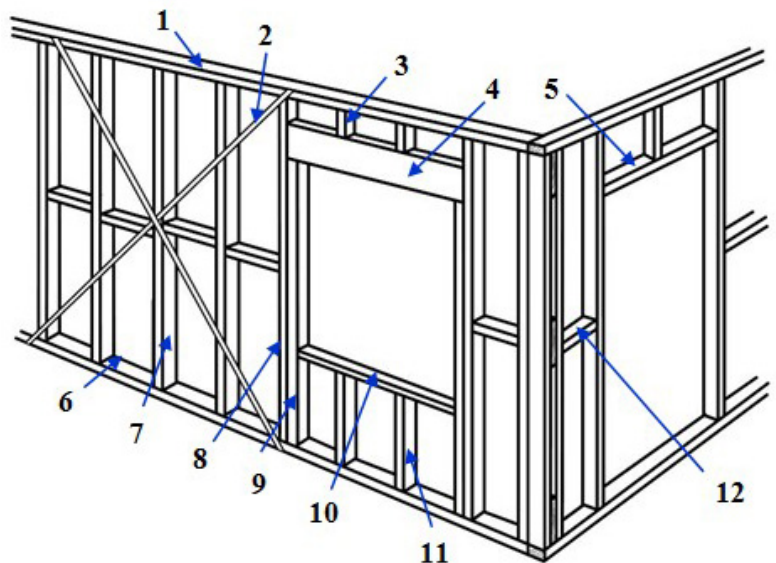
There are many safety aspects to be aware of such as personal protective equipment, proper construction methods, proper use of tools, following building codes, fire safety, WHIMS, your rights as a worker, and work hazards. Building codes regulate items such as ceiling heights, door openings, width of hallways, etc. to make living area built safe for the owner.

Related Terminology

There are a lot of related terms related to the rough carpentry/framing industry used to communicate and understand the frame builds, here are some of them and a quick explanation:

- **Bottom plate** (also known as base, sole) plate - horizontal piece found as the base/bottom of the wall supporting all the studs
- **Cripple stud** - vertical frame member above or below a header or window lintel
- **Face-nail** - nailing 90 degrees to the surface of the wood you are nailing
- **Joists** - run horizontal to support floors
- **Header** - horizontal support span in a wall, usually above a door or window
- **Sill or lintel** - is the lower horizontal span support piece below the window
- **Sill plate** - wood that is anchored to the foundation wall, providing a nailing surface for other frame components
- **Stud** - vertical members making up walls
- **Sub floor** - usually the plywood supported by floor joists
- **Toe nailing** - nailing on a 45 degree angle through to another component
- **Top plate** - horizontal piece found at the top of the wall

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Carpentry Tools

There are many tools used in the carpentry trade and carpenters working on special jobs may have specific tools related to the task to complete. Some of the general tools you will most likely use are as follows:

- Framing square - for squaring up larger builds
- Speed square - multiple uses such as squaring smaller project, circular saw guide, and pitch
- Framing hammer (20 oz) - used to nail framing together
- Carpenter's level - check if work is level/straight
- Carpenter's pencil - marking and layout
- Chalk line - creating straight lines fast for layout
- 25 foot tape measure - measuring
- Plumb bob - weighted string for vertical
- Sledge hammer - demolition
- Portable circular saw - general wood cutting
- Portable mitre saw - wood cross-cutting
- Reciprocating saw - tight corner cutting
- Power drill - creating holes
- Power screwdriver - screwing different bits
- Pneumatic nailer - air assisted nail gun for faster nailing
- Ladders - to access higher or lower levels of work place
- Scaffolding - create higher working platform to work from



Wall Construction

There are three main types of framing called; balloon framing, platform framing, and advanced framing. **Balloon framing** was an older framing used back in the 19 century up till the 1950's which uses long continuous studs that run from the sill plate to top plate with intermediate floor levels nailed into them. **Platform framing** is commonly used now in which floor joists rest on the sill plate or on top of a stud wall allowing for separate platform walls. **Advanced framing** is a type of platform framing that makes better use of lumber.

It is important when building walls that they are square, leveled, and plumb (straight vertically) otherwise the wall will end up crooked. Sub floor construction includes setting up sill plates by drilling holes to fit over wall anchors with sill gasket between the concrete foundation wall and the pressure treated sill plate. Rim joists sit on the sill plate and both support the floor joists. Beam pockets in the concrete foundation wall are also used on larger homes so joists can span further distances as a whole. Floor joists are usually 16" O.C. apart with bridging and sub floor screwed onto the joists. Walls are built usually on the sub floor with the top and bottom plates with 16" O.C. studs and then raised up into place. Doorways and windows are supported above with headers to spread the load and support the intended wall component. Wall corners are blocked in to allow drywall to have wood to screw down on, in the corners.



Review Questions

All questions must be answered before practical work. Answer questions neatly in the space provided.

1. Why is wood such a great material to use for framing buildings?

2. What safety aspects must you be aware of in the framing process?

3. Name and describe 5 key terms used in the framing industry.

4. Name and describe 5 wall construction components.

5. Name and describe 5 carpentry tools used in the framing industry.

6. Describe three types of framing methods in building construction?

Mark
Breakdown
Column

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