



OVE and Stack Framing

Builders can lose a lot of sleep worrying about gaining a competitive edge while constantly improving the quality and durability of the homes they build. But luckily, there are new techniques like OVE -- and specifically stack framing -- that can help builders get a full night's rest.

OVE stands for Optimum Value Engineering and is a collection of framing methods that use less lumber than conventional framing by placing framing members only where they're needed. The OVE strategy of using less lumber also makes the home more energy-efficient by reducing the number of cold spots in the walls, leaving more room for insulation.

There are several techniques in the OVE method, one of those is "stack framing". The stack framing method lines up all the load paths in the load bearing walls from the bottom floor to the roof framing. In doing so, a single top plate between the wall sections can be used instead of the typical two top plates. Stack framing is structurally sound, complies with building code, creates an even distribution of the house's weight from roof to first floor, and can be constructed faster with fewer materials needed.

Here's one approach to constructing a wall using the stack framing method.

▶ Frame each of the first floor load bearing walls with 2 x 6 inch studs on 24-inch centers. This allows for a much wider and deeper space for insulation, reduces the overall number of studs, and removes the need for double top plates. 2 x 6 inch studs are not essential, 2 x 4's can also be used. In either case the structure must be engineered to be strong enough to carry the loads.

▶ Attach a single stud plate on top of the wall studs.

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▶ Fasten the second floor joist to the top plate and attach a single rim plate. Install the second floor decking.

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▶ Next, attach the second floor studs to the rim plate making sure that the studs line up **exactly** with the first floor studs on 24-inch centers.

▶ Finally, fasten one single top plate to the top of the second floor wall studs, and continue with the roof framing as planned. Again it is important that each roof joist line up **exactly** with the wall studs.

The more common method of wall framing on 16-inch centers, while structurally sound, uses significantly more lumber and provides less opportunity for insulation. For example, a standard 40-foot wall, 8 feet tall with 2 x 4 stud framing on 16-inch centers will use about 40 studs and leave just under 1,100 square feet of space available for insulation. By comparison, a 40-foot wall built using the OVE stack framing method requires only 25 studs and would create 1,650 square feet of space for insulation.

Fewer studs mean less lumber used, fewer nails driven, and a faster build time. When these savings are extrapolated over a year, the difference can be more than significant. Stack framing is just one of several OVE framing techniques. To learn more about OVE framing methods check out the PATH Toolbase website.

By adopting new building techniques, builders can have peace of mind and a competitive edge.