

Section 4 – Capital Requirements and Inventory

Builder

Lane Framing is set up to allow the builder to use of cold-formed steel framing without requiring the builder to make new capital or inventory investments. In this case study, Craftsmen Homes contracted all the framing and sheathing activities to Lane Framing.

Lane Framing is responsible for supplying and installing wall panels, floor joists, roof trusses, and sheathing for the walls, floors, and roof. Besides supplies and materials, the Lane Framing contract included panel design and associated engineering costs, but not structural design. Craftsmen Homes hires another contractor who attaches the one-inch exterior foam board to the wall panels and applies the stucco finish.

The following section outlines additional tools needed to frame with cold-formed steel over wood. Tools and equipment already needed to frame with wood are not considered additional tools.

Framer

Lane Framing has been framing homes with cold-formed steel for nearly twenty years. Over this time, Lane Framing has evolved its framing process from stick-building with steel studs and tracks to the current process of fabricating wall panels on-site. The following provides a brief overview of the capital and inventory requirements necessary to fabricate and install cold-formed steel wall panels, based on Lane Framing's business model.

Panel Fabrication

Lane Framing fabricated the wall panels for the observed model homes at a nearby construction site and transported the panels to the building site. Once the model homes are approved, all future wall panels will be fabricated at their construction site. The tools necessary for the ten person crew for on-site fabrication include those in the following table.

Tool or Equipment	Application	Average Cost	Quantity
Screw Gun	Attaches studs and tracks together	\$100	8
Chop & Skill Saws	Cuts tracks and studs as needed	\$175	2



Only the cut-to-length studs and tracks and the screws were stored at the fabrication area. There are no accommodations for other stock or excess material.

Occasionally, a welder is hired for piece work. The welder supplies his own equipment and is paid a prevailing wage rate. The welder is hired to create steel support beams, as pictured here.

Land Area

The panels are fabricated outside and uncovered on a vacant lot either within the new development or a neighboring lot. Ideally, Lane prefers the fabrication area to be within approximately one hundred yards from the home sites to minimize transport activities. The fabrication area also serves as the storage area for completed wall panels. Before a contract is agreed upon, the land details for wall fabrication are discussed.

Transportation

Completed wall panels for each home are stacked together. These stacks are transported with an all-terrain forklift to the foundation. For the observed homes, the panels were fabricated at another construction site and transported via flatbed truck to the home site, and positioned by a forklift once the panels arrived. Lane Framing hired an outside firm to haul the panels between sites.

Erection/Framing

Lane Framing is responsible for framing the homes and applying the wall and roof sheathing. The tools necessary for these tasks include:

Tool or Equipment	Application	Average Cost	Quantity
Screw Gun	Attaches wall panels together and sheathing to wall panels	\$100	8
Plasma Cutter	Cuts steel members	\$450	1
Shear Snips	Cuts steel members	\$12	8
Chop Saw	Cut steel tracks and studs	\$180	1

Machinery

The wall panels are moved at the job-site with an all-terrain forklift. The forklift is used to place the panels near the foundation slab for the framing crew to easily carry. For bigger and/or heavier panels the forklift assists in placing the panels. The forklift also places steel joists on the first floor walls, OSB flooring on the joists, second floor steel wall panels on the second floor, and wood trusses top of the wall panels. Lastly, the forklift moves heavy items like red-iron support beams. Lane Framing rents a forklift for each project.



Storage

Screws and other weather sensitive supplies are stored in a metal storage shed located at the construction site. Lane Framing supplies its own storage shed specifically for the framing and fabrication crews.

Power

Fabrication and framing activities receive electrical power from the city grid to operate the screw guns, welding equipment, air compressors, and saws. Temporary power polls are set-up by the electrical provider and the energy bills are paid by Lane Framing.