



Construction Methods

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All construction work completed prior to the installation of Nichiha fiber cement products should be in accordance with local building codes.

Closely inspect all areas for non-standard construction or conditions that you suspect are not within local and/or state building code.

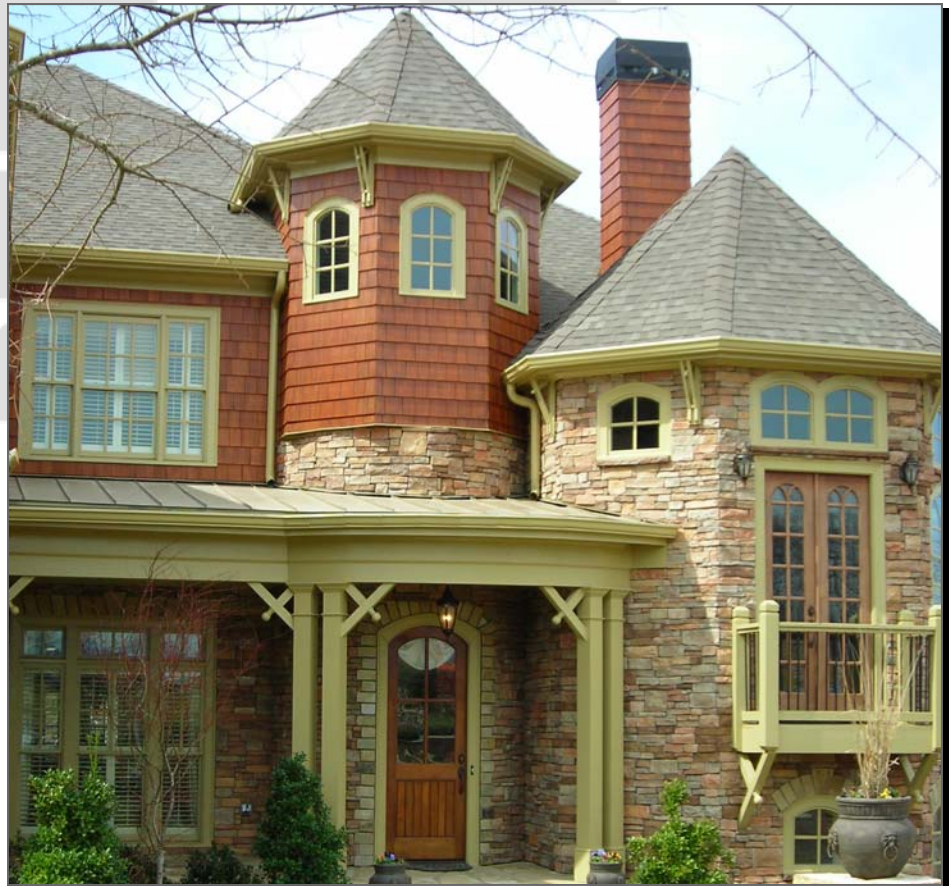
Any problems should be corrected before the installation of Nichiha fiber cement products.

Refer to architectural plans for all detailed drawings and specifications. Work closely with the general contractor and job site superintendent discussing areas where product is to be installed. If necessary, provide mock-up wall for demonstration of installation techniques including starter strip, support clips and fasteners.

◆ **Wood Framing Residential & Commercial**

Conduct a site audit to ensure the following construction requirements have been met.

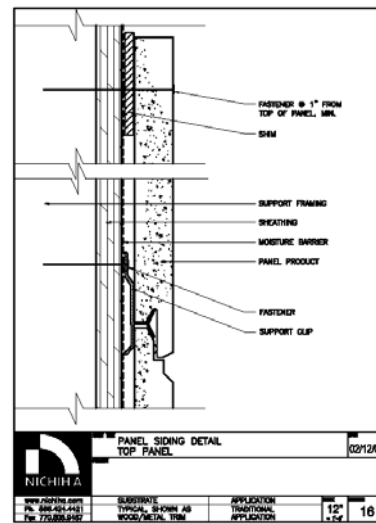
- ◆ Wood studs are spaced at 24" o.c., are a minimum of 2x4 studs, and are appropriately blocked around doors and windows.
- ◆ Ensure that an APA rated 7/16" OSB (oriented strand board) or 1/2" plywood is used.
- ◆ Ensure the use of appropriate building wrap (weather resistant barrier).
- ◆ Ensure that all windows and doors have appropriate flashing installed.



◆ Metal Framing Residential

Conduct a site audit to ensure the following construction requirements have been met.

- ◆ Steel studs should be a minimum of 20-gauge metal and set at maximum of 16" o.c.
- ◆ Ensure that an APA rated 7/16" OSB (oriented strand board) or 1/2" plywood is used.
- ◆ Ensure the use of appropriate building wrap (weather resistant barrier).
- ◆ Ensure that all windows and doors have appropriate flashing installed.



Metal Framing Detail Showing Support Clip and Top Spacer for Face Screw



◆ Metal Framing Commercial

Conduct a site audit to ensure the following construction requirements have been met.

- ◆ Metal studs should be a minimum of 18 ga. and set a maximum 24" o.c.
 - ◆ Ensure commercial grade weather resistant barrier (breathable type recommended) is properly installed before installing Nichiha products.
 - ◆ Ensure that all windows and doors have appropriate flashing installed.
 - ◆ If installing building wrap and flashing, follow manufacturer's guidelines and local building codes.
- ◆ Non-corrosive screw or pin attachment to every frame stud or girt is required.
 - ◆ For buildings higher than three stories, or 45 feet, contact Nichiha Technical Department for additional installation requirements.
 - ◆ Windloads, vertical expansion joints, and compression joints become more important issues with taller structures.



◆ **Structural Insulated Panels Residential & Commercial**

Structural Insulated Panels (SIPs) are becoming more common in both residential and commercial construction.

SIPs panels are typically manufactured from layers of polystyrene or polyurethane or Styrofoam™ sandwiched between two layers of oriented strand board (OSB).

The panel provides structural framing, insulation, and exterior sheathing in one single unit. Energy efficiency and quicker installation are the benefits of using SIP's.

Conduct a site audit to ensure the following construction requirements have been met.

- ◆ Ensure appropriate building wrap (weather resistant barrier) is installed before putting up Nichiha products. A breathable WRB is recommended for commercial installations.
- ◆ Ensure that all windows and doors have appropriate flashing installed.
- ◆ If installing building wrap and flashing, follow manufacturer's guidelines and local building codes.



Typical SIP Panels

◆ Concrete Masonry Units Residential & Commercial

Concrete block, when reinforced with concrete columns and tie beams, is a common construction method for load-bearing walls (Concrete Block Structure or CBS or Concrete Masonry Units—CMU).

Variations of CMU and CBS are:

- ◆ Concrete foundations and slab with a perimeter of concrete block wall is typical in residential construction.
- ◆ Concrete block supplemented with steel I-beams is typical in large scale commercial construction and some multi-family construction.
- ◆ The holes inside concrete block allow rebar and concrete (reinforced concrete) to run vertically through the block adding structural strength. The rebar is anchored into the foundation or slab before concrete block is installed.
- ◆ Speed blocks are maneuvered between rebar and tilted into place, then the vertical spaces are filled with concrete.
- ◆ Poured concrete walls.

Conduct a site audit to ensure the following construction requirements have been met.

- ◆ Ensure appropriate building wrap (weather resistant barrier) is installed before putting up Nichiha products. A breathable WRB is recommended for residential and commercial installations.
- ◆ Ensure that all windows and doors have appropriate flashing installed.
- ◆ If you are installing building wrap and flashing, follow manufacturer's guidelines and local building codes.



Construction Methods



◆ Pre-Engineered Metal Construction—Commercial

Pre-engineered buildings are planned, designed and are essentially pre-built within a factory. Once they are shipped to the building site they need only to be assembled.

Most pre-engineered steel buildings are pre-punched, pre-drilled, and pre-welded at the factory prior to shipment and just need to be bolted together. This assembly process is usually very rapid and can be done with a minimum of skilled labor depending on the complexity of the project. A special exterior R-panel is typically used for the sheathing providing structural stability and a weather resistant barrier.

- ◆ The secondary framing members are called girts and run horizontally where the R-panels are directly attached.
- ◆ The use of weather resistant barrier may not be required on this installation depending on the local building code. A fastener sealant such as butyl pads may be required to maintain water seal protection.
- ◆ All windows and doors must have an appropriate flashing to prevent moisture penetration.
- ◆ Follow the manufacturer's guidelines and all local building codes in accordance with building wrap and flashing.



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