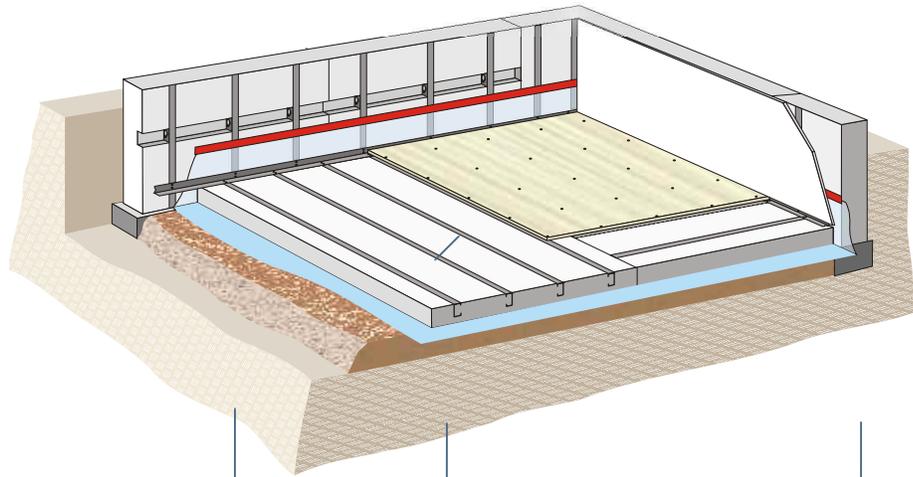


**POLYcore**  
CANADA INCORPORATED



**SLEEPER FLOOR MANUAL**  
FULLY INSULATED . CONCRETE FREE

RESIDENTIAL | COMMERCIAL | INDUSTRIAL

[WWW.POLYCORECANADA.COM](http://WWW.POLYCORECANADA.COM)  
1.877.765.9267

Our  
Strength  
is in  
the Steel.

# Installation Manual

## Polycore Sleeper Floor System

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# Installation Manual

## Polycore Sleeper Floor System

## Assembly Needs

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### Materials Included with Sleeper Floor:

- All 'Edge' and 'Fill' Panels required
- 10' long 1½" x 1½" angle brackets for perimeter of floor system
- #8 ½" waferteck self tapping screws
- #10 1½" self tapping counter sink screw

### Materials NOT Included with Sleeper Floor:

- Expansion Spray Foam
- Poly Vapour Barrier (at least 6 mil) - enough to cover floor area plus additional 1-2' on all sides
- Tuck Tape
- ¾" Tongue & Groove (T&G) plywood - enough to cover floor area

### Tools needed for assembly:

- **Permanent felt marking pen** - for marking of base anchor plate
- **Chalk liner** - for marking of T&G plywood
- **Power drills** (plus extra batteries & charger)
- **Drill bits** - #8 Phillips bit, #10 Robertson bit and bit extension
- **Sledge Hammer and Batter Board** - for joining T&G plywood
- **Utility knife** - for cutting poly vapor barrier
- **Sand** - enough for base for floor system (+25% for compaction)
- **Leveling rake and shovel** - rigid lawn rake will suffice
- **Vibrating Plate Compactor** (rent from Equipment Rental company)
- **Reciprocating saw with metal blade** - for cutting floor system

# Installation Manual

## Polycore Sleeper Floor System

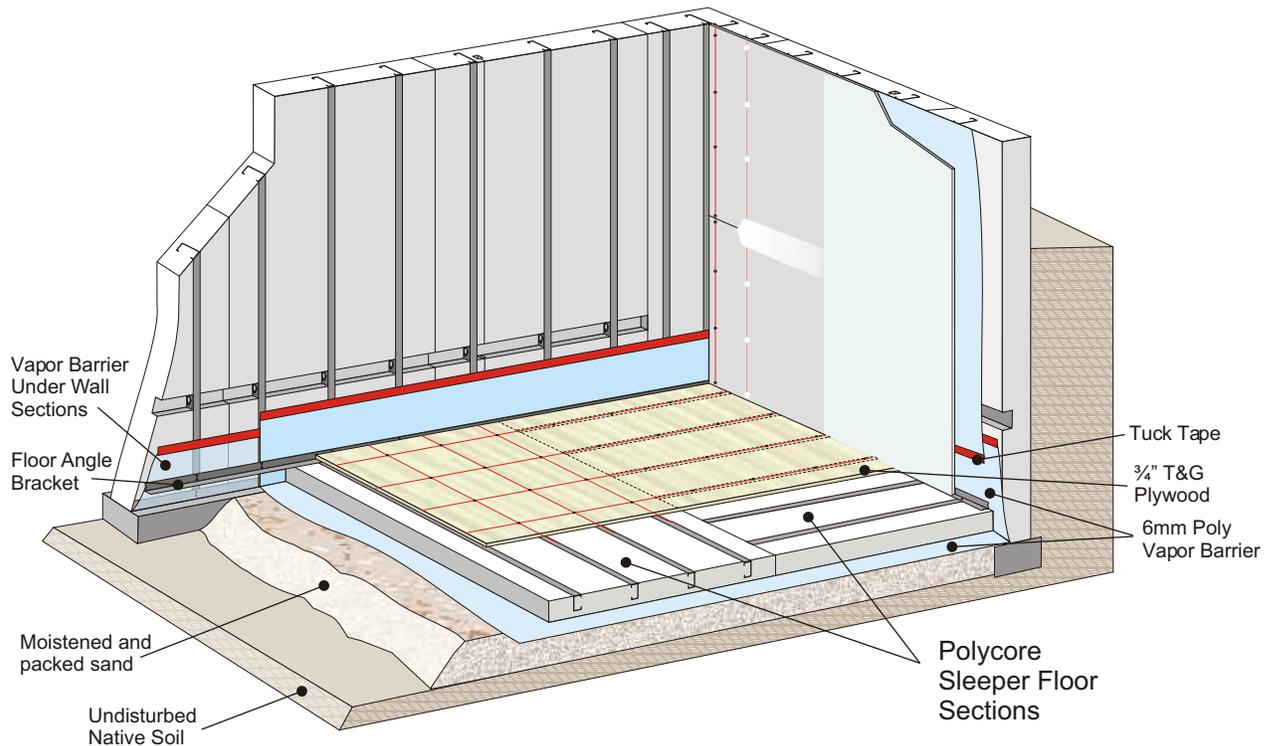
## Introduction

The **Polycore Sleeper Floor System** eliminates traditional poured concrete floors by using an insulated system of factory made sections that are easily delivered and assembled on site. Using minimal tools, no large equipment, and no special skilled trades, a typical sized residential foundation floor (1200-1500 ft<sup>2</sup>) can be set in place by three workers in as short a time as two working days. With an energy efficiency of R18+, its significant energy savings over traditional concrete floors at a lower price point.

### A Simple Concept

A packed bed of moistened sand level with your footings provides the base for the Polycore Sleeper Floor System. This eliminates the need to pour a concrete slab, scheduling of concrete trucks and multiple skilled trades typically required to complete your foundation floor. A layer of at least 6 mil poly vapor barrier is then laid over the sand base and extends up the sides of the foundation walls to ensure a sealed envelope around the entire floor system.

Strength is ensured by 2½” galvanized industrial grade steel studs and 4” builder quality EPS rigid insulation provides optimum energy efficiency. Once the floor system is in place, ¾” tongue and groove plywood is glued and screwed into the steel studs creating a solid foundation floor. Manufacturing efficiency and the simplicity of components keep costs lower than traditional concrete slabs. To minimize wastage, it is recommended that you plan out your section layout ahead of time.



### The Advantages

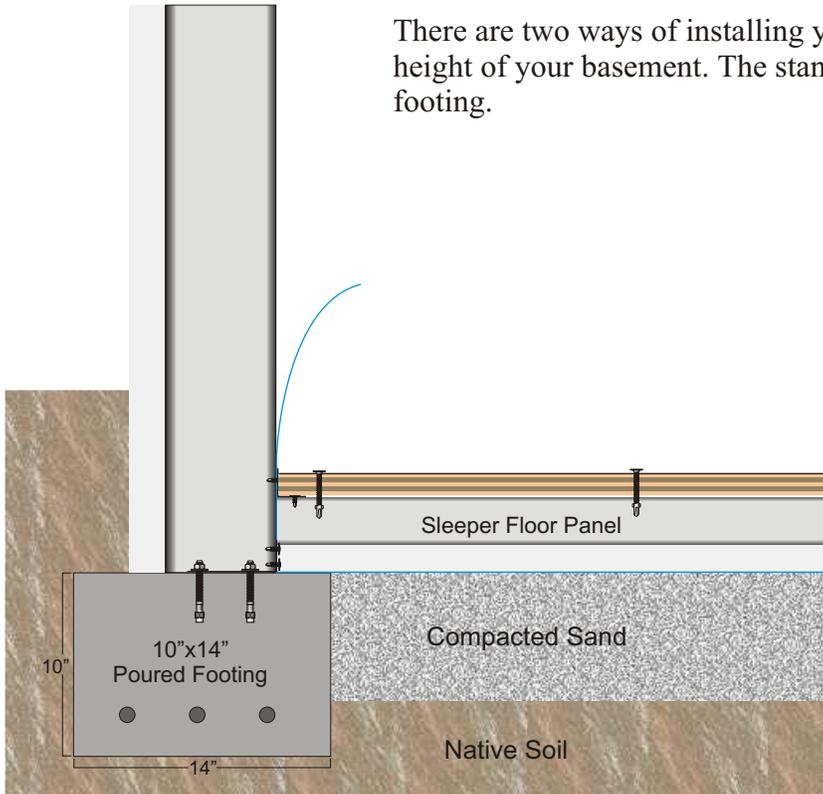
Advantages in pricing, construction scheduling, installation, finishing labor cost, and short-term availability are just a few of the ways this floor system significantly saves costs through the entire foundation floor process. For the homeowner, the advantages continue with increased R-value energy savings, and benefits the product provides in maximizing many other modern efficiencies such as geothermal energy systems. Combined with the consumer benefits of over-all lower project costs, the foundation floor system is a must have for any residential building.

# Installation Manual

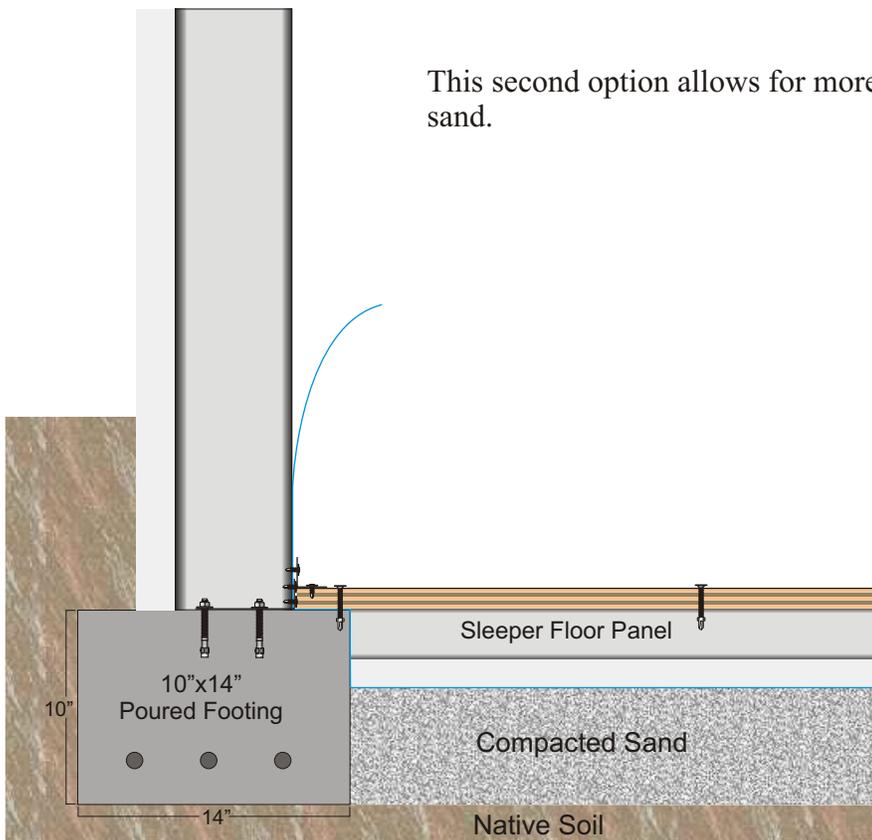
## Polycore Sleeper Floor System

### Floor Variations

There are two ways of installing your sleeper floor system, depending on the desired height of your basement. The standard floor shown here is built above the concrete footing.



This second option allows for more height in your basement and uses less compacted sand.

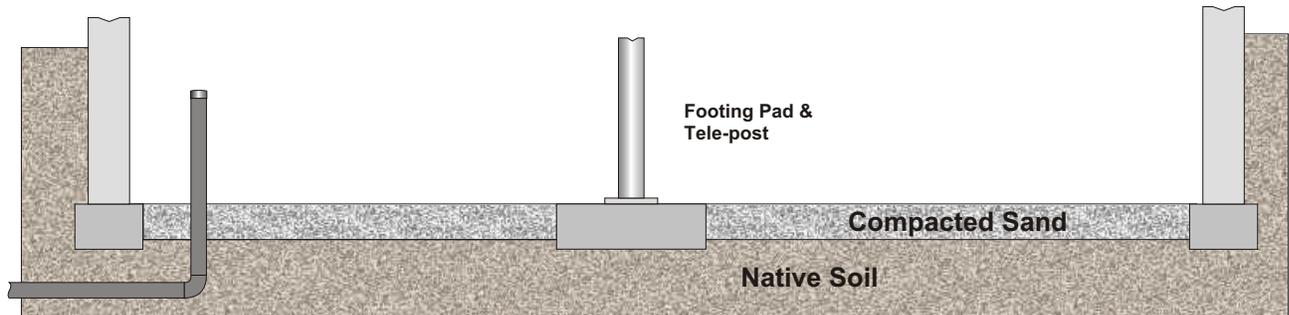


# Installation Manual

## Polycore Sleeper Floor System

# Sand Bed Base

Roughed-in plumbing should be capped off to prevent sand and other debris from falling into them while installing the floor system. The compacted sand base should keep them from shifting, but extra care should be taken when compacting and leveling sand around obstacles.



### Compacting Sand Base

1. Using a rake or other tool with a broad flat surface, level out the un-compacted sand until it is visually level. Once visually level, moisten to aid in better compaction.
2. Using a motorized, vibrating plate compactor compact every 2" of laid sand. Fill in any obvious low spots. Make as many passes with compactor as needed to fully compact the sand..

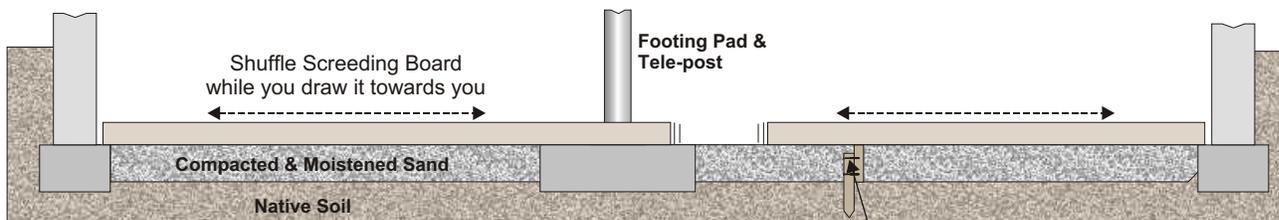
*Note: A minimum of 2" compacted sand base is recommended. For applications where more than 3" of fill is used, we recommend tamping every 2".*

**Safety Note:** These compactors are gas powered and create exhaust fumes - ensure that your work area is properly ventilated to the exterior and wear a dust mask or other breathing filter. Take breaks to let area air out to avoid accumulation.



### Screeding - Leveling of a compacted sand.

1. The sand base should be moistened to aid in screeding.
2. Leveling of the compacted base is achieved by screeding a straight board across the surface with both ends of the board on a height adjusted framework. Typically the foundation footing and footing pads have been poured to the same height and can be used for this purpose.
3. Compact leveled sand until desired grade and compaction is achieved.



Top Rail set at height of the Footing

# Installation Manual

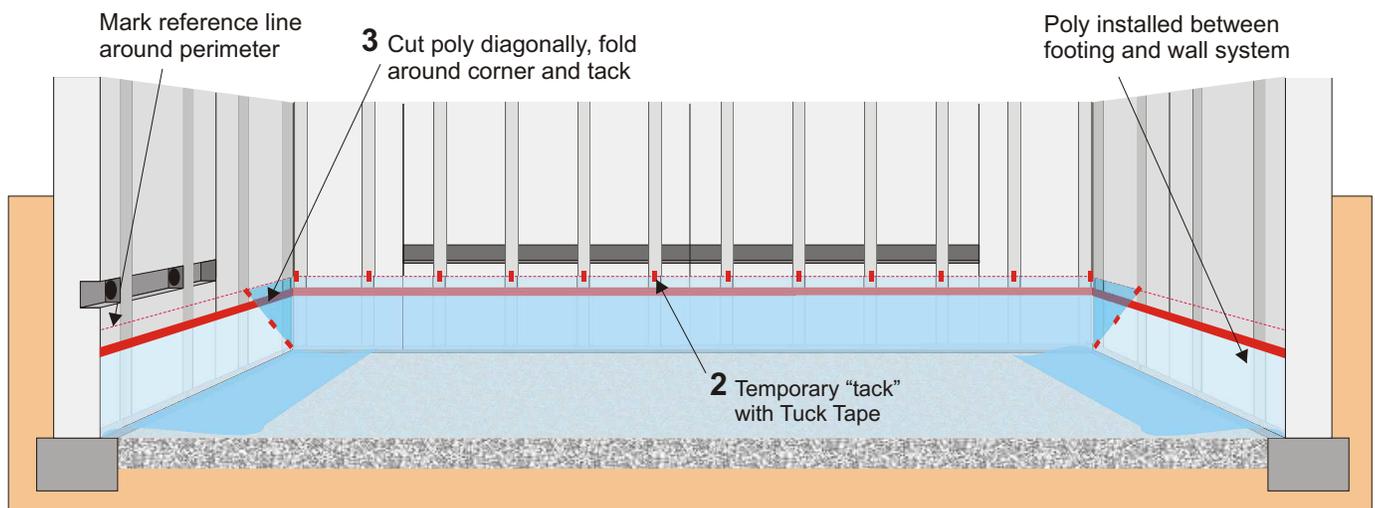
## Polycore Sleeper Floor System

# Vapor Barrier

### Laying down Poly

When satisfied with your screeded sand base, a layer of 6mil poly vapor barrier is laid over the sand base and run up the foundation walls about 12-18". This will create a waterproof 'envelope' separating the sand base from the floor system. Your 6mil poly should underlap the existing poly used on your walls.

1. Roll out the first length of poly approximately 18" up the length of the wall.
2. Tape the poly to the studs temporarily.
3. There will be a fold at the corners. Cut your poly at the fold and tape your corners.
4. Repeat Steps 1 through 3 overlapping the poly by a minimum of 4" until floor is completely covered. Be sure to tape your seams wherever overlapping.
5. Finish by taping the complete perimeter, diagonal flaps, and any cuts that have been made to accommodate obstacles.



# Installation Manual

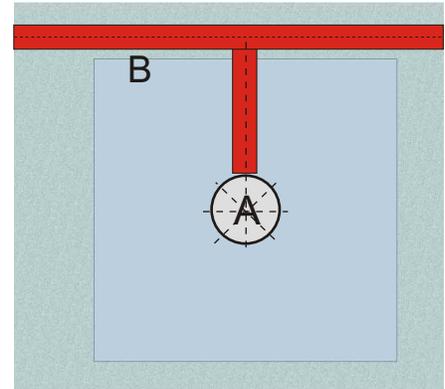
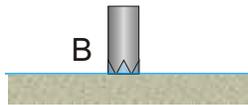
## Polycore Sleeper Floor System

# Vapor Barrier

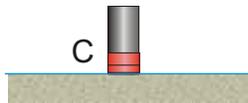
### Laying Poly Around Obstacles

To lay the poly around the plumbing (drains and feed lines) and support columns it is recommended that you:

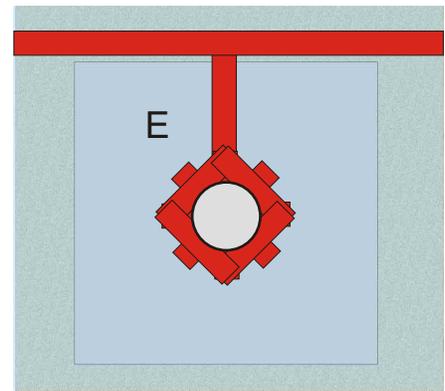
- A. Measure and cut a slit in the poly from the nearest edge to the far side of the object (right top) and star/triangles from the center of the object.
- B. Lay poly over the object with the triangles running up object. *Make sure that the seam to the edge of the poly matches back up and flat.* Secure rest of sheet run to floor and walls, taking out creases..



- C. Wrap Tuck Tape around at the base 2 wraps, and once more a little higher to get a good seal to the object.



- E. Surround the base with a few strips to hold down the horizontal flaps.

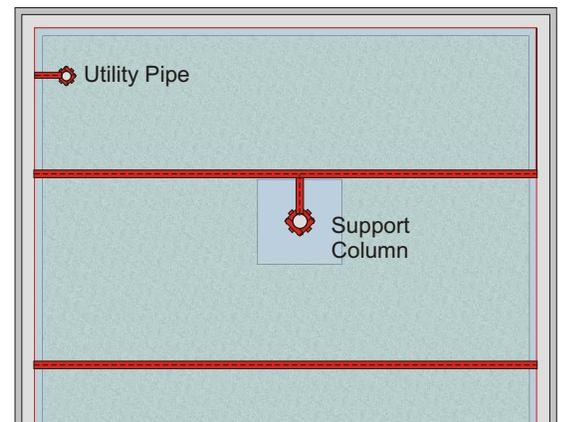


- D. Run vertical strips down the object and flaring them out at the bottom.



*It's hard to get your poly to lay perfectly flat and not have any creases in it, but the fewer the better to ensure a good waterproof seal.*

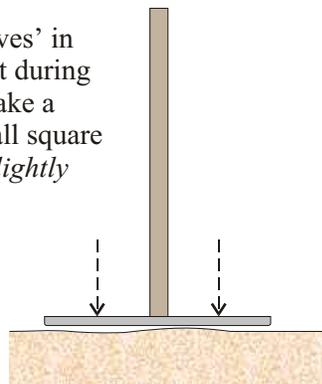
- F. After completing the laying of the poly, you can tape the poly to the wall, take out the 1x4s surrounding the area and cover the screw holes and any other spots with Tuck Tape to complete the envelope.



- G. **Getting as level of a base is very important so that the SF sections will lay flat.**

If there have been a lot of small 'heaves' in the sand base caused by walking on it during the installation until now, you can make a little "tamping foot" by nailing a small square of plywood to the end of a stick and *lightly* 'tamp' the high spots until leveled.

Tip: round off edges on tamper plate and rim with Duct Tape to prevent puncturing of poly while tamping.



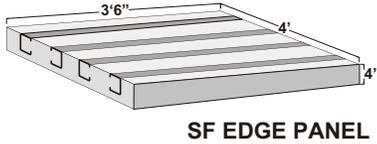
# Installation Manual

## Polycore Sleeper Floor System

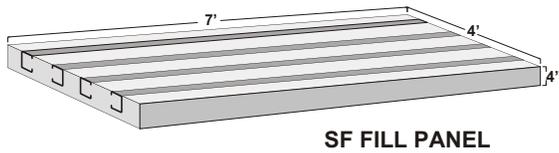
# SF Panels

### Placement of Sleeper Floor Panels

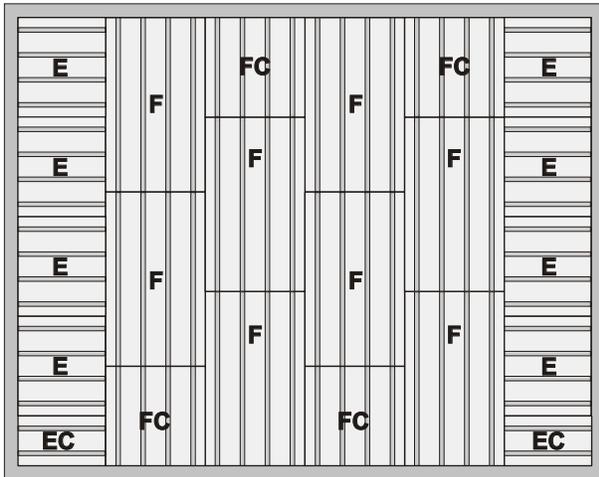
There are two types of Sleeper Floor Panels that Polycore supplies:



**SF Edge Panel:** Edge panels are used to run across the short sides of your basement (see picture below). Edge panels are typically started at one corner with a whole panel. Subsequent panels will then be laid until a final piece must be cut to ensure a perfect fit.



**SF Fill Panel:** Fill panels are used to fill in the 'body' of your sleeper floor system (see picture below). Just like your edge panel, use full sheets until you must cut an end piece to make a perfect fit. Once finished a row, each subsequent row should be staggered to keep the seams from lining up.

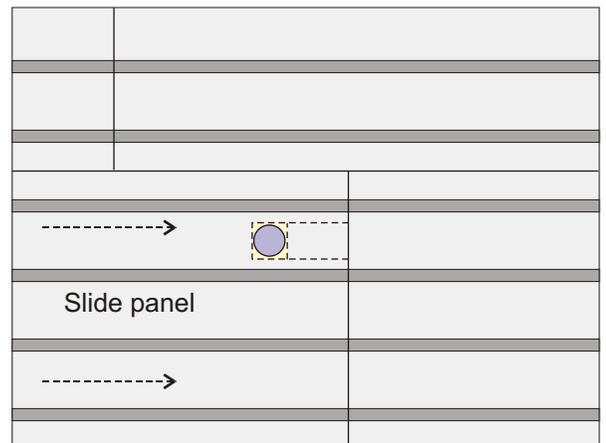


E = Edge Panel    EC = Edge cut to fit  
 F = Fill Panel    FC = Fill cut to fit

*Note: Always keep factory cut joints together while keeping cut ends to the perimeter. All cut pieces should be laid to maintain steel studs at 12" on center.*

### Obstacles (Plumbing and Support Columns)

As with the poly vapor barrier, you will have to accommodate plumbing and support columns. The best way to do this without compromising the structural integrity of the floor system is by cutting the EPS. Simply measure and cut out a section from the panel's closest edge so it can be slid around the pipe. Trim and replace the portions that you cut out. Once floor panels have been laid, fill all gaps with spray foam.



*Note: Do not cut the steel stud unless obstacle is in direct line.*

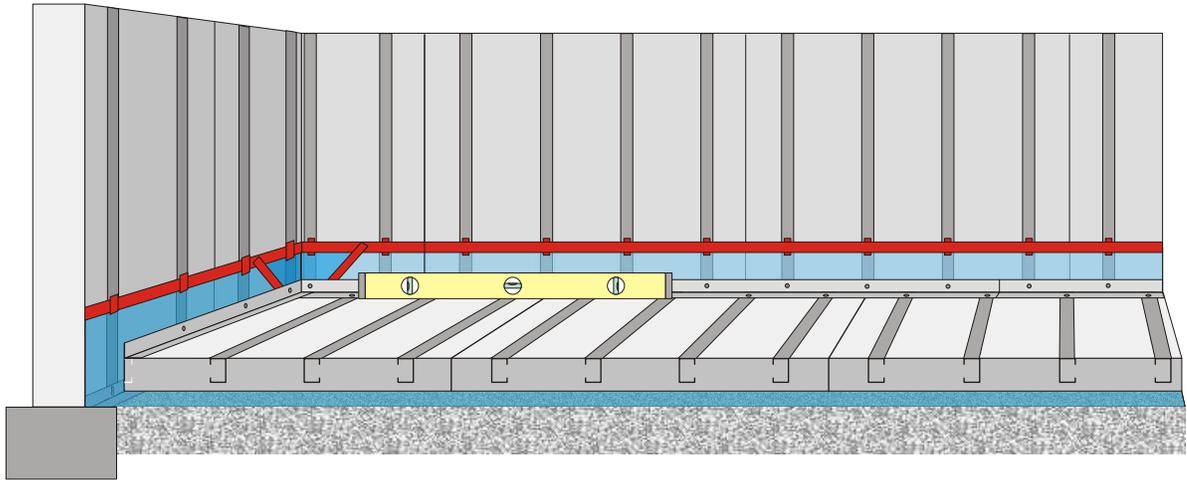
# Installation Manual

## Polycore Sleeper Floor System

# Angle Brackets

### Securing Sleeper Floor

When satisfied with the completed laying of the Sleeper Floor, the panels are secured into place by installing a 1½" x 1½" angle bracket around the perimeter of the walls. This ensures that the sections will not raise or lower around the edges, creating a solid stable floor.

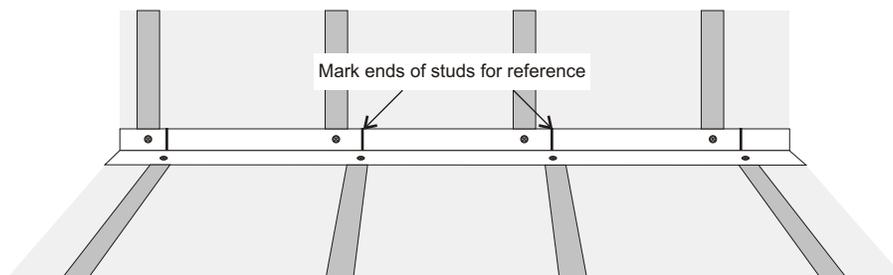


The floor angle brackets come in 10' lengths and are 'butt-joined' around the perimeter. Field-cutting will have to be done where less than 10' pieces are needed. Lengths should span at least 2 wall studs to ensure stability. The corners can overlap or be mitred for a flush joint at corners. Be sure to check for level as you proceed.

*Note: See following page for the different types of wall fasteners required.*

### Marking of Angle Brackets

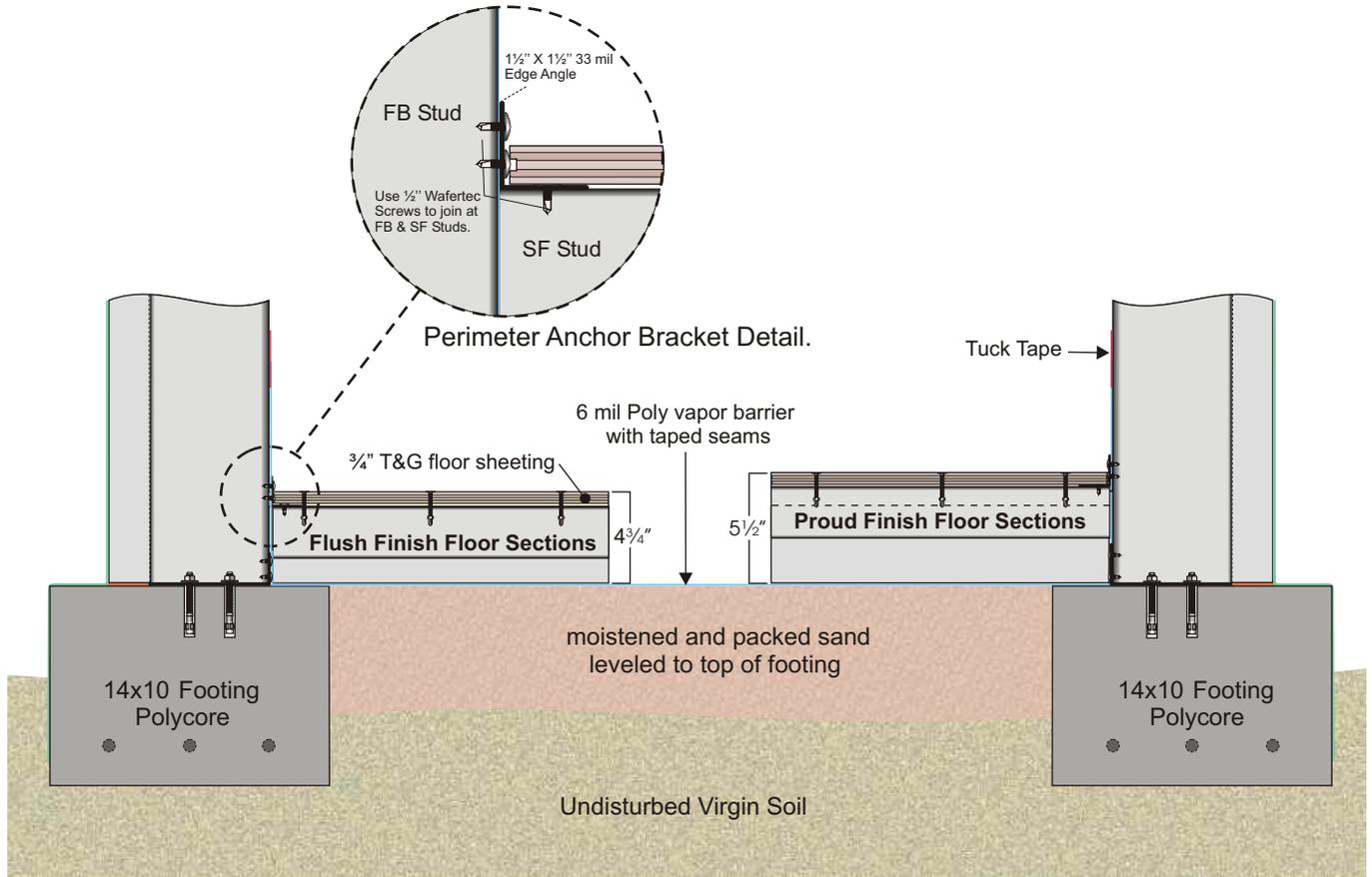
Before laying your T&G plywood, mark the studs with a permanent marker. Use these marks to draw a chalk line which will ensure that you are screwing into the centers of the studs when securing the plywood.



# Installation Manual

## Polycore Sleeper Floor System

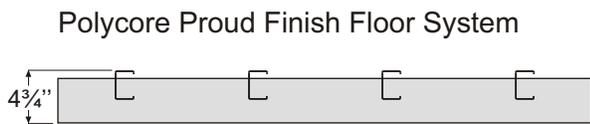
### Flush or Raised (Proud) Profiles & In-floor Heating



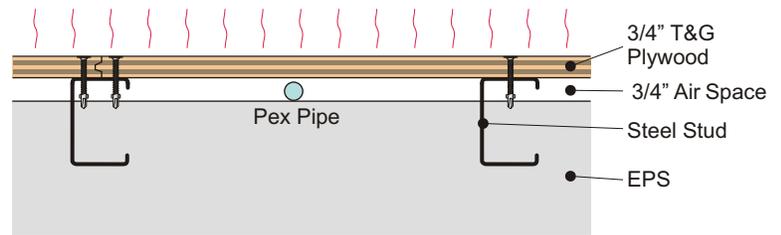
Flush Finish / Proud Finish Floor Systems

### In-Floor Heating

Our optional “Proud” system will accommodate “in-floor heating” if needed; although the R18+ insulated floor often replaces the need for the added expense. If you want in-floor heating, the Proud system is manufactured with the 2 1/2” steel studs raised 3/4” within the EPS blocks to accommodate the laying of the Pex-Pipe for the heating system without diminishing the rigidity of the floor system. The added advantage of this is that the heating system heats the air space under the floor sheathing quicker, thus saving energy and creating better temperature control.



*With the proud profile for in-floor heating, the joins of the 3/4” sheathing must lay on the steel studs or else the edges may fall into the spaces.*



Total Heating of the Air Space

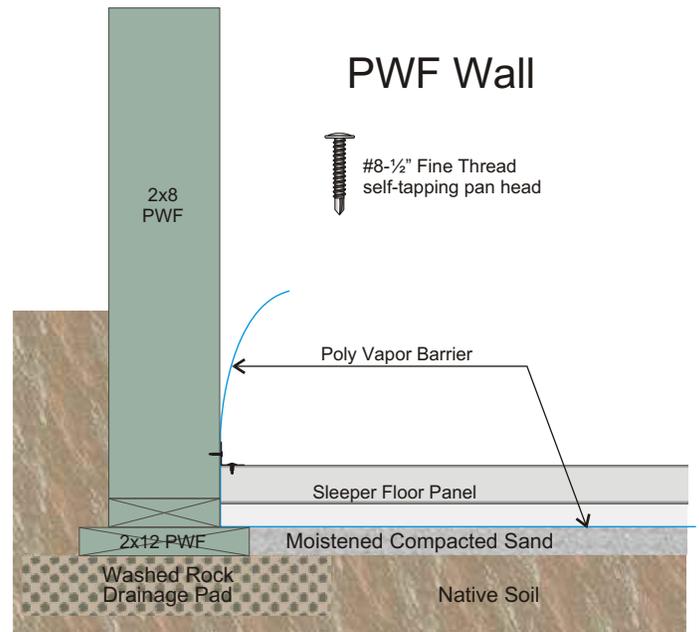
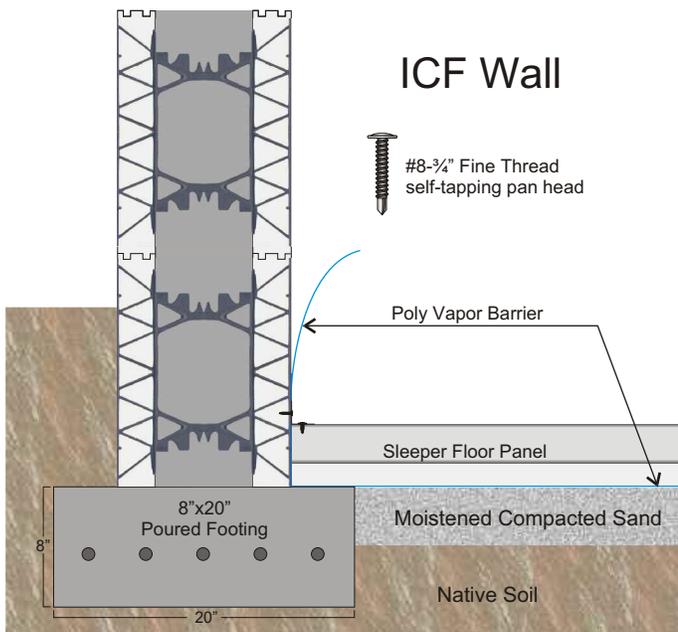
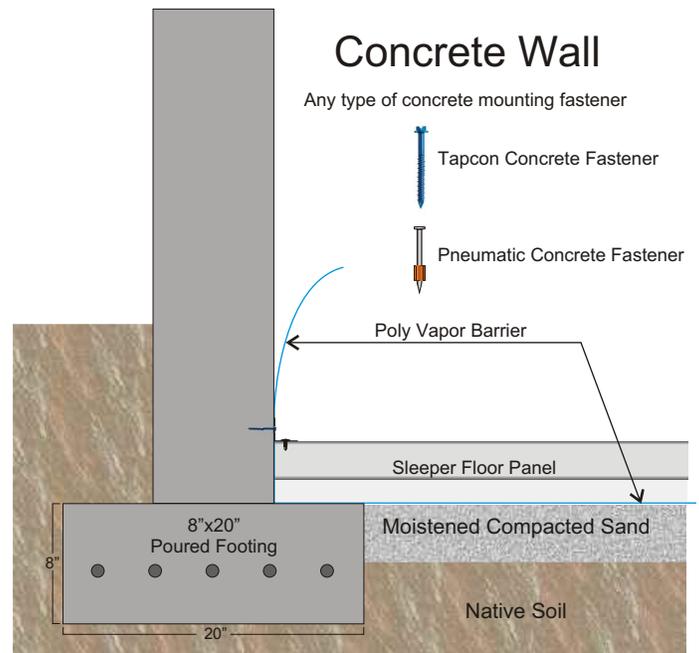
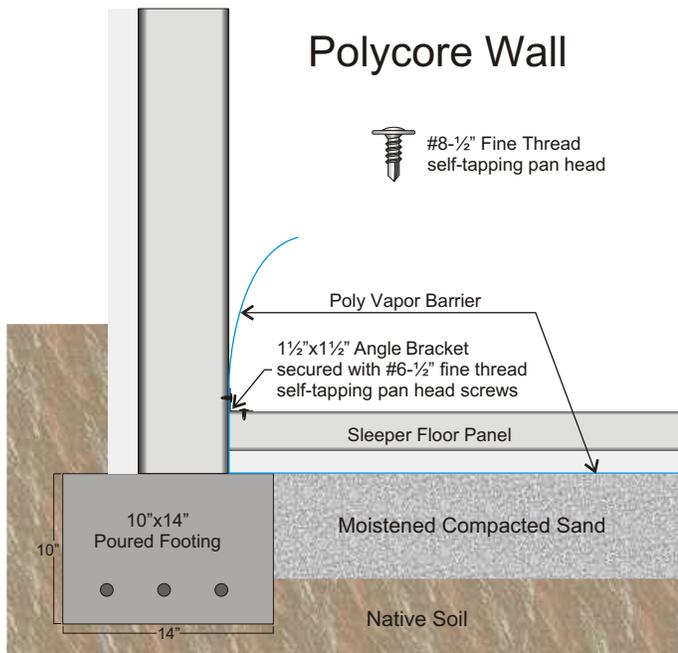
# Installation Manual

## Polycore Sleeper Floor System

# Angle Bracket Wall Fasteners

### Polycore Floor Works With Most Wall Types

The 1½"x1½" angle bracket is used to secure the floor panels around the perimeter of your space. Depending on the wall material, it will require different fasteners to anchor to the wall, but will always be screwed to the floor panel studs using #6-½" self-tapping pan head screws (supplied).



# Installation Manual

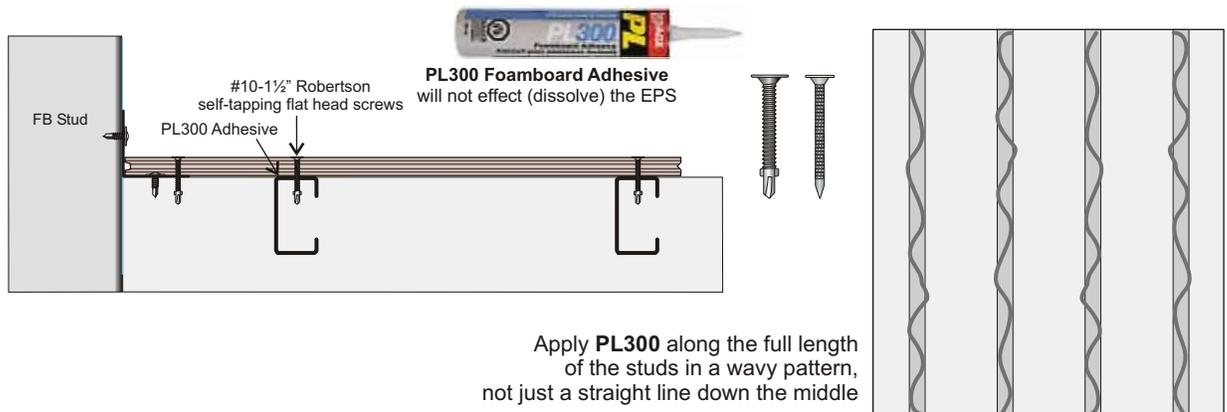
## Polycore Sleeper Floor System

# T&G Plywood

### Placement of Plywood

**Note:** If you have purchased the 'Proud' Sleeper Floor package, be sure you have your hydronic heating system and pex line installed before proceeding to lay down your 3/4" tongue & groove plywood.

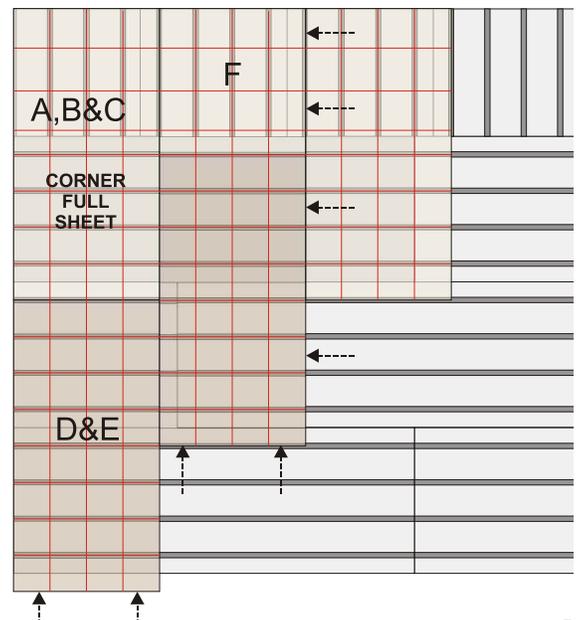
The entire Sleeper Floor is finished with a sheathing of 3/4" T&G plywood laid and secured with adhesive (PL300 Foamboard Adhesive is recommended) and #10-1 1/2" Robertson self-tapping flat head screws or 1 1/2" Gyp-Fast nails.



Plywood is laid out perpendicular to the run of the fill panels. As in the floor system panels, it is critically important to stagger the plywood seams.

- Start by dry fitting your corner sheet (mark stud on plywood sheet).
- Remove sheet and apply a generous bead of PL300 on top of studs.
- Lay and secure board using screws or nails listed above.
- Repeat this process along the entire row (be sure to lock sheets tightly before securing).
- At the end of your row, cut your last piece for a perfect fit.
- Start the next row, from the same side you began the first row, with a half sheet of plywood creating a staggered install - similar to sheathing a joist floor.

**Note:** Always make sure your plywood joints are sitting on a stud for optimal strength.



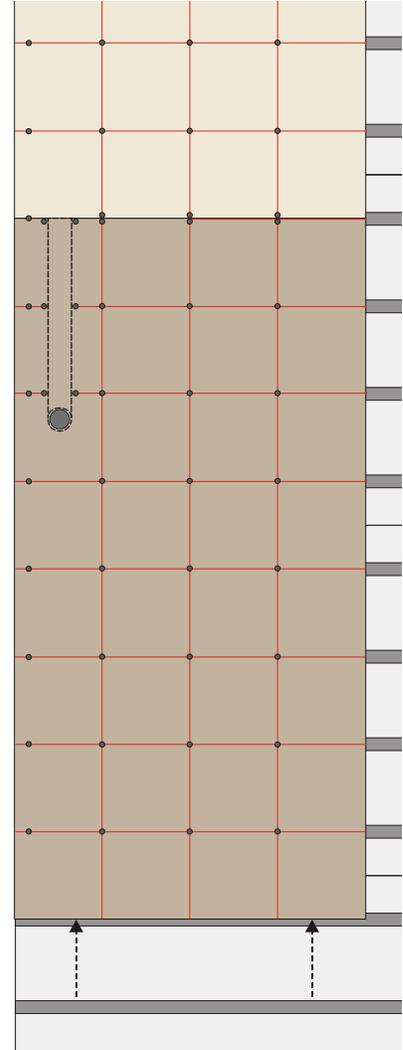
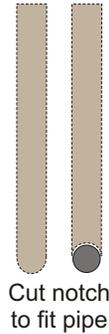
# Installation Manual

## Polycore Sleeper Floor System

# T&G Plywood Around Plumbing and Support Columns

### Fitting around Plumbing and Support Columns

1. Carefully measure and mark plywood for cut-out section so it will slide into place around the pipe.
  - this cut out piece should run over at least 2 studs
2. Install and secure sheet of plywood.
3. Replace the cut out and secure with screws on either side.
  - cut out an inverted notch to fit to pipe
  - glue and secure



If you have any questions or concerns please feel free to contact;  
Polycore Canada at 780-477-2377 or [info@polycorecanada.com](mailto:info@polycorecanada.com)