

# SubRay Radiant System

## Header Stick

Holds radiant pipe at each end of the room on 8" centers.

## Sleeper

6" wide and installed 2" apart. Sleepers support the finish floor.

## Corner Sweep

Helps RadiantPEX+™ make 90° turns.

## Gripper

Used to hold RadiantPEX+ where it enters or exits the floor.

## Reflective Tape

Reflects radiant energy to the floor.

## Aluminum Conduction Layer

Unrolled and fastened to the SubRay subfloor. Evenly spreads the radiant heat.

## C-Cover

Protects radiant tubing from nails, and supports tile backer board.

## SubRay is a Great Alternative to a Thin Slab

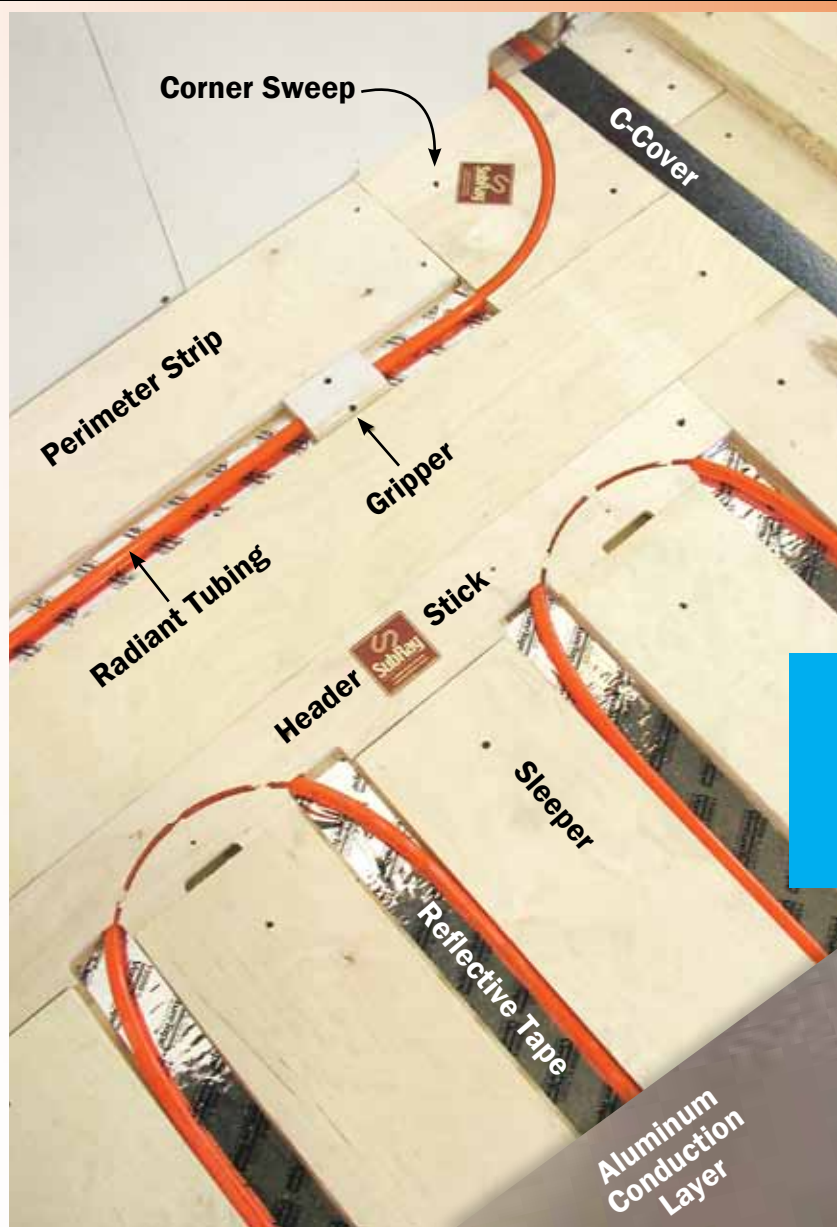
SubRay is an easy way to install radiant floor heating on top of existing frame or slab floors. SubRay can be installed as a whole-house heating system, or used to heat a basement or room addition.

## Compared to thin slabs, SubRay is:

- **THIN** – 5/8" or 3/4" thick.
- **LIGHTWEIGHT** – less than 2 lbs. per sq. ft.
- **FAST RESPONDING** – twice as responsive as gypsum-based concrete.
- **AN EASY INSTALLATION** – No need to wait weeks for the slab to cure. No scheduling problems with separate subcontractors.
- **MOISTURE-FREE** – No hundreds of gallons of moisture to manage.

## Compared to other thin slab alternatives, SubRay is:

- **CLEAN** – No messy silicone needed.
- **TWO SIZES** – 15 mm (5/8") for 3/8" RadiantPEX+, or RadiantPEX-AL; 18 mm (3/4") for 1/2" RadiantPEX+, RadiantPEX-AL, or Onix.
- **SILENT** – Floating design. Won't pop or squeak like some aluminum plate systems.
- **QUALITY** – Cabinet-grade, Group 1 Baltic Birch. Meets specs of all wood flooring manufacturers.
- **ECONOMICAL** – Uses standard ASTM tubing and fittings.



SubRay is the perfect radiant system for either Onix, RadiantPEX, or RadiantPEX-AL tubing.



## Installing SubRay is Fast and Easy



**1** Select location of supply/return manifolds, and lay out Perimeter Strips and Corner Sweeps around the walls.



**2** Fasten down Header Sticks and Sleepers, adding Corner Sweeps as needed for turns (not needed for Onix). Maintain a 2" space between Sleepers using a chalk line as a guide.



**3** Lay the Reflective Tape inside the radiant channel.



**4** Using a screwdriver, pop up the Plate on the Header Stick.



**5** Take the slack out of the radiant tubing in the radiant channel, and push the tubing into the Header Stick.



**6** Tap the Plate back into place with rubber mallet and screw down. Header Plates are not needed for Onix installations.

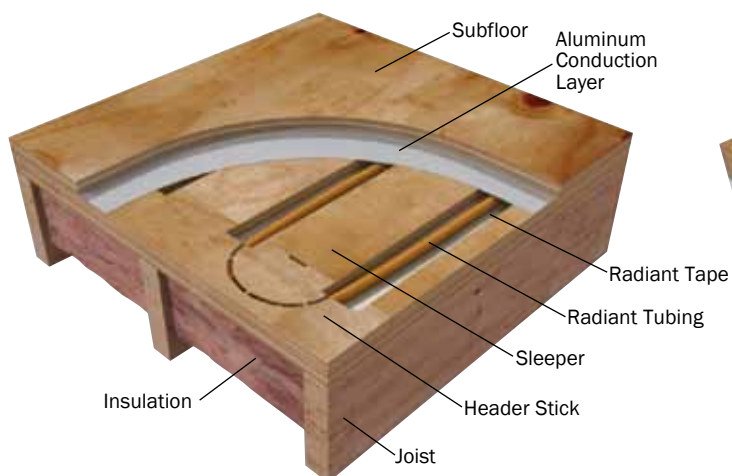


**7** Roll out the Aluminum Conduction layer. Leave 1/2" between each row so you can see the radiant tubing underneath.

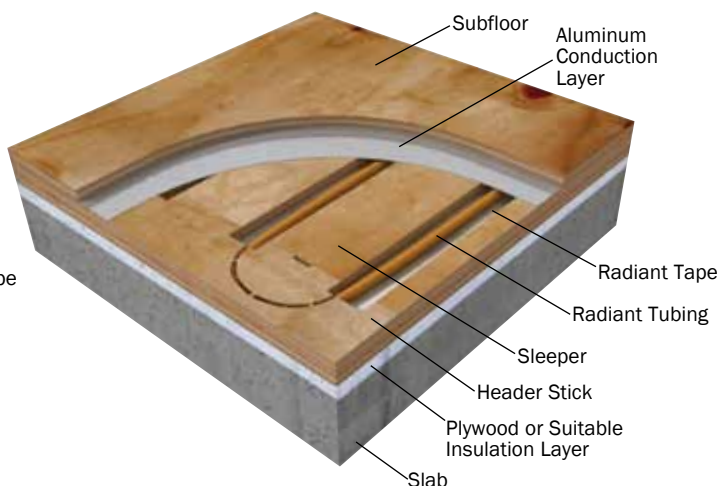


**8** Lay down the finish floor and let your feet enjoy the best heat there is!

## SubRay Over Frame Floor



## SubRay Over Slab



# SubRay Radiant System



## Header Sticks

Approximate Number of SubRay Components per 100 sq.ft.	
Header Sticks	6
Sleepers	30
Corner Sweeps	2
Grippers	2
Reflective Tape Rolls	0.5
Aluminum Conduction Roll	1.5
C-Covers (whole floor)	37.5
C-Covers (partial floor)	5

For complete design and sizing guidelines, see the SubRay manual at [www.wattsradiant.com](http://www.wattsradiant.com)

DESCRIPTION	QTY	MODEL #	ORDER #	WT. (lbs)
862 Header Stick, 15 mm (3" x 42")	10	862HS1542-10	81002024	20
862 Header Stick, 18 mm (3" x 42")	10	862HS1842-10	81002027	25

Cabinet-grade Baltic Birch **Header Sticks** are used to hold loops of radiant tubing at opposite ends of a room. Our unique design holds PEX without squeaking or popping. Order 15 mm components for 3/8" PEX or PAP; order 18 mm for 1/2" PEX, 1/2" RadiantPEX-AL or 3/8" Onix. The header sticks are CNC routed to precise dimensions to give you a precision-fit radiant subfloor. We use only Group 1 density or better as required by hardwood floor manufacturers to ensure fastener holding capacity. Each stick is 42" long and contains three bends. If using strip hardwood flooring, run sticks the same way as (parallel to) the flooring. Allow for enough length of Header Sticks to run along two opposite walls, or no fewer than six Header Sticks per 100 sq.ft.



## Sleepers

DESCRIPTION	QTY	MODEL #	ORDER #	WT. (lbs)
862 Sleepers, 15 mm (6" x 60")	10	862S1560-10	81002033	50
862 Sleepers, 18 mm (6" x 60")	10	862S1860-10	81002036	60

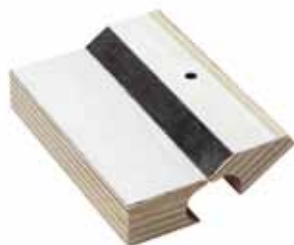
Cabinet-grade Baltic Birch **Sleepers** are installed 2" apart to form the 2" radiant channels that hold the radiant tubing. Sleepers are made in two thicknesses, 15 mm (for 3/8" PEX/PAP) and 18 mm (for 1/2" PEX/PAP and 3/8" Onix). Allow about 30 Sleepers for each 100 sq.ft. of floor.



## Corner Sweeps

DESCRIPTION	QTY	MODEL #	ORDER #	WT. (lbs)
862 Corner Sweep, 15 mm (8" x 8")	10	862CS15-10	81002012	11
862 Corner Sweep, 18 mm (8" x 8")	10	862CS18-10	81002015	12

**Corner Sweeps** are made of Group 1 rated Baltic Birch. This CNC-routed piece provides a nailing surface where the PEX turns a corner between the Header Sticks. Most rectangular rooms will need one or two Sweeps per pipe circuit. For complex rooms see the SubRay Manual for guidance.



## Grippers

DESCRIPTION	QTY	MODEL #	ORDER #	WT. (lbs)
862 Gripper, 15 mm	10	862G15-10	81002018	1
862 Gripper, 18 mm	10	862G18-10	81002021	1

**Grippers** are made of Group 1 Baltic Birch and are used for holding PEX tubing. Holds down with one screw. Use two Grippers for each PEX/PAP circuit, where it enters/leaves the floor.

## SubRay Radiant System

### 2" Reflecting Tape



DESCRIPTION	QTY	MODEL #	ORDER #	WT. (lbs)
862 Reflecting Tape, 2"	2	862RT2-2	81002031	4

The tube in the radiant channel emits infrared heat. The **2" Reflecting Tape** helps reflect heat back to the floor above. Use a tape dispenser to speed up the installation. Use one roll for each 240 sq.ft. of floor.

### Aluminum Conduction Roll



DESCRIPTION	QTY	MODEL #	ORDER #	WT. (lbs)
862 Aluminum Roll, 16" x 50'	2	862AC1650-2	81002930	20

Install Aluminum Conduction Rolls above the Sleepers, not below. Locating aluminum above the pipe reduces thermal striping. Try it and see for yourself. Each strip should be spaced about 1/2" apart, and installed perpendicular to the Sleepers. Do not cover the Header Sticks with aluminum if your finish floor is nailed down. Use one roll for every 70 sq.ft. of heated floor.

### C-Covers



DESCRIPTION	QTY	MODEL #	ORDER #	WT. (lbs)
862 C-Cover, 15 mm (2" x 4')	10	862CC1548-10	81002007	25
862 C-Cover, 18 mm (2" x 4')	10	862CC1848-10	81002009	30

**C-Covers** (optional) are heavy steel covers that fit in the radiant channels. They come in 15 mm and 18 mm thickness. Typically used to protect supply/return lines that may run parallel to nailed strip flooring. Also used under tile floors to support cement boards. Protects the tubing against errant nails or other fasteners. See manual for more applications.



### The Word from the Field about SubRay . . .

"Great product with tremendous design flexibility. Working an eight-sided floor plan was a snap with SubRay."

—Dave Yates  
F. W. Behler, Inc.