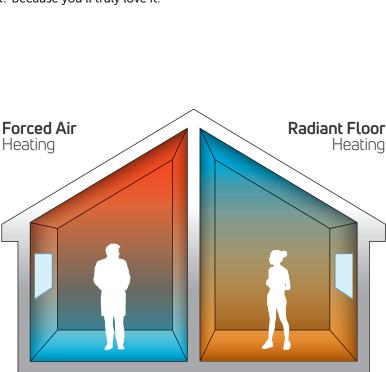


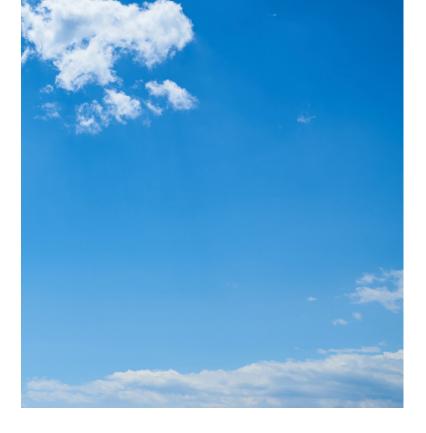


# WHY RADIANT?

So many design choices you may make for your new home or remodel affect how your home looks. Which is important. But radiant affects how your home feels. Which is even more important. In a word, it makes your home feel 'right'. Like that windless, perfect spring day when you're walking outside in shorts and a t-shirt, and instead of the discomfort of feeling a little too cold or a little too hot, or that it's a little too windy, you feel just 'right'. The wind is so calm it's quiet enough to hear the beating of a hummingbird's wings. You have this glorious sense of well being in every square inch of your body. That wonderful feeling is the very definition of comfort. And perhaps you regret that every day outside is not this perfect. Radiant brings that delightful sensation of that perfect spring day right into your home, in every room, every hour of every day, no matter what the weather is doing outside. Why radiant? Because it's the one upgrade to your home that affects every square inch of your home, improving the lives of everybody who lives there.

Why radiant? Because you'll truly love it.





# Forced Air is Annoying

Forced air heating has been the standard in North American homes since the end of World War II. While it's the cheapest way to meet the building code's minimum heating requirements, it will not create a comfortable, energy efficient or healthy home. The very nature of forced air heating makes it difficult to control, always heating spaces unevenly while providing minimal comfort with high operating costs. These noisy systems turn on and off all day and night, blasting hot, dusty, and allergen-laden air to every corner of your home. You may find yourself wrapped in a blanket downstairs where it's too cold, only to shed layers upstairs where it's too hot. Kicking the covers on and off all night, while being disturbed by the constant on-off cycling of the blower and getting a poor night's sleep. Simply put, whether you are building new or remodeling, forced hot air is simply not acceptable for your dream home.

# WHY WARMBOARD.

Although the completed "all in" price of all radiant systems, including Warmboard, are similar, we've never set as our goal to be the cheapest option. Our goal is simply to be the best, without compromise. This company-wide dedication to being the best is evidenced not only in our products but especially in every Warmboarder you will come into contact with.



# We Stand Apart

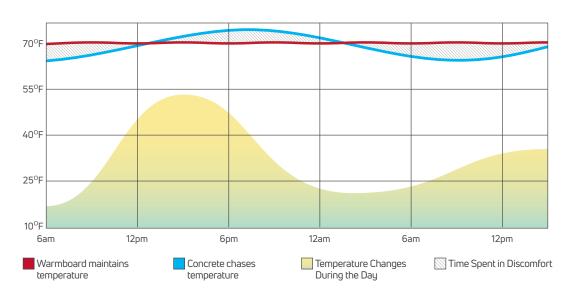
For decades, radiant floor heating was synonymous with "high mass" concrete systems which are heavy, uncomfortable to walk on, and extremely slow to provide heat. Warmboard changed the industry by providing a low mass, highly conductive panel that integrates seamlessly with conventional construction methods.

Today, Warmboard is the leading provider of radiant panels in North America, outperforming every other system with faster response times, easier installations, lower energy use and unparalleled comfort.

## Performance

We are the only radiant panel that uses thick, continuous/unjointed, highly conductive aluminum to evenly heat every square inch of your dream home. Our Warmboard panels can adjust to changing heat loads 3-7 times faster than any other radiant system. This is essential when dealing with rapid outdoor weather and temperature changes or when using energy saving setback functions when you're at work, asleep or on vacation. This fast response allows our systems to use the lowest water temperatures, compared to every other radiant panel, for additional savings.

Other methods produce uneven surface temperatures, but Warmboard distributes heat evenly, protecting your investment in hardwood flooring. These benefits combined with the ease of installation have allowed Warmboard to become the preferred radiant panel by architects, builders and homeowners.



## Smarter, not Harder

The installation of a hydronic radiant system has always been complex, involving numerous vendors and multiple time lines. Boiler rooms looked more like they belong on a nuclear submarine than your home. Just as Warmboard changed the radiant industry over 20 years ago, we've transformed it again.

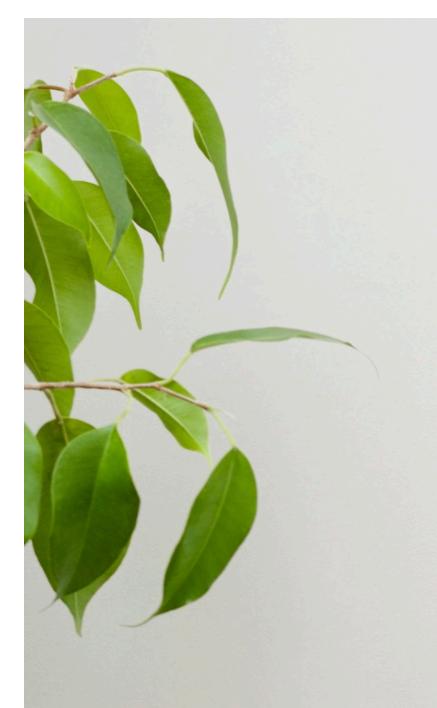
Our Warmboard Comfort System bundles all the necessary components for a complete, integrated, and modern radiant floor heating system. Every aspect of the design and manufacturing of our products has been engineered to maximize performance, without sacrificing efficiency. The high conductivity of our panels requires the lowest water temperatures, decreasing energy use (and energy bills) while extending the life of the mechanical equipment. Finally, radiant floor heating is simple.

# **Quality Care**

While we're very proud of the quality and performance of our products, we take even greater pride in providing any support you may need throughout the construction process.

When you call Warmboard, the first thing you will hear is the voice of one of our US-based radiant experts who will be there to answer your questions and walk you through the process. Combined with custom plan sets, easy to understand installation manuals and dedicated technical support, even field support if necessary, we ensure every project goes smoothly. With over 40 million square feet sold from Alaska to Antarctica, California to New York, know that you're in good hands.







# Everything needed for a state-of-the-art radiant heating system

# WARMBOARD COMFORT SYSTEM



All components are custom engineered to function perfectly together and precisely realize your aspirations for the ultimate in radiant comfort. Our Warmboard Comfort System can be easily installed by a general contractor or journeyman plumber in just a few hours. This is because all components are pre-commissioned, tested, and assigned unique wireless network address codes before we ship them to you. To ensure no mistakes during installation, all components are color coded to match the color codes on your custom plans – as simple as paint by numbers. It's an elegant plug and play approach that will wring many days of costly labor out of the installation process. There's no need for a complicated set up, specialized trades or a large, dedicated mechanical room. Enjoying radiant heat has never been this easy or affordable.

#### WCS includes:

- A comprehensive room-by-room heat loss analysis as the starting point for custom engineering your home's system
- Personalized WCS Design Drawings showing panel, tubing, plumbing and electrical layouts for your individual project
- ▶ Warmboard radiant panels, tubing, manifolds, Manifold Controller(s) and plug-and-play actuators
- ► Warmsource, our "mechanical room in a box" with a pre-commissioned boiler (or heat pump), plumbing components and controls
- ▶ Our patented Smart Reset technology which ensures maximum comfort and energy efficiency
- ▶ Wireless thermostats which combine beauty and ease of use







#### Warmsource-NG or -LP

As the heart of the Warmboard Comfort System, Warmsource requires only a tiny footprint in your floor plan. What used to waste many square feet in a boiler room is now pre-plumbed and pre-wired in a simple, compact and attractive wall-mounted cabinet. Warmsource contains an ultra-efficient boiler plus all the necessary hydronic and electronic components, including our amazing Smart Reset Controller (SRC). Traditional systems of the past required the complexities of individually designing, sourcing, laying out, then custom assembling these components using highly specialized (costly) labor. What took days to complete can be accomplished with Warmsource in hours by the same trades already building the rest of your home.

#### Warmsource-HP

Our latest solution is heat pump powered radiant. Yes, heat pumps allow us to lower our carbon footprints, but until our engineers performed their magic, they were complicated to size and source all the equipment needed. That complication required excess amounts of costly specialized labor, further driving up cost. We applied all of our experience with making gas powered boiler room installs easier and therefore lower in cost to provide the world's first fully pre-commissioned plug and play radiant system using a heat pump. And our lowest in the industry water temperatures mean we maximize the performance of your heat pump.

#### Smart Reset Controller

Both our original Warmsource and our new Warmsource-HP employ our proprietary SRC technology. It communicates wirelessly with the manifold controllers and thermostats to precisely control and modulate temperatures for each zone. There's no need for a specialist's calculations, it's all done automatically by our proprietary algorithms. The SRC is a smarter approach which reduces labor through less complex and therefore less costly installations, improves response times, and maximizes energy efficiency. In fact, the SRC can control room temperatures within one degree while standard heating systems use a three to five degree range. These factors bend the cost curve down while bending the comfort curve up.

#### Manifold Controller

Installed inside each manifold cabinet, the MC connects to the actuators and wirelessly communicates with the SRC to open and close valves, optimizing temperatures in every zone.

## **Thermostats**

Designed to blend in naturally with your home's decor, our thermostats are elegantly easy to use. The touch-screen, high resolution e-ink displays offer intuitive control for every zone in your house. With easy to follow on-screen instructions and a user-friendly interface, you won't need to read a manual to enjoy all the programming options. Whether heating, cooling, or enjoying our floor-warming feature for bathrooms, these thermostats ensure constant comfort.

#### Bridge

The Bridge connects to the Internet through a secure and hidden wireless network to update essential software and maintain an accurate date and time across all thermostats. The Bridge also allows us to remotely diagnose performance issues without compromising your privacy. Finally, you will be able to use your smart phone to access Vacation Mode, a setting which maintains a minimum temperature of 55°F while you are away for extended periods of time.



# WARMBOARD RADIANT PANELS

For decades. Warmboard's award-winning panels have been leading the industry with superior conductivity, rapid response, consistent floor temperatures and ease of installation. Our panels are bonded to highly conductive and virtually pure 1070 aluminum alloy. The surface features pre-formed tubing grooves. Once installed, a continuous serpentine channel is created, allowing for easy installation of the tubing, and a uniform surface to heat every square inch of flooring. Our panels are American made using responsible forestry and manufacturing practices.

We offer two panel products.

#### Warmboard-S

As a code-approved structural subfloor, Warmboard-S is perfect for new homes, installing directly over joist or slab. Made from 7-layer Douglas Fir plywood, Warmboard-S is exceptionally strong and rigid. These tongue and groove panels measure  $4^\prime x\,8^\prime$  and are  $1^{1/8}^\prime$  thick. Four panel types will accommodate any design configuration.



#### Warmboard-R

Designed specifically for remodels and retrofits, this smaller, thinner panel is ideal for installing over existing subfloor or slab. Warmboard-R can also be used in the walls or ceiling which is especially convenient when the existing floor cannot be altered. Made with durable OSB, panels measure 2'x4' and are  $^{13}/_{16}$ " thick. Warmboard-R is available in two panel types.





There's a reason pots and pans are made with thick aluminum and not concrete. Aluminum conducts heat hundreds of times better.





## Smart Design

Architects truly appreciate the simplicity and superiority of our products. Warmboard removes many limitations architects are accustomed to, including the placement of wall and floor vents, duct work, and baseboard or wall radiators which also limit interior design options. Also eliminated are the non-standard framing details and structural issues associated with the weight and thickness of the outdated radiant slab technique. The Warmboard Comfort System removes the need for an oversized, dedicated mechanical room which gives valuable square footage back to the living space and the homeowner.

For those pursuing the ultimate in green construction, Warmboard panels are built with sustainable forestry, non-toxic chemicals and can make significant contributions to LEED ratings.

## **Detailed Documentation**

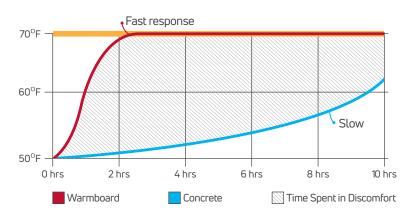
Using your designs, we provide a custom set of construction drawings to bind into your plan set, ensuring consistent and competitive bidding of the radiant system. Apples to apples competitive bidding will also save your client's money. Our documents provide contractors with the information needed to bid and install Warmboard using best practices. Our professional standards also streamline approvals by code officials.

# Limitless Flooring

Many radiant heating methods, specifically slab-based systems, inhibit your choice of finish flooring. Moisture concerns and the difficulty of fastening hardwood over concrete is both complicated and expensive. But Warmboard provides a surface that allows hardwood to be easily nailed and/or glued in place. Tile and stone are installed with conventional methods used with more ordinary subfloors. Warmboard is the only radiant panel approved to be used with all common hardwood and tile adhesives. And our powerful conductivity means thick, luxurious carpets and rugs are not a problem. Warmboard gives you total design freedom by not limiting floor coverings that can be used.

# Fastest Response

While high mass, slab-based radiant heating had been the standard for years, it's a dated technology with many limitations and caveats. Just as countless innovations have improved our lives, Warmboard has redefined radiant heat. A highly conductive, low mass Warmboard system means not waiting for heat in the morning or overheating the home in the afternoon. And fast response means you can enjoy the energy savings and great night's sleep made possible by Nighttime Setback. High mass, slow response systems are history. Warmboard is the future.





# Take the guesswork out of your next radiant project

Premium custom homes deserve a quiet, efficient, and healthy heating solution that provides the utmost comfort. Warmboard delivers by saving the homeowner time, space, effort, energy and ultimately money for the duration of their home ownership.

## Simple

Radiant floor heating has a reputation of being costly and complicated to design and install, due in part to the high labor costs that previous radiant methods required. From our high performance panels to our revolutionary Warmboard Comfort System, we've engineered solutions to wring labor costs out of the installation, greatly simplifying this process while increasing the living space through a smaller mechanical footprint. Our design drawings are simple and easy to read, allowing your current workforce to use their existing skills with no need to worry about additional or specialized training.

#### Faster Installations

Warmboard panels work seamlessly with conventional construction practices. They can be sawn, fastened and installed just like any structural subfloor. Our Warmboard Comfort System installs very quickly using very few components, all of which communicate wirelessly, with no networking knowledge required –just plug and play. Every project includes custom construction drawings which show all the necessary installation details, from panel and tubing layouts, to plumbing and electrical, enabling a smooth work flow. Outsourcing to highly specialized and costly "radiant experts" is no longer required. Your regular crew of journeymen carpenters and plumbers already have all the skills required to quickly and correctly install all Warmboard products.

# Stand Apart

It's important to differentiate yourself in an increasingly commoditized premium home market by meeting the demands of homeowners. Stand out from your competition by offering your customers the best performing radiant system while reducing your risk of cost overruns or call backs. Homeowners have repeatedly confirmed that having Warmboard has made a remarkable difference in the enjoyment of their home. Construction is a word-of-mouth business and contractors are always pleased when Warmboard brings in that next referral.



