Construction

Automotive

Industry





HIGH EFFICIENCY RADIANT AND RENEWABLE SOLUTIONS BROUGHT TO YOU BY KLIMATROL AND REHAU



KLIMATROL AND REHAU INTEGRATED THINKING FOR SUSTAINABLE BUILDING

Klimatrol and REHAU have been successfully working together for more than 17 years, providing radiant heating and cooling systems to thousands of jobs. Radiant heating and cooling technology and other high-efficiency hydronic solutions give architects, building owners and engineers new options for reducing energy consumption and a building's carbon footprint.

Since 1994, Klimatrol Environmental Systems has been supplying radiant floor heating and cooling, outdoor snow and ice melting and integrated hydronic solutions to the construction industry. Klimatrol specializes in supplying hydronic heating equipment. Klimatrol provides shop drawings, field application support and installation inspection. Klimatrol's experience and services help to achieve the goal of optimizing a building's performance throughout its life cycle.

Since 1948, REHAU has been a global leader in sustainable construction, designing and manufacturing innovative building technology and renewable energy solutions. REHAU is a pioneer and world leader in crosslinked polyethylene (PEXa) technology and its application in radiant heating and cooling, geothermal and other building services. Today, REHAU addresses sustainable design priorities by engineering products that enhance comfort and convenience, reduce energy cost, create healthy and safe environments, and conserve finite resources.

Whether you are working on a project intended for LEED[®] certification, an energy retrofit of an existing building or designing a net-zero energy structure, Klimatrol and REHAU can help you achieve a truly sustainable design.





REHAU's high quality crosslinked polyethylene (PEXa) pipe offers simple, fast installation and provides years of comfort and energy savings.

SYSTEM COMPONENTS RAUPEX PIPES



RAUPEX[®] is REHAU's trade name for our crosslinked polyethylene (PEXa) pipe manufactured using a high-pressure peroxide extrusion method, which enhances temperature and pressure capabilities, as well as long-term strength.

Manufactured by REHAU under a quality management system which has been certified to the latest version of ISO 9001, RAUPEX has a 25-year limited warranty.

Mechanical Properties

A high degree of crosslinking results in a robust pipe with enhanced temperature capability, flexibility and long-term strength. RAUPEX is tough and flexible, even with repeated bending, and can withstand typical jobsite abuse.

Oxygen Diffusion Resistance

Diffusion of oxygen into closed hydronic systems is an important design issue. RAUPEX O_2 Barrier pipe features a co-extruded barrier of ethylene vinyl alcohol (EVOH) that limits the diffusion of oxygen through the pipe wall to below 0.32 mg/m²/day at 104°F (40°C) per German standard DIN 4726.

Ultraviolet Resistance

RAUPEX O_2 Barrier pipe contains stabilizers to protect the pipe from short-term exposure to ultraviolet radiation (UV) from sunlight, as well as a coloured adhesive layer to block UV. The pipe's UV resistance of up to 3 months, according to test method ASTM F2657, is among the best on the market.

Chlorine Resistance

RAUPEX pipe has been third-party tested in accordance with ASTM F2023 for resistance to hot, chlorinated water, and is listed by PPI TR-4 and NSF.

Chemical Resistance

RAUPEX is resistant to a wide range of chemicals, including propylene and ethylene glycols.

Freeze Break Resistance

RAUPEX pipe will expand when frozen, rather than cracking or splitting, as long as it has room to expand along its entire length.

Sizes

RAUPEX pipe is available in eight sizes:

- 3/8, 1/2, 5/8, 3/4, 1, 1 1/4, 1 1/2 and 2 in.
 nominal sizes available in coils
- 3/4, 1, 1 1/4, 1 1/2 and 2 in. nominal sizes available in 20 ft (6.1 m) straight lengths

Ratings

RAUPEX is listed with the Plastic Pipe Institute (PPI) for continuous pressure even at high temperatures. In accordance with PPI TR-3, it has the following continuous use ratings:

- 80 psi at 200°F (550 kPa at 93.3°C)
- 100 psi at 180°F (690 kPa at 82.2°C)
- 160 psi at 73.4°F (1105 kPa at 23°C)



Standards and Test Methods

RAUPEX pipe and systems are in compliance with the following standards:

- CSA B137.5, Crosslinked Polyethylene (PEX) Tubing Systems for Pressure Applications
- CSA B214, Installation Code for Hydronic Heating Systems
- ASTM F876, Standard Specification for Crosslinked Polyethylene (PEX) Tubing
- ASTM F877, Standard Specification for SDR 9 Crosslinked Polyethylene (PEX) Plastic Hot and Cold Water Distribution Systems
- ASTM F2023, Standard Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Tubing and Systems to Hot Chlorinated Water
- ASTM F2080, Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Crosslinked Polyethylene (PEX) Pipe
- ASTM F2657, Standard Test Method for Outdoor Weathering Exposure of Crosslinked Polyethylene (PEX) Tubing
- ASME B31.9, Building Services Piping
- DIN 4726, Pipelines of Plastic Materials Used in Warm Water Floor Heating Systems; General Requirements (for oxygen diffusion testing of the RAUPEX O₂ Barrier)
- PPI TR-3, Policies and Procedures for Developing Hydrostatic Design Bases (HDB), Pressure Design Bases (PDB), Strength Design Bases (SDB), and Minimum Required Strengths (MRS) Ratings for Thermoplastic Piping Materials or Pipe

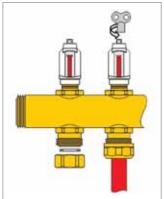
Code listings and designations are subject to change.

PLASTICS · PIPE · INSTITUTE

SYSTEM COMPONENTS

PRO-BALANCE MANIFOLDS





REHAU PRO-BALANCE[®] manifolds are designed and built with the professional in mind, taking the guesswork out of installations.

PRO-BALANCE manifolds give professional installers the ability to:

- Pressure-test piping circuits through the manifold
- Balance and monitor flow rates for each zone
- Eliminate entrained air manually or automatically
- Monitor supply and return fluid temperatures
- Use 24V electric circuit actuators for zone control

Features and Benefits

- Quality construction using extruded thick-wall brass pipes
- Available with 2 to 12 outlets without couplings
- Available in two diameters to accommodate high flow requirements
- Compatible with 3/8, 1/2, 5/8 and 3/4 in. pipe sizes
- Preassembled, saving time on the jobsite
- Flow gauges and balancing valves give the installer a high level of system control
- Flow gauges and balancing valves have integrated shut-off valves for 100% circuit isolation
- Gasketed connections are safe and fast to install without tape or pipe dope

SYSTEM COMPONENTS EVERLOC FITTINGS

The REHAU EVERLOC® cold-expansion compression-sleeve fitting system was developed as a solution to securely join PEXa heating pipes. EVERLOC fittings are offered with an industry leading 25-year limited warranty. ASTM F2080 is the exclusive standard specification for these fittings, which have an unmatched record of reliability.

EVERLOC fittings have a larger inside diameter than other PEX fittings, resulting in superior flow characteristics and less pressure loss. These connections are so reliable you can install them behind a wall or even encase them in concrete (with approved corrosion protection).

Features and Benefits

- Reliable, worry-free connection
- Installs in seconds, in any weather condition
- Larger inside diameter than typical PEX crimp fittings, resulting in excellent flow rates
- May be embedded in thermal mass (with corrosion protection), giving installers the security to safely join pipes virtually anywhere
- No waiting for joint to "set up"
- Visual check to see if fittings are completed
- Certified according to CSA B137.5, ASTM F877 and ASTM F2080 with RAUPEX PEXa pipes
- 25-year warranty





EVERLOC couplings and fittings provide security and peace of mind for any joints required to be buried in concrete.







RADIANT HEATING WARM FEET AND A COOL HEAD FOR OPTIMUM HEALTH AND EFFICIENCY

If you are searching for a more comfortable and more efficient way to heat your space, radiant heating may be the answer. Anyone who suffers with uneven heat or drafts in their home or building knows that the winter months can be just as difficult indoors as they are outdoors. When properly installed, radiant floor heating provides even, comfortable heat at every level and in every corner of your space.

Because of its exceptional comfort at relatively low operating temperatures, radiant heating is very energy efficient. Optimizing the radiant panel design using strategies such as room-by-room zoning can add to your energy savings. Radiant heating can be the primary heat source or serve in combination with auxiliary heating systems. It can be installed almost anywhere heat is needed – residential homes, apartment buildings, office buildings, schools, churches, hospitals, assisted living centers, hotels, shopping centres, factories, auditoriums, barns and warehouses. In all of these spaces, radiant heating provides warm, gentle heat unmatched in comfort, efficiency and flexibility.





Holy Cross Catholic Parish Georgetown, Ontario

9,000 ft (2,740 m) of RAUPEX O₂ Barrier pipe installed.

RADIANT HEATING BENEFITS

Increases Comfort

Radiant floor heating is comfort at its best. Heat is gently radiated throughout the space, virtually eliminating cold spots and temperature fluctuations, while some warm air rises from the floor into the lower portions of the space. A radiant heating system also keeps floors warm and dry, increasing safety in commercial and public spaces.

Improves Health

With radiant floor heating there is less blowing dust due to elimination or reduction of heating ductwork. With lower average air temperatures, relative humidity may also be increased in heating season, improving comfort and health.

Enhances Control

Using low-voltage manifold circuit actuators, a radiant heating system can be zoned with multiple thermostats, allowing occupants to adjust temperatures in a single room or a group of rooms, based on activity and usage levels. This improves comfort and saves energy.

Offers Flexibility

Radiant floor heating pipes embedded within the floor are invisible and waste no space. There are no heaters, radiators or vents, so you'll have more interior freedom and open floor space.

Increases Safety

Radiant floor heating systems are usually designed with floor temperatures no warmer than 85°F



(29°C). This allows designers to eliminate hot surfaces which are sometimes found with hot water baseboard and other high-temperature convectors, which can create potential safety hazards.

Eliminates Noise

Radiant floor heating is quiet, with no fans, no ticking convectors and no air noises.

Improves Energy Efficiency

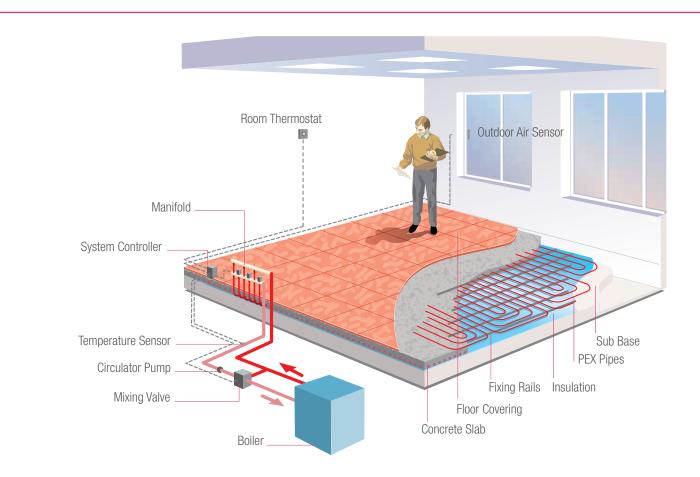
Radiant heating works with low-temperature fluid and can be used with a variety of heat sources including geothermal heat pumps, solar collection systems and condensing boiler technology.



Mercedes-Benz[®] dealership Burlington, Ontario

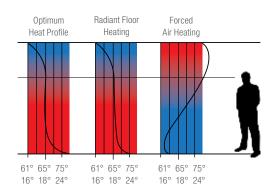
54,000 ft (16,500 m) of RAUPEX O_2 Barrier pipe and 16 PRO-BALANCE manifolds were installed.

RADIANT HEATING



The REHAU radiant heating system works by circulating warm water through a network of pipes placed in the floor, wall or ceiling panel. Heat is gently radiated from the panel, warming the surfaces, objects and air in the room to create a comfortable environment.

Radiant heating is compatible with a variety of floor coverings including engineered hardwood, carpet, vinyl, ceramic, tile and natural stone. Uncovered concrete, which is often treated, provides no resistance to heat transfer.



Radiant floor heating provides a more correct heat profile for optimum comfort.

There are several methods for installing the system on floors, walls and ceilings – each with its own unique advantages. Klimatrol can assist with determining the best construction technique for your project.

Concrete Slab

Pipes can be installed within a normal concrete slab. It is very important to use insulation under a heated slab for optimal efficiency and response time.

Concrete Overpour



Pipes can also be installed above suspended wood floors and encased in a thin concrete overpour, usually 1.5 in (38 mm) thick.

RAUPLATE[™] Joist Space



Aluminum heat transfer plates are installed directly under the subfloor to conduct heat from the pipes. Joist space installation is ideal for retrofit construction.

RAUPANEL[™] Dry Panel



Pipes are snapped into low profile aluminum heat transfer panels on top of a suspended wood floor or existing slab. This system delivers the best heating efficiency and response time.

RADIANT COOLING BENEFITS





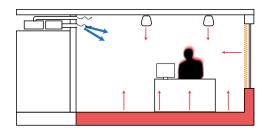
At the École Secondaire Jeunes Sans Frontières in Mississauga, Ontario, 104,700 ft (31,900 m) of 5/8 in. RAUPEX O₂ Barrier pipe were installed in a concrete-embedded, slab-on-grade design, using a counterflow spiral patterm to promote even surface temperatures.

Increases Thermal Comfort

The human body feels at its best when regulating at least 50% of its heat emission via radiation. Radiant cooling reduces surface temperatures of the surroundings, allowing occupants to raise thermostats a few degrees while still maintaining the same level of cooling. This provides a comfortable environment while minimizing drafts and ventilation noise.

Improves Energy Efficiency

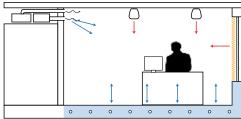
Radiant cooling operates with moderate water temperatures and reduced ventilation levels. This can lead to a significant reduction of energy consump-



tion and carbon footprint. The efficiency of a radiant cooling system can be further enhanced with the integration of a water-to-water geothermal heat pump system.

Reduces Costs

Compared to traditional forced-air cooling, hybrid radiant cooling systems can reduce both initial and operating costs. First, due to the reduction in sizing for the air handling equipment, typically by 45%, and second, due to the efficiency gains of the radiant cooling system, with reduced cooling load and the increased efficiency of hydronics.



Spaces with 100% forced-air cooling systems (left) have higher mean radiant temperatures due to solar gains and office equipment. A hybrid radiant cooling system (right) lowers surface temperatures, reducing overall forced-air requirements and ventilation noise.

RADIANT COOLING HOW IT WORKS

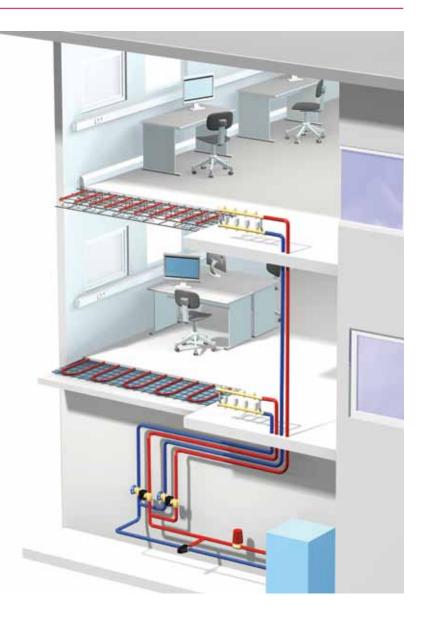
By circulating cooled water, typically 60 to 65°F (16 to 18°C) MWT, through pipes embedded in the building's structure, radiant cooling evenly absorbs heat energy from a room, eliminating drafts and hot spots. A radiant cooling system is typically designed in conjunction with radiant heating, and achieves best results when combined with other energy-efficient systems in the building structures.

Radiant cooling works best in a tightly sealed building, with supplemental ventilation and humidity control, either to meet the building's fresh air requirements or to meet peak cooling loads.

The capacity of a radiant cooling system depends on factors such as insulation, pipe spacing, floor construction and floor covering. Under optimal design conditions, capacities of up to 16 Btu/h·ft² can be achieved,¹ with more typical capacities in the 8 to 12 Btu/h·ft² range. Ceiling systems can achieve nearly double this output.

Klimatrol has years of experience with successful radiant cooling systems. Klimatrol's sales technicians can assist with designing radiant cooling systems, especially when integrating with radiant heating systems.

¹Olesen, Bjarne. *Radiant Floor Cooling Systems*, ASHRAE Journal, September 2008.



SNOW AND ICE MELTING BENEFITS



The Grand River Hospital in Kitchener-Waterloo, Ontario, recognized that snow and ice melting is a must for patient and employee safety and convenience.

Increases Safety

Snow and ice melting (SIM) systems eliminate snow and ice build-up, increasing the safety of surfaces where people walk and drive. By keeping your residence or place of business free of these dangerous elements that can cause accidents, SIM systems also reduce your liability exposure.

Provides Convenience

SIM systems provide the ultimate in convenience, by eliminating time-consuming snow removal along with its associated health risks such as stretched muscles, aching backs and heart attacks.

Offers Cost Savings

A well-designed SIM system is often less expensive to operate than hiring motorized snow removal equipment, delivering significant cost savings during a typical season. It can also reduce indoor maintenance costs by eliminating the wear and tear from salt, sand and water being tracked inside.

Minimizes Environmental Impact

By replacing motorized snow removal and de-icing chemicals with a high-efficiency hydronic SIM system, you can actually reduce your environmental impact. In addition, the life of outdoor surfaces can be extended and damage to outdoor landscaping caused by the weight of snowbanks can be avoided.

SNOW AND ICE MELTING HOW IT WORKS

SIM systems are hydronic systems intended to augment the removal of snow and ice by circulating a heat transfer liquid (usually a glycol and water mixture) through RAUPEX pipe which is installed within the SIM area.

An important feature of REHAU SIM systems is the electronic controls, which can provide fully automatic detection and sensing of snow and ice. By continually monitoring conditions at various outdoor sensors, the electronic control "knows" the outdoor weather, including when there is actually snow or ice on the outdoor surface. The system can turn itself on and off as needed. The control calculates how hot the fluid needs to be without overheating the area and wasting energy. The SIM system will run until the surface is dry.

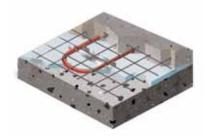
Users have the option to enable an idle function which keeps the system in operation when it is cold, but not actually snowing. By keeping the outdoor surface warmer than ambient temperature, the system responds more quickly when precipitation begins, increasing safety. If the outdoor temperature becomes so cold that snowfall is unlikely, the system can also turn off, saving energy.

Weather and site conditions have significant impact on SIM system performance. REHAU has the engineering and weather data to help you design a system with output capacity geared to conditions in your geographic area. With proper design and installation techniques, our SIM systems will provide long-term performance and reliability in maintaining snow- and ice-free areas.

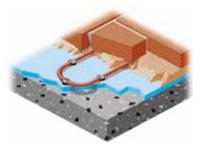


REHAU SIM system will clear pedestrian pathways around the Vaughan City Hall in Ontario.

RAUPEX pipe can be installed in substrates such as concrete, sandbeds and under asphalt using REHAU fastening systems that are designed to ensure fast, economical installations.



SIM installation in concrete using RAILFIX[™] to anchor the RAUPEX pipe onto the insulation.



SIM installation under brick pavers using screw clips to anchor the RAUPEX pipe inside the sand bed.

ENERGY TRANSFER PIPING BENEFITS





Minimizes Energy Loss

Preinsulated INSULPEX[®] pipe is specially designed for the efficient transfer of hot or chilled water through buried pipelines, offering a continuous piping system that minimizes temperature change. This equates to increased efficiency in the mechanical room, and cost savings to the owner.

Offers Flexibility

As an alternative to rigid piping systems, INSULPEX consists of flexible RAUPEX pipe surrounded by a solid layer of CFC-free polyurethane foam insulation. The pipe's flexibility allows it to bend around obstacles, or be directionally bored, offering ease of installation while reducing expensive labor costs.

Provides Long-term Performance

Crosslinked RAUPEX O₂ Barrier pipe offers longterm strength. The high degree of crosslinking in RAUPEX (PEXa) results in a durable, yet flexible, pipe with enhanced temperature and pressure capability. Bury it and forget it!

Streamline Installation

Accessories such as anchors, kickers, and thrust blocks that are required on rigid systems are not required when installing REHAU's INSULPEX system. This is because of the self compensating properties of the ribbed pipe, which locks into backfill, and the dependability of the buryable fittings. Continuous coils, and the availability of a two-pipe configuration, further streamline the installation process.

Reduces Costs

The INSULPEX system can reduce installation costs thanks to its flexibility, long coil lengths and the included insulaion, which all reduces installation time when compared with rigid metal pipes.

ENERGY TRANSFER PIPING HOW IT WORKS

INSULPEX Energy Transfer Pipe

An ideal distribution pipe for hydronic energy transfer applications, INSULPEX consists of RAUPEX O_2 Barrier carrier pipe surrounded by a solid layer of CFC-free polyurethane foam insulation.

INSULPEX is available in one-pipe configurations in carrier pipe sizes from 1 to 2 in. (SDR9 CTS) and 63 to 160 mm (SDR11). The two-pipe configuration (up to 63 mm) combines supply and return pipes, streamlining the installation process.

Connections are made with the REHAU EVERLOC F2080 fitting system, providing reliable joints that allow for immediate pressure testing.

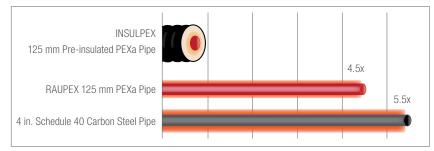
INSULPEX is ideal for:

- Buried supply and return lines for snow and ice melting
- District heating/cooling
- Chilled water
- Process piping
- Hydronic piping
- Remote buildings
- Agricultural applications
- Hospitals, universities and commercial campuses



The continuous single layer of PU insulation minimizes heat loss and water permeability, while the outer LDPE casing offers protection from abrasion.

Relative Heat Loss to the Ground



For a typical buried pipeline with 140°F (60°C) Δ T between mean fluid temperature and surface soil temperature, moist soil conditions and 1,000 ft (305 m) total supply/return pipeline length

GEOTHERMAL GROUND LOOP SYSTEM BENEFITS



Supplies Energy Efficiently

Rather than converting energy from one form to another, as is the case when burning fossil fuels, heat pumps simply move heat from one location to another. As a result, ground source heat pumps typically deliver more than four times the heat energy they consume in the form of electricity.

Minimizes Environmental Impact

A ground source heat pump system can reduce energy costs by up to 70% in the heating mode and up to 50% in the cooling mode, according to the EPA.¹ In addition, a typical residential system reduces carbon dioxide emissions by more than 200 tons over a 20-year period, which is equivalent to removing two cars from the road.

Reduces Operating and Maintenance Costs

Although the initial investment may be higher than for a conventional heating and cooling system, once this investment is recouped (which typically occurs in five to ten years), you'll enjoy many years of stable, low-cost energy. With few moving parts, geothermal heat pumps are durable and highly reliable, lowering your maintenance costs.

¹ http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12670

GEOTHERMAL GROUND LOOP SYSTEM HOW IT WORKS

RAUGEO U-bend Vertical Ground Loop

Where space is limited, vertical ground loops are inserted in boreholes which are several hundred feet deep using a well-drilling rig.

The superior flexibility of RAUGEO[®] PEXa pipe allows a continuous length of pipe to be bent in a tight 180-degree radius which is then cast in a fiberglass-reinforced polyester resin. This eliminates the need for connections and the potential for leaks in the borehole.

The result is a rugged U-bend that resists damage during borehole insertion and eliminates risks associated with underground joints.

RAUGEO Double U-bend

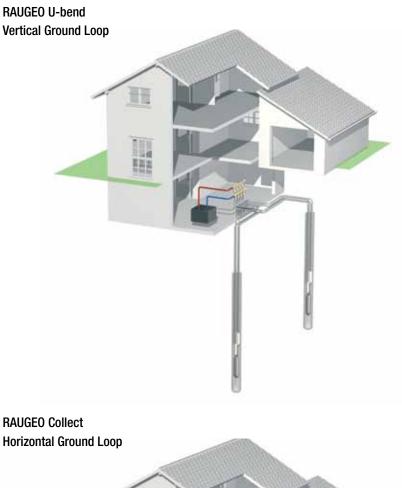
Our unique RAUGEO Double U-bend extracts more energy than the typical vertical loop, while offering a higher degree of security against loop failure.

In North American thermal performance testing,² RAUGEO Double U-bends installed alongside single HDPE U-bends displayed significantly lower borehole thermal resistivity. Test results demonstrated that the RAUGEO Double U-bend with pipe spacers requires 15 to 40% less borehole footage to extract the same energy as a single HDPE U-bend, allowing drilling and project costs to be reduced.

RAUGEO Collect Horizontal Ground Loop

Where there is plenty of open space and suitable soil conditions, a horizontal ground loop using RAUGEO Collect located about 5 to 7 ft (1.5 to 2 m) below ground is often the most economical option.

² Crecraft, Harrison and Mahlmann, Justin. REHAU in-situ Borehole Thermal Performance Testing. Bowman Geothermal, 2009





REHAU SMART CONTROLS SYSTEM BENEFITS



The REHAU Smart Controls system offers intelligent integration of all mechanical devices to achieve the most efficient means of operating your HVAC system components.

Creates Flexible, Integrated HVAC Control Solutions

REHAU Smart Controls (RSC) is extremely flexible and can be configured to control the most intricate HVAC systems based on installer-defined rules of operation. The system is not limited by "predefined" control logic, so it can be configured to any operating requirement and can easily expand to integrate any HVAC components added after initial installation.

Offers Off-Site Control and Troubleshooting

From the web-based Control Center, you can adjust temperature settings and turn functions on/off. Remote access by your service organization allows the technician to diagnose an HVAC component problem and bring the necessary parts and tools for the repair, reducing system downtime.

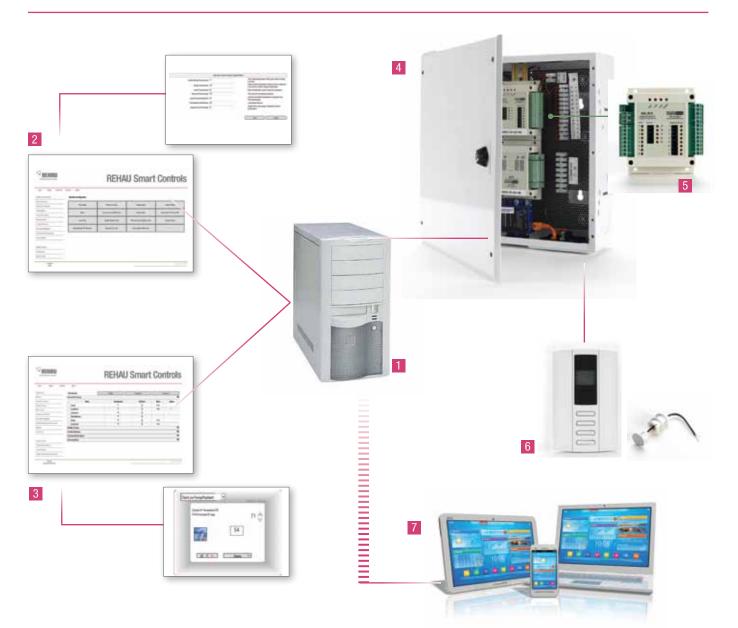
Monitors System Health With Alerts and Heartbeat

You can set up text or email alerts for predetermined HVAC system events such as extreme temperature changes, boiler room temperatures below 50°F (10°C) or water on the basement floor. An optional "heartbeat" service allows an off-site server to monitor the health of the RSC computer and other electronic system components, prompting a service call or remote intervention when maintenance is required.

Optimizes Energy Consumption

Historical performance data allows users and installers to monitor energy consumption trends. Using this information, adjustments can be made to settings such as setpoints, system temperatures and room temperature setbacks to maximize comfort and optimize energy efficiency.

REHAU SMART CONTROLS SYSTEM HOW IT WORKS



- 1. Computer operates software and records performance history
- 2. Configurator software gives your contractor unparalleled flexibility
- 3. Control center allows user to check and change system settings
- 4. Control panel simplifies wiring and controls
- 5. Input-output blocks create wiring interface to HVAC components
- 6. Thermostat or wall sensor monitors temperature
- 7. Internet access provides complete off-site control

KLIMATROL AND REHAU DESIGNING YOUR PERFECT SOLUTION





Klimatrol provides state-of-the-art shop drawings for all aspects of radiant heating and cooling and snow and ice melting systems. Serving the residential, commercial and industrial markets, our professionals can provide the perfect solution to meet your needs and budget. Klimatrol is your source for energy efficiency and comfort.

Klimatrol offers:

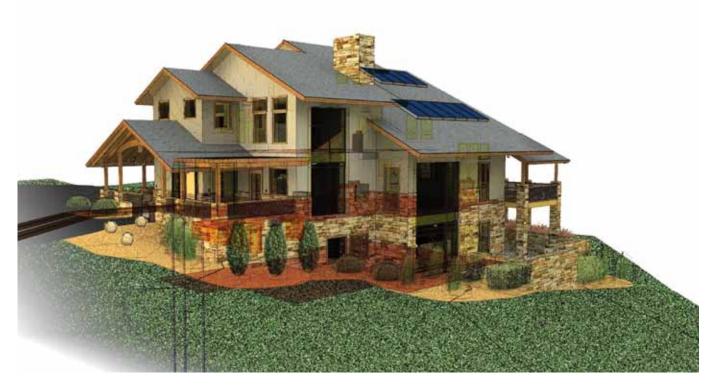
- Quality products
- Technical application support
- Competitive pricing







125,000 ft² (11,600 m²) of snow and ice melting system in parking lots and walkways at Fallsview[®] Casino Resort, Ontario, ensures year-round pedestrian safety and vehicle access.



REHAU, the Montana State University CRLab and an expanding team of experts are collaborating to build a sustainable Montana home, optimize its systems and share cutting-edge research and technology with green building pioneers. Follow our progress at www.montanaecosmart.com.



12 Bram Court, Unit 14 & 15 Brampton, Ontario, Canada L6W 3R6 Phone: (905) 454-1742 or (800) 454-1742 www.klimatrol.com

info@klimatrol.com

For updates to this publication, visit na.rehau.com/resourcecenter

The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained therefrom. Before using, the user will determine suitability of the information for user's intended use and shall assume all risk and liability in connection therewith.