WarmlyYours





November 2026 Webinar

Beyond Tile
Heating Under LVT, Engineered Wood & Carpet

Proven assemblies, manufacturer tolerances, and trade sequencing for non-ceramic floors



What You'll Learn Today

Prepare to elevate your understanding of advanced radiant heating installations.

1. ## The Non-Negotiable Physics

   Temperature thresholds (85°F / 29°C), R-value limits (≤ 2.5 total assembly, ≤ 1.0 floor covering), and thermal trapping.

2. ## LVT & Resilient Flooring

   Core types (SPC vs. WPC), embedment requirements, and membrane restrictions.

3. ## Engineered Wood & Floating Systems

   Direct floating vs. nail-down assemblies.

4. ## Laminate Flooring Assemblies

   Standard floating foil (Environ™) vs. embedded cable in self-leveling cement (TempZone™ + SLC) for manufacturer separation rules.

5. ## Carpet Applications

   Stretch-in guidelines, cushion density limits, and market restrictions.

6. ## Warranty Defense

   Electrical safety, de-energization, lockout protocols, and 3-stage Ohm logging.

The 85% Opportunity: Why Stop at 60 Square Feet?

Non-ceramic flooring represents 85% of residential square footage—and your biggest untapped ticket growth.

15% — The Comfort Zone (Tile & Stone)

- Average job: ~60 sq. ft. (Single room / master bath)
- High competition, standard trade margins
- Familiar thinset-and-mat assemblies

85% — The Growth Zone (LVT, Wood, Carpet)

- Average job: 400–1,500+ sq. ft. (Whole levels, basements, open concepts)
- High-ticket, premium add-on value
- The hesitation: Thermal limits, subfloor build-ups, and callback anxiety

The Pro Premise: The barrier to capturing the other 85% isn't homeowner demand—it's knowing how to guarantee assembly performance without voiding flooring warranties.

The 4 Non-Negotiable Rules of Non-Tile Radiant Heating

The 85°F (29°C) Floor Limit

Standardized by the NWFA and vinyl manufacturers. Radiant doesn't run at blast-furnace temperatures. Thermostats must enforce an in-floor high-limit cutoff at 85°F (or 81°F for select brands). Each flooring company and material has its own limit—consult your flooring manufacturer's requirements.

Flooring R-Value: Less Than R-1

The Thermal Transfer Rule. We usually recommend that the flooring be less than R-1 to allow efficient upward heat transfer. Always confirm the maximum R-value with your flooring manufacturer.

No Deep Temperature Setbacks

Protect the Click Joints. Vinyl and wood expand and contract with rapid thermal swings. Never drop temperatures 15°F overnight on a programmable schedule; maintain steady holds or gentle 2°–3° adjustments. Each flooring is different—consult your flooring manufacturer's requirements for allowable temperature setbacks.

Eliminate Thermal Trapping

No Hot Spots. Flat-bottom furniture (solid base futons, floor mattresses, dog beds) and rubber-backed accent rugs act as thermal insulators, trapping heat and tripping sensors.

Luxury Vinyl (LVT / LVP): Rigid Support is Mandatory

The Common Mistake

"Can I just roll out a foil mat or loose cable directly under click-lock vinyl?" → ABSOLUTELY NOT.

The Physics of Failure

Vinyl is a thermoplastic material with minimal flexural rigidity. Under point loads (high heels, heavy chair casters), a soft foil mat or cable ridge will cause click-lock joints to flex, fatigue, and shear off, while cable lines will visibly "telegraph" through the surface.

The Golden Rule

Foil mats (Environ) are NEVER approved under LVT or LVP.

The Tested Solution

TempZone (Flex Roll or Cable) fully encapsulated in a flat, rigid cementitious layer.

Why TempZone + SLC

The majority of LVP requires an embedded floor heating system and a flat, level surface. Therefore, TempZone + SLC is the main application.

Subfloor Prep & Damming

When pouring SLC over wood subfloors, seal every plywood seam and dam all perimeter drywall expansion gaps and HVAC boots. Liquid SLC will find any crack and run into the basement.



Luxury Vinyl (LVT / LVP) — Embedded System

Feature	TempZone in SLC
Product	TempZone Flex Roll (15 W/sq.ft.) or Cable
Assembly Type	Wet Assembly
Stack-Up	Subfloor → Thermal break (ThermalSheet™ on concrete) → TempZone, with in-floor sensor taped between cables → 3/8″ to 1/2″ SLC → LVT / LVP / SPC
The Trade Advantage	You're already pouring self-leveler anyway, so adding TempZone adds minimal labor.
Watch Out	Foil mats (Environ) are never approved under LVT or LVP.

The Pro Bidding Hack: "You're already pouring self-leveler anyway." Modern rigid core and LVP specs demand subfloor flatness of 3/16″ over 10 ft. In basements and remodels, you already have to pour SLC to meet flooring warranty tolerances. Adding TempZone to that pour adds minimal labor, transforming a routine prep expense into a high-ticket luxury upgrade.

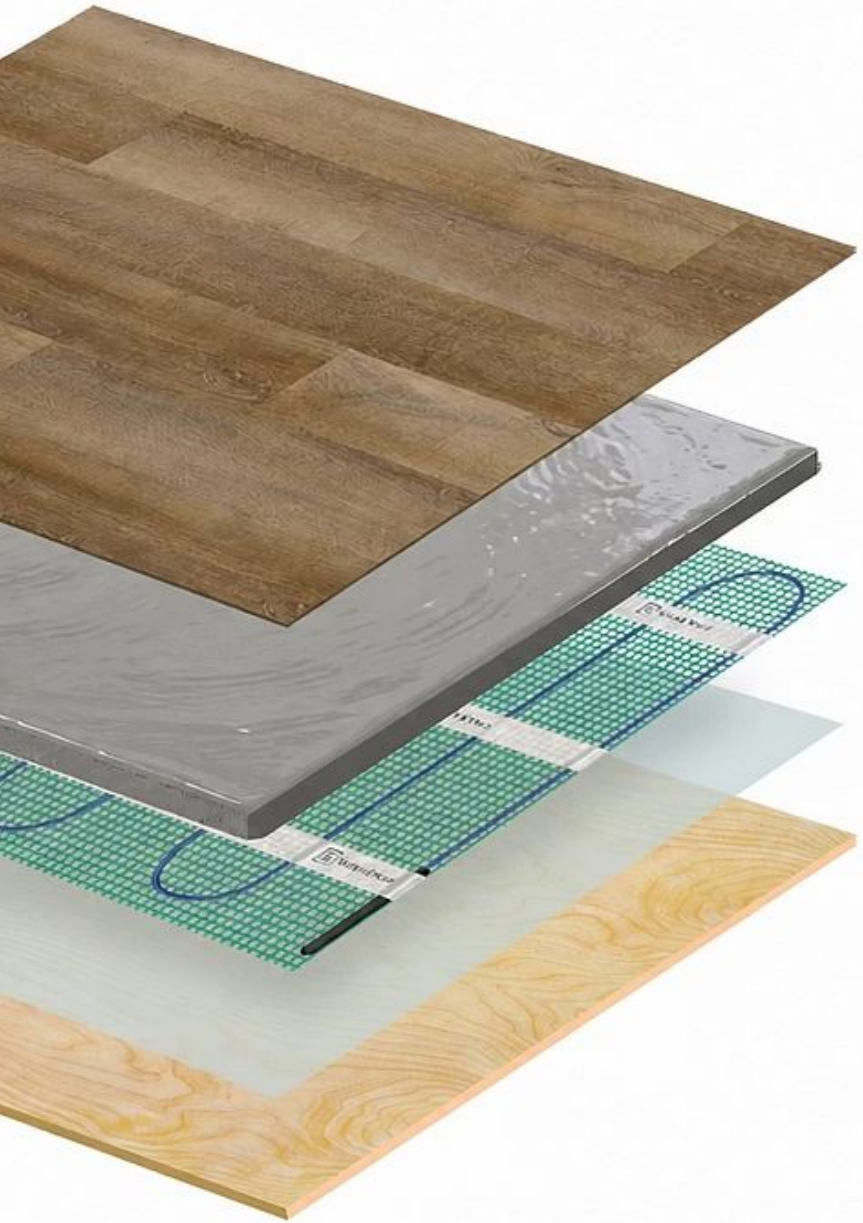


Laminate Flooring — Option A: Direct Floating

Feature	Direct Floating
Product	Environ Flex Roll (Foil)
When to Use	Standard floating laminate
Assembly	Subfloor → Underlayment → Environ → Laminate
Max Limits	Max thickness: 5/8″ (15 mm) | Max R-value: 1.0
Watch Out	No attached pad or metal locking strips

Non-Negotiables for Both:

- **85°F (29°C) Cap:** In-floor sensor connected to floor-limiting thermostat.
- **Slow Ramp-Up:** Hold steady 48 hrs post-install; adjust max 4°F–5°F / day. Some controls like UDG4 have Laminate Rise Protection (The temperature rise is limited to 10°F/hour. If the rise is higher than that, the heating is turned off for 10 minutes.)



Laminate Flooring — Option B: Embedded System

Feature	Embedded System
Product	TempZone + SLC (Green Mesh)
When to Use	Manufacturer requires ≥ 1/2″ separation
Assembly	Subfloor → TempZone in 1/2″ SLC → Laminate
Max Limits	Standard floating underlayment & floor limits
Watch Out	Allow SLC to fully cure before flooring installation

Non-Negotiables for Both:

- **85°F (29°C) Cap:** In-floor sensor connected to floor-limiting thermostat.
- **Slow Ramp-Up:** Hold steady 48 hrs post-install; adjust max 4°F–5°F / day. Some controls like UDG4 have Laminate Rise Protection (The temperature rise is limited to 10°F/hour. If the rise is higher than that, the heating is turned off for 10 minutes.)

⚠ **Myth:** Radiant heating voids laminate warranties.

Fact: Fully approved when following manufacturer separation & thermal limits.

Wood Science: Species, Cuts & Widths

Species Selection

Stable (Approved): White Oak, American Cherry, Walnut, Mesquite. These species have low shrinkage coefficients.

Unstable (Avoid Over Radiant): Hickory, Maple, Beech, and Brazilian Cherry. These species are notoriously reactive to humidity and heat.

Plank Width Rules

Solid Wood: Maximum 3″ width over radiant heat.

Engineered Wood: Approved up to 5″ wide (or 7″ if quarter-sawn with micro-beveled edges to disguise seasonal micro-movement).

Cut Matters More Than Species

Plain Sawn: Wood cells run tangential to the growth rings; expands horizontally across the plank width (leads to gapping).

Quarter Sawn: Wood cells run vertical to the surface; expands vertically in thickness (virtually zero horizontal movement over radiant heat).



Engineered Wood — Method A: Floating

Feature	Floating Engineered Wood
Product	Environ Flex Roll (Foil)
Assembly Type	Dry Assembly
Stack-Up	Subfloor → Vapor barrier sheet → Underlayment (ThermalSheet) → Environ Foil Roll → Floating engineered wood planks
The Trade Advantage	100% dry install. No mortar, no cement, no waiting for cure times. Minimal floor height addition (< 1/8″ added by the foil roll).
Watch Out	A vapor barrier (e.g., plastic sheet) under the underlayment is acceptable.



Engineered Wood — Method B: Glue-Down / Nail-Down

Feature	Glue-Down / Nail-Down
Product	TempZone Cable or Mat in SLC
Assembly Type	Wet Assembly
Stack-Up	Subfloor → TempZone Cable or Mat → 3/8″ Self-Leveling Cement → Wood flooring adhesive → Engineered wood planks
The Trade Advantage	Traditional solid underfoot feel with zero hollow sound or deflection.
Watch Out	For nail-down: incorporate wooden sleeper strips between cable runs.

⚠ **Myth:** Engineered wood needs one install method over radiant heat.
Fact: Two proven, fully warrantable paths exist—pick based on the installation method (floating vs. glue/nail-down).

Moisture Control & The Flush Sensor Channel

Relative Humidity (The 35%–50% Rule)

Indoor RH must be kept between 35% and 50% year-round. Remind clients that winter dryness from forced-air HVAC—not the radiant floor—is the #1 cause of winter floor gapping. Each flooring is different—consult your flooring manufacturer's requirements for the recommended humidity range.

The Flush Sensor Channel (Environ Dry Assemblies)

In a dry Environ installation, the floor sensor bulb and factory cold lead splice are slightly thicker than the foil mat.

Installer Action: Use a utility knife to cut a shallow channel/trough into the foam or cork underlayment directly beneath the sensor and splice. Tape them into the channel so the heating element and sensor sit dead flush under the wood plank.

Pro Tip: Ensure the installer or end-user sets correct floor protection limits based on the final flooring manufacturer requirements.



Heating Carpet: Warmth for Bedrooms & Basements

Code & Regulatory Alert

Environ Flex Roll under stretch-in carpet is UL-listed for the USA only (the Canadian Electrical Code does not permit foil heating mats directly under carpet).

Pad Specifications (Density is Everything)

Carpet cushion must be high-density: 6 to 8 pounds per cubic foot (dense rebond, prime polyurethane, or rubberized pad).

Why: Low-density, soft sponge pads compress too deeply under heavy foot traffic, fatiguing the internal heating wire.

The R-Value Calculation

- Carpet alone: Maximum R-1.0.

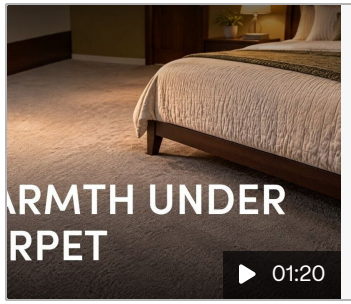
The pad ALWAYS goes under the heating mat—never over it.

Installer Safety Zone (Tack Strips & Stretchers)

Keep Environ mats at least 3″ to 6″ away from walls and tack strips. Never allow carpet knee-kickers or power stretchers to touch, grip, or puncture the heating mat during carpet tensioning!

Carpet Tiles / Glue-Down Carpet

Must use TempZone embedded in 3/8″ self-leveling cement.



YouTube

Carpet Seaming and Stretching over ...

Get a free floor heating quote: https://go.warmlyyours.com/ktyvkj2 Watc...



Wall-to-Wall Carpet: Installation Layers

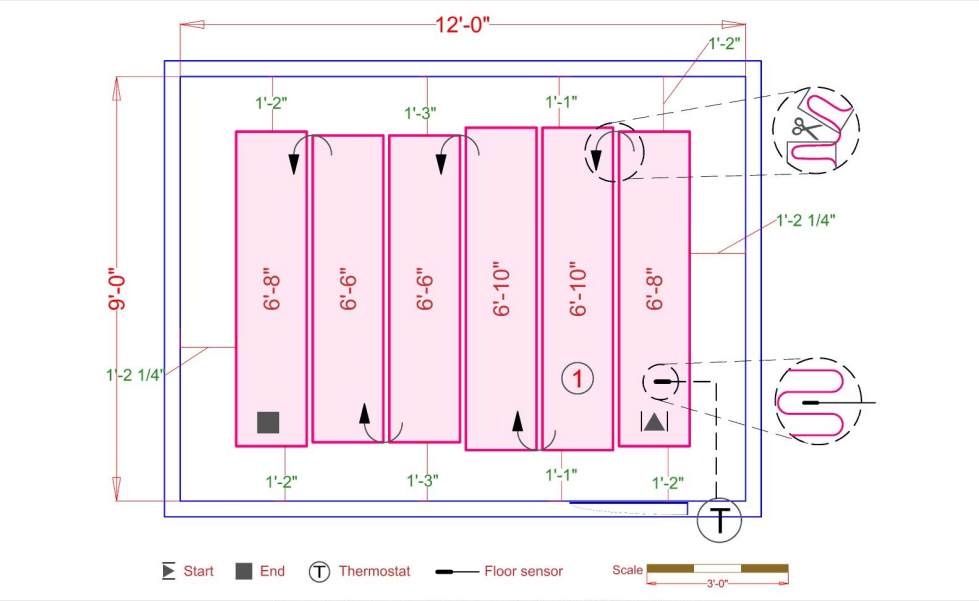
Installing Environ mats under carpet is a **straightforward floating installation**—no adhesives, thinset, or self-leveling cement required. The mats roll out between the subfloor and carpet pad, making this one of the simplest radiant heating installations available.

Feature	Wall-to-Wall Carpet (Stretch-In)
Product	Environ Flex Roll 120V (12 W/Sq.ft.)
Assembly Type	Dry Assembly
Stack-Up	Subfloor → Carpet padding (density of 6-8 pounds per cubic foot) → Environ Electric Floor Heating System 1/8″ (3.175mm) → Wall-to-wall carpeting
The Trade Advantage	No adhesives, thinset, or self-leveling cement required.
Watch Out	Keep mats 3″ to 6″ away from walls and tack strips; the pad always goes under the heating mat.

Wall-to-Wall Carpet: Installation Plan

Stay Clear of Carpet Stretch & Seam Zones

The key to this layout: the heating mats stay away from the areas where the carpet will be stretched and seamed during installation.



What to Notice

1 Perimeter Clearance

The mats stop roughly 1′-1″ to 1′-3″ short of the walls, away from where the carpet is stretched.

2 Six Parallel Runs

Mat runs of 6′-6″ to 6′-10″ with a clear start and end point, so nothing crosses a seam.

3 Sensor & Thermostat

The floor sensor sits in the heated area and is wired to the thermostat at the edge of the room.

SmartPlan™ Support: Verify dimensions in the field prior to ordering. Installation Support: (800) 875-5285

Controls, Sensors & The Dual-GFCI Trap

Dual-Sensing Thermostats

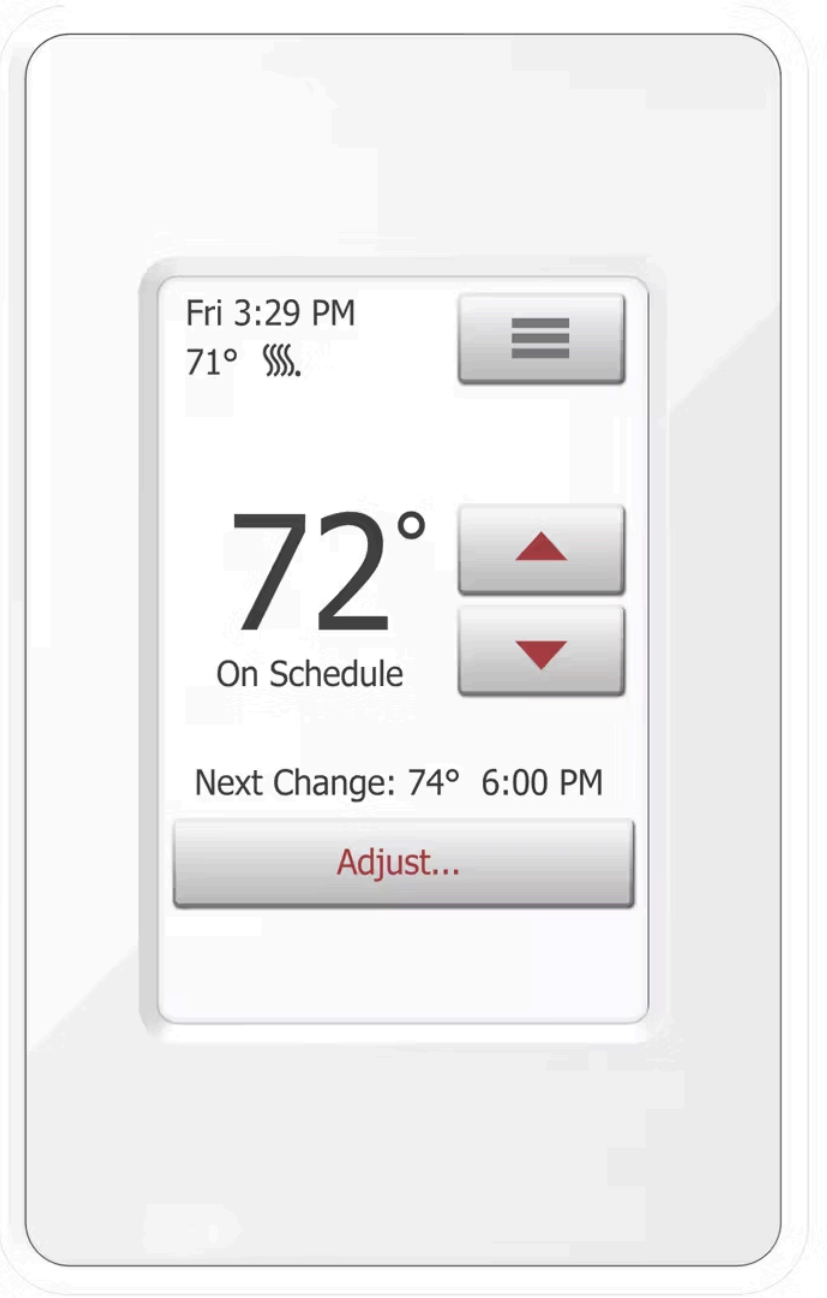
WarmlyYours nSpire Touch WiFi and nJoy thermostats feature dual sensing: they monitor the ambient room air temperature while enforcing the programmable floor protection limit.

The Backup Sensor Rule

Always pull two floor sensors into the floor assembly during rough-in. Connect only one to the thermostat; curl the spare inside the electrical box as an insurance policy. If a sensor is ever damaged during a flooring remodel 10 years later, you simply connect the spare. Run the sensor wires in a separate conduit.

The Dual-GFCI Trap (Critical Electrician Coordination)

WarmlyYours thermostats have a built-in 5mA Class A GFCI. DO NOT install a GFCI circuit breaker in the main electrical panel. Putting two GFCIs in series creates harmonic interference that causes erratic nuisance tripping. Use a standard circuit breaker in the panel.



Trade Sequencing

The Hand-Off Protocol (Flooring Pro vs. Electrician)

Electrician

Sets single deep box w/ single ring, runs conduit, roughs in home run, makes final thermostat connections.

Flooring Pro

Subfloor prep, element layout, sensor placement, self-leveler pour, flooring install.

Electrical Check

Before the thermostat is wired, the electrician verifies the home-run circuit—voltage, breaker size, and dedicated circuit—matches the SmartPlan and the heating element's electrical load.



The 3-Stage QC Log

The 3-Stage Resistance Test (The Warranty & Liability Shield)

01

Stage 1 (Out of Box)

Before unrolling the mat.

02

Stage 2 (Secured on Floor)

After layout/fixing strips, before pouring SLC or laying wood. Both trades sign off!

03

Stage 3 (Floor Installed)

After the finished floor is complete, before wiring the thermostat.

Multimeter Specifications

Heating Core Resistance

Must measure within −5% to +10% of the nominal factory Ohm value printed on the UL tag.

Insulation/Ground Continuity

Core-to-ground sheath must test infinite / Open Loop (OL).

Floor Sensor Resistance

8kΩ to 18kΩ depending on floor temperature (10kΩ nominal at 77°F).

During installation, the WarmlyYours Circuit Check stays wired to the heating cable as continuous insurance. If a tool cuts or nicks the element, the alarm sounds immediately—catching damage while it's still easy to repair.

Tech Tip: Set your multimeter manually to the 20kΩ scale. Many auto-ranging multimeters will show an open loop or error on 10k sensors!



LIVE Q&A

Now let's open it up for your questions.

- **Émilie Beauchamp:** Very interested in understanding how to be able to sell heated flooring solutions to my clients for other finishes than tile!
- **Chip Dudukovich:** Are LVT manufacturers working on product improvements which would allow heating directly under their flooring?
- **Gerry Fitzsimmons:** Looking for heating effectiveness in a residential basement with concrete and engineered wood flooring system.
- **Osas Elaiho:** Comprehensive understanding and installation of the heating systems.
- **Jim Iten:** How does the heat affect an LVP floor over time? What is the max temperature and how is it controlled at that level?
- **Tanya Rentzos:** Can one control/thermostat control multiple surfaces?
- **Carol Hickey:** Interested in how to install under carpet, wood, etc. indoors. Any data on comparative performance, energy efficiency, say compared to forced air heating?
- **Greg DeBacker:** How to avoid overheating a room on a mild day. Concrete retains heat for a long time?

Engineered SmartPlans & 24/7 Field Support



Free SmartPlan CAD Takeoffs in 24 Hours

Send us your floor plan or room dimensions. Receive an exact, engineered CAD rollout plan showing cable spacing, electrical loads, and breaker requirements. Drop it directly into your client bid!



Dedicated Pro Trade Accounts

Preferred contractor wholesale pricing and volume discounts. Dedicated account manager for fast quoting.



24/7/365 On-Site Tech Hotline

If your crew is on site at 7:00 AM on a Saturday with a multimeter or subfloor question, an experienced radiant technician answers the phone live: (800) 875-5285.

CLOSE + SUPPORT

24/7 PRO Technical Support

Need help on a job? Call us:

- 📞 **800-875-5285**
- 📧 **techsupport@warmlyyours.com**

We'd rather help you plan the install than troubleshoot a problem later. Don't hesitate to call.

Resources Coming Your Way

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