



MEET THE FUTURE OF SNOW MELTING

AMORPHOUS HEATWAVE

SNOW MELTING SYSTEM

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WINTER IS HARD ON DRIVEWAYS & HOMEOWNERS

Snow and ice create serious challenges for homeowners and property managers.

Common problems:



Constant snow
shoveling



Salt damage to
concrete



Expensive snow
removal services



Liability risks from
slips and falls



Dangerous icy
surfaces

For high-end homes and modern developments, homeowners increasingly want automated snow melting solutions built directly into their driveway.



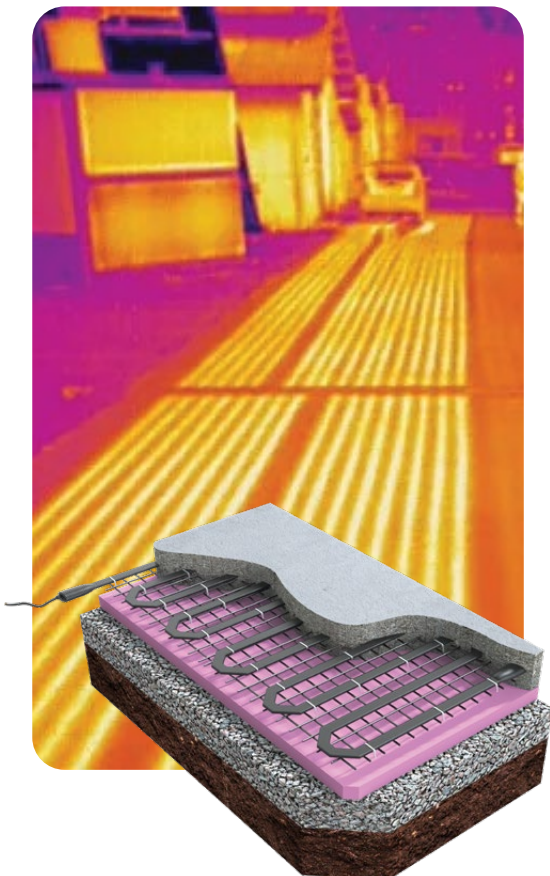
THAT'S WHERE HEATWAVE COMES IN

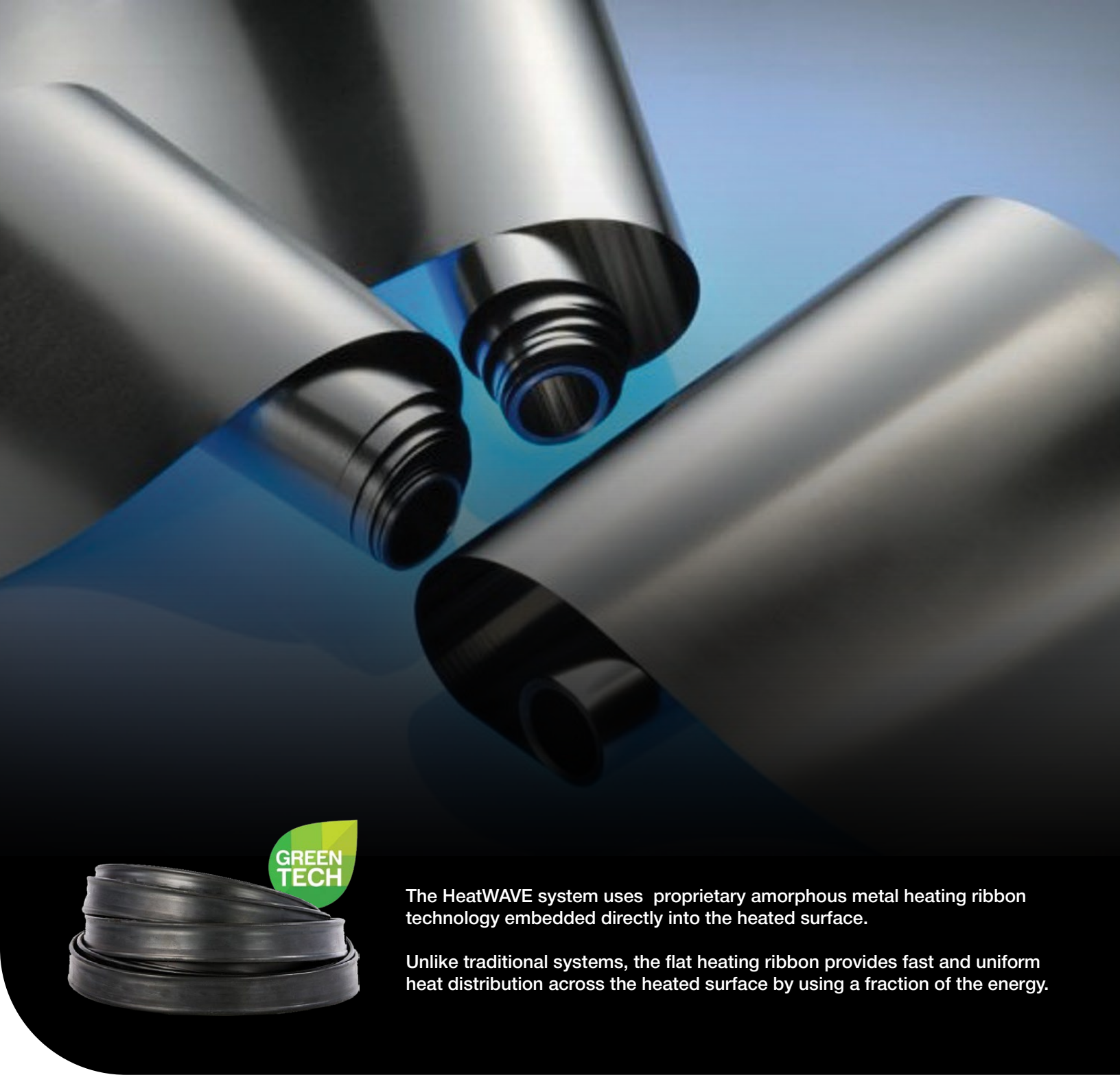
The Amorphous HeatWAVE system is a next-generation all-electric solution designed specifically for underground radiant heating applications. Powered by proprietary amorphous metal heating ribbon technology, HeatWAVE delivers heat to the surface quickly and efficiently, outperforming traditional underground heating systems—including hydronic tubing and conventional electric heating cables.

Unlike systems that rely on heating large volumes of water or thick concrete mass, the HeatWAVE ribbon rapidly reaches operating temperature and transfers heat directly into the surface. The result is faster response times, more uniform heat distribution, and significantly improved energy efficiency.

The HeatWAVE system not only meets demanding heating requirements but also aligns with modern energy conscious building practices.

HeatWAVE represents the future of underground radiant heating combining advanced technology, efficiency, and reliability in one innovative system.





The HeatWAVE system uses proprietary amorphous metal heating ribbon technology embedded directly into the heated surface.

Unlike traditional systems, the flat heating ribbon provides fast and uniform heat distribution across the heated surface by using a fraction of the energy.

MEET THE HEATWAVE SYSTEM

Our amorphous metal undergoes a unique manufacturing process, resulting in the creation of thin yet remarkably durable metal ribbons. With a slender yet highly durable profile measuring between 20-30 microns, our heating element boasts a distinctive advantage. The low mass of the heating element empowers it to start being effective with minimal wattage consumption where it outperforms standard alternatives significantly. Notably, the amorphous metal ribbon excels in delivering heat far more rapidly compared to traditional heating elements, including hydronic tubes or electrical cables. While traditional systems need a lot more energy to be effective, the HeatWAVE system will start being effective using less energy, provide heat faster and shut off. This translates in significant savings for the user.



THE HEATWAVE ADVANTAGE

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RAPID HEAT RESPONSE

MINIMAL THERMAL LAG

The amorphous metal heating ribbon has extremely low thermal mass, allowing it to heat from 0°C to ~70°C within minutes using relatively little energy.

Because the heating element reaches operating temperature almost immediately, the system begins transferring heat to the surface quickly. Traditional systems take significantly longer to respond because they must first heat fluid or large sections of cable and surrounding concrete.

RESULT



Faster system
startup



Immediate
surface heating



Reduced wasted energy during warm-up



FASTER HEAT RESPONSE

FLAT HEATING RIBBON DESIGN

SUPERIOR HEAT TRANSFER GEOMETRY

Traditional heating elements are round (hydronic tubing or electric cable). Heat can only leave the element through the outer circumference of the circular cross-section.

This creates an unfavourable ratio between the internal mass of the element and its heat-transfer surface area, causing heat to accumulate within the element before it transfers into the concrete.

The HeatWAVE ribbon is flat, meaning nearly the entire element surface directly contacts the surrounding concrete.

RESULT



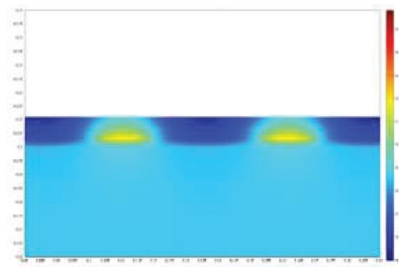
Larger heat transfer area



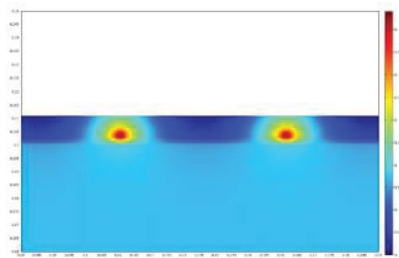
Faster and more efficient heat delivery



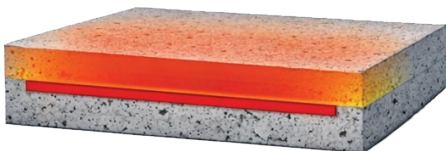
Higher heat flux into the slab



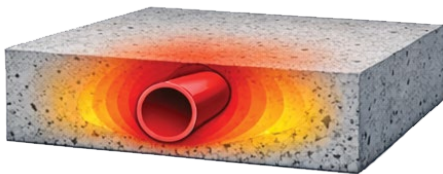
AMORPHOUS HEATWAVE



HYDRONIC / CABLE BASED SYSTEMS



FLAT HEATWAVE RIBBON HEATING
THE SLAB SURFACE



ENTIRE SLAB BEING HEATED DUE TO
ROUND HEATING ELEMENT
(HYDRONIC OR CABLE BASED SYSTEMS)

SURFACE HEATING VS. THERMAL MASS HEATING HEAT WHERE IT IS NEEDED

Hydronic and cable systems tend to heat the entire slab mass first, creating a large thermal reservoir before meaningful heat reaches the surface.

The HeatWAVE ribbon, because of its wide contact area with the slab, distributes heat much closer to the surface where snow accumulation occurs.

This allows heat to reach the surface faster and more uniformly, rather than slowly migrating upward from concentrated heat sources.

RESULT



More uniform surface temperatures



Faster snow melting



Less energy lost to unnecessary slab heating



PREVENTATIVE MELTING VS. REACTIVE MELTING

STOP SNOW BEFORE IT BONDS

Because the HeatWAVE system responds rapidly, it can activate immediately when precipitation begins. Instead of melting large accumulations of snow after they form, the system prevents snow from bonding to the surface in the first place.

RESULT



Reduced ice formation



Easier snow management



Lower overall energy demand

LOWER POWER REQUIREMENTS

MORE EFFICIENT SNOW MELTING

Traditional snow-melt systems typically require: 40–60 W/sqft (Hydronic & cable based systems)

This higher power demand is necessary because a significant portion of the energy is lost heating thermal mass and overcoming delayed heat transfer.

The HeatWAVE system can effectively melt snow using: ~25–30 W/sqft

RESULT



Lower electrical load



Lower operating costs



Easier electrical service requirements



COMPARED TO A TYPICAL 50 W/SQFT CABLE SYSTEM:
UP TO 50% LESS POWER REQUIRED

REAL-WORLD COMPARISON

SYSTEM	TYPICAL OUTPUT	RESPONSE
Hydronic system	120-200 BTU/Sqft (35-60 W/Sqft)	Slow
Cable based system	40-60 W/Sqft	Medium
HeatWAVE system	25-40 W/Sqft	Fast

RAPID HEAT RESPONSE

MINIMAL THERMAL LAG

Hydronic systems require:

- ✓ Boilers
- ✓ Valves
- ✓ Pumps
- ✓ Fluid circulation systems
- ✓ Anti freeze additives (glycol)

These systems introduce maintenance requirements, potential leaks, and environmental risks. Many hydronic systems also rely on fossil fuels, producing CO2 emissions and limiting the possibility of energy independence.

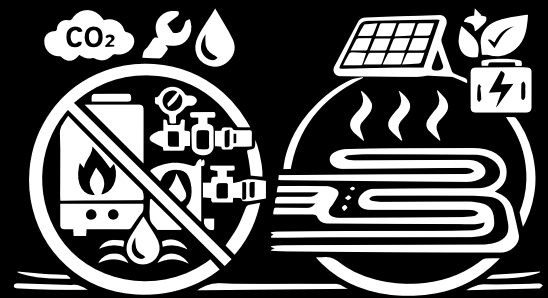
The HeatWAVE electric ribbon system:

- ✓ Requires minimal maintenance
- ✓ Can operate on renewable energy (solar + battery systems)
- ✓ Requires no fluids or chemicals
- ✓ Has no moving parts

RESULT

-  Cleaner installation
-  Lower maintenance
-  No environmental leakage risk
-  Compatible with renewable energy

SIMPLER, SAFER & MORE FLEXIBLE



-  No Maintenance
-  No Leaks
-  No Fluids
-  Renewable Energy

ELECTRICAL FLEXIBILITY

SMART ZONING FOR LIMITED ELECTRICAL SERVICE

Traditional cable systems often require ~50 W/sqft, which creates very large electrical loads. Because of this, many installations only heat tire tracks rather than the full driveway. The HeatWAVE system requires significantly less power, and when electrical service is limited, zoning control can be used. Using thermostat controlled zone switching (pendulum relays), the driveway can be divided into heating zones that alternate operation.



RESULT

-  Full driveway coverage possible
-  Lower peak electrical demand
-  Flexible system design



FASTER RESPONSE TIME



BETTER HEAT TRANSFER
GEOMETRY



UNIFORM SURFACE
HEATING



PREVENTATIVE SNOW
MELTING



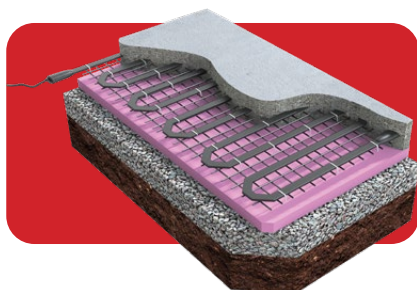
UP TO 50% LESS POWER
REQUIRED



NO BOILERS, PUMPS, OR
GLYCOL



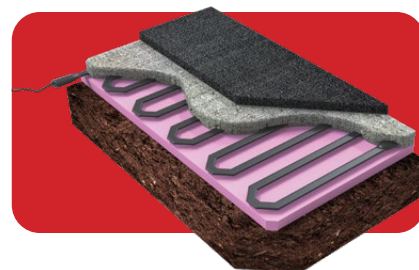
COMPATIBLE WITH SOLAR
AND BATTERY SYSTEMS



UNDER CONCRETE



UNDER PAVERS



UNDER ASPHALT

OFFER YOUR CLIENTS THE ULTIMATE WINTER CONVENIENCE

Add TruHeat's Amorphous HeatWAVE snow melting system to your concrete driveway projects and give homeowners a safer, maintenance-free winter solution.



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