

Safety & **De-icing** Applications

General Presentation

– Inside Top Coatings, FRP Bridges & Platforms, Park Houses, etc.



∴ www.laminaheat.com ∴

Safety & **De-icing** Applications

- Building Industry
 - De-icing of critical walkways, driveways, slippery entrances of hospitals, elderly homes, public buildings, park houses, etc.
- Infrastructure
 - Frost / Ice prevention on bridges, roads and runways
- Transportation
 - De-icing of train & bus platforms
 - Slippery entrance prevention in public transport

Safety & De-icing Applications



PowerMelt

PUTTING HEAT WHERE IT IS NEEDED

Inside asphalt layers, concrete and coatings for de-icing applications

PUTTING HEAT WHERE IT IS NEEDED

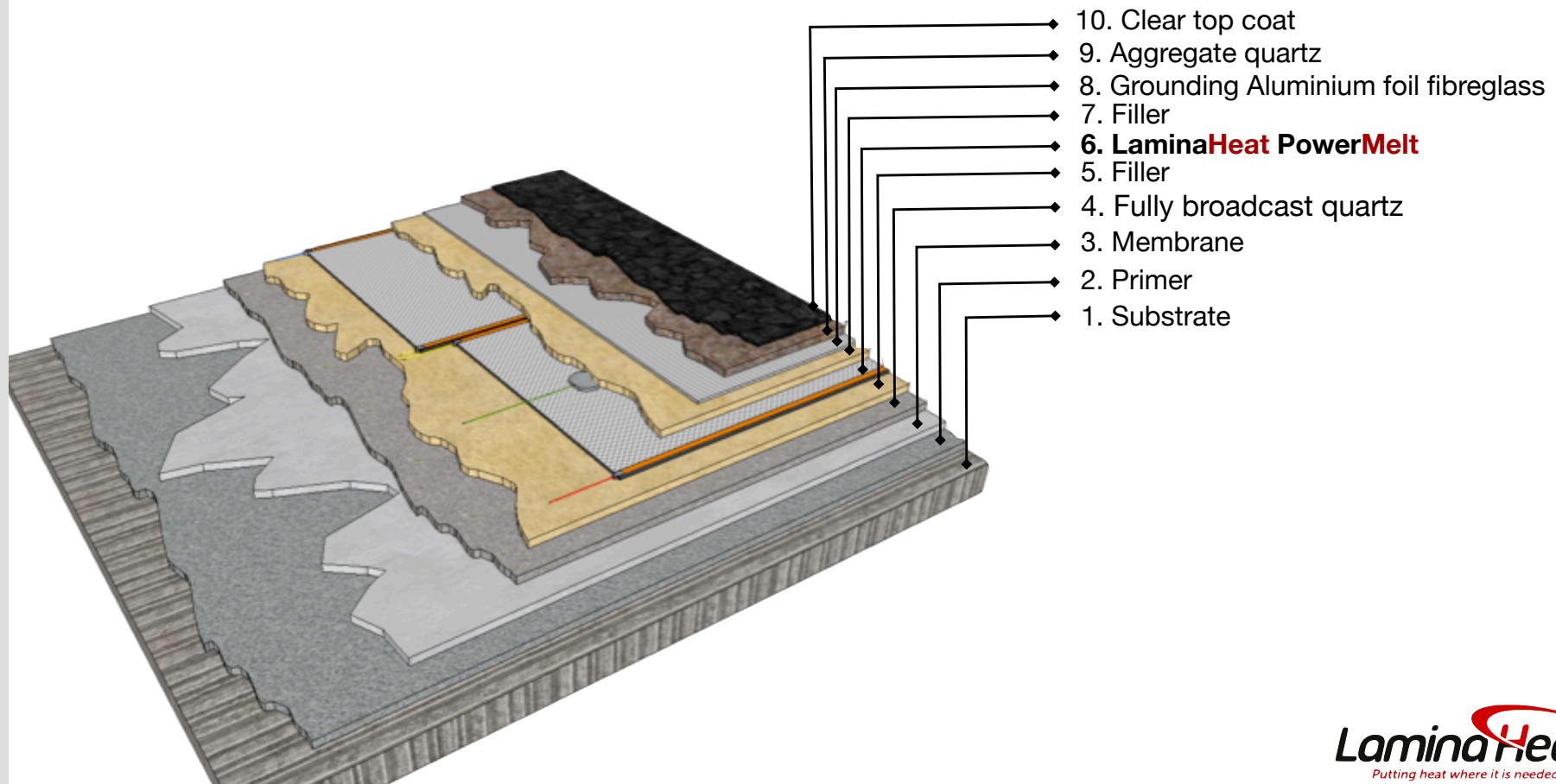
inside asphalt layers,
concrete and coatings
for de-icing applications

:: www.laminaheat.com ::

LaminaHeat
Putting heat where it is needed

PowerMelt Film heater placed **inside** top coatings

Typical Coating lay-up with PowerMelt

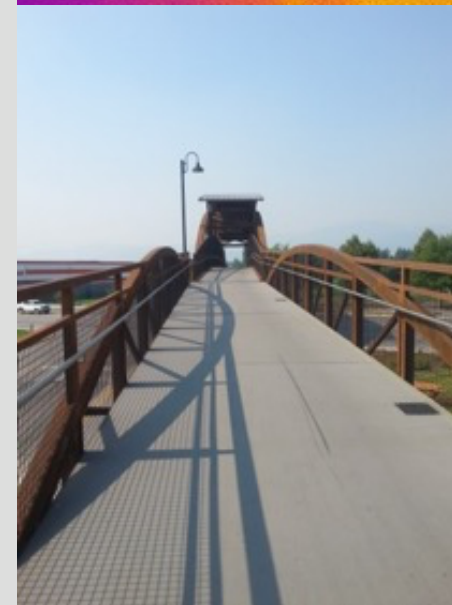
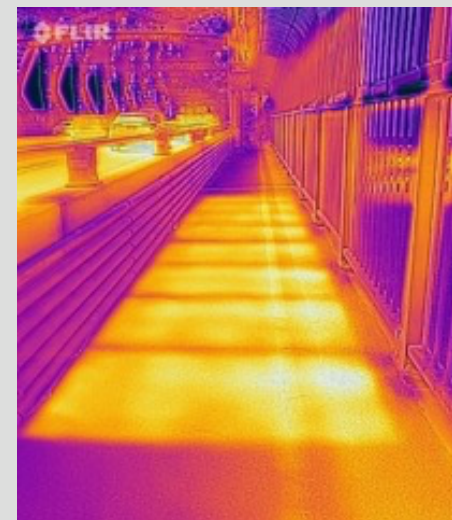


LaminaHeat
Putting heat where it is needed

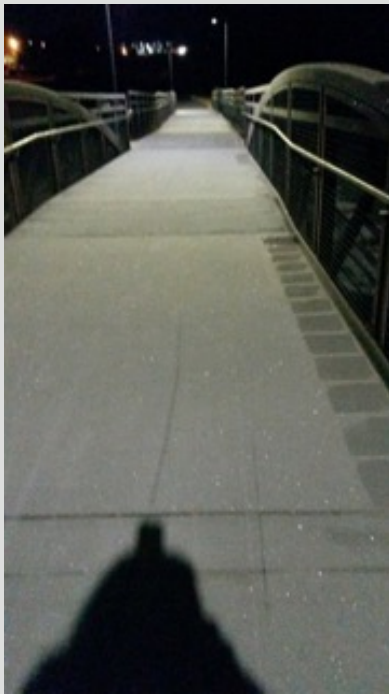
LaminaHeat
Putting heat where it is needed

Proximity to Surface

- Utilizes LaminaHeat's patented, EC and UL approved thin film, full surface, resistive heating fabric **moulded directly into the FRP panels** or **inside top floor coatings**, etc..
- LaminaHeat's proprietary *CERT Technology* allows for a customized resistance definition in order to optimize energy consumption.
- Only millimetres away from the top surface coating allowing for a fast and efficient heat up rate and also a High Temperature evenness.

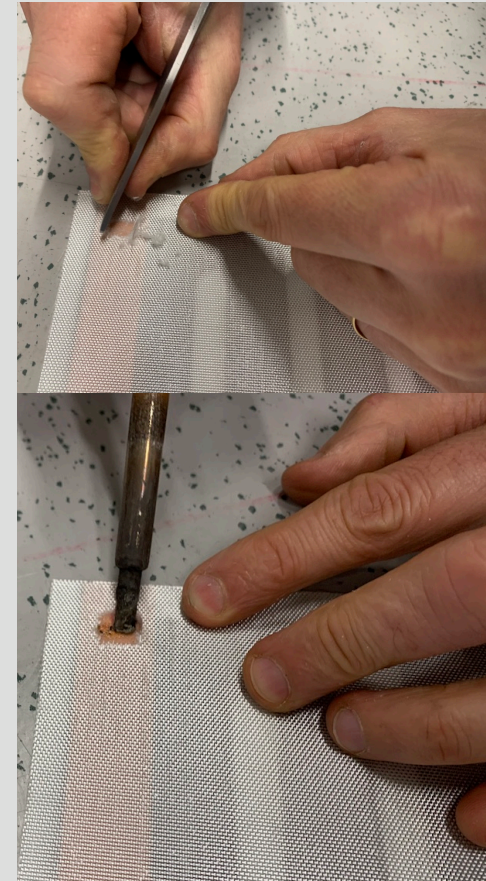
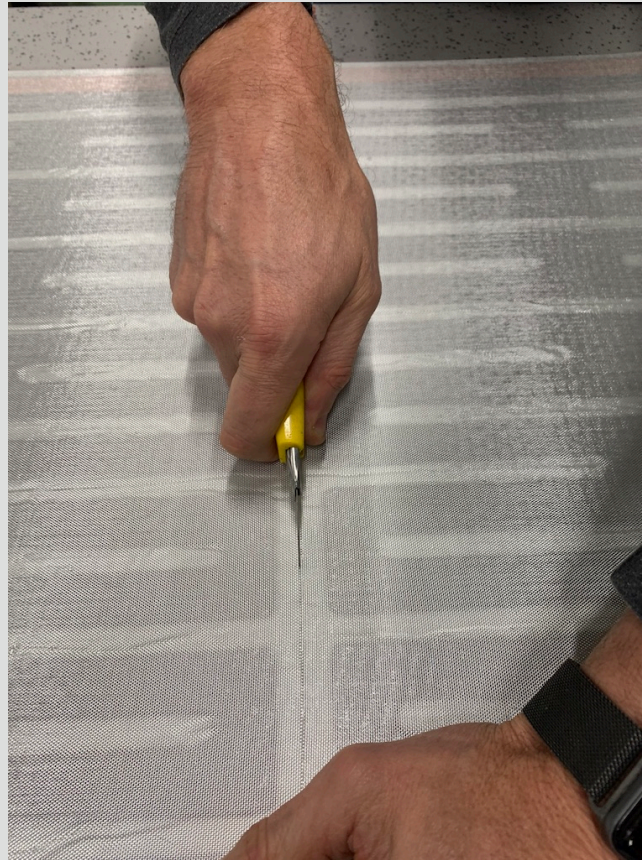


Heating Panel Technology for Fiber Reinforced Polymer (FRP) Platforms & Deckings or **inside anti-slip top coatings**



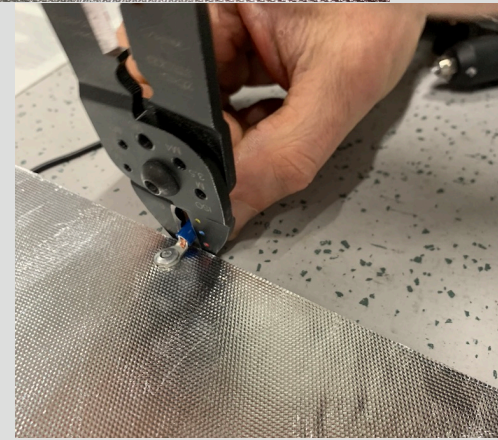
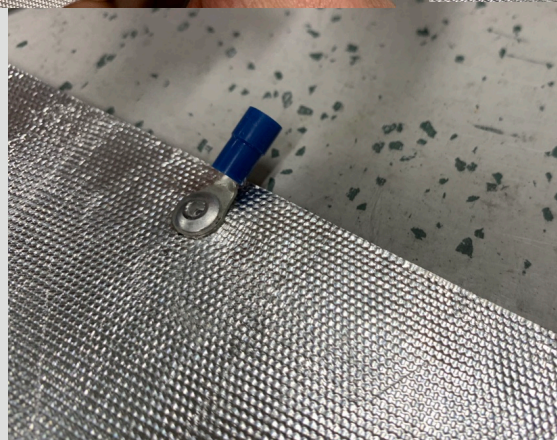
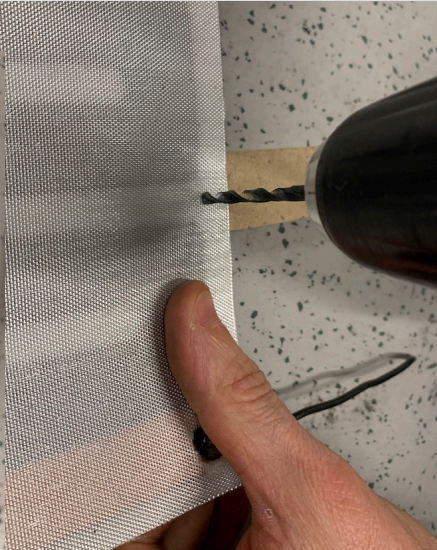
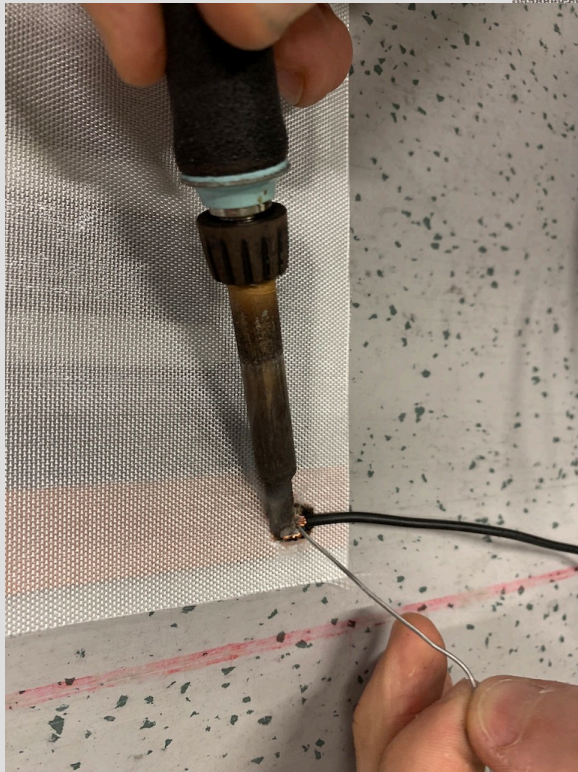
Cut the heating foil to length and expose the solder joints.

Cut the heating foil to the appropriate length and cut it centrally between the segments. (Note the max. length)
Then use the back of a carpet knife or scissors to remove some of the glass fabric above the copper strips and melt the soldering point on the two copper strips with a soldering iron.



Solder the two double insulated power cables on the left and right to the copper strips, and connect the aluminium earthing foil with a cable.

(make sure that the pop rivet or crimp connector does not touch the black carbon area...!)

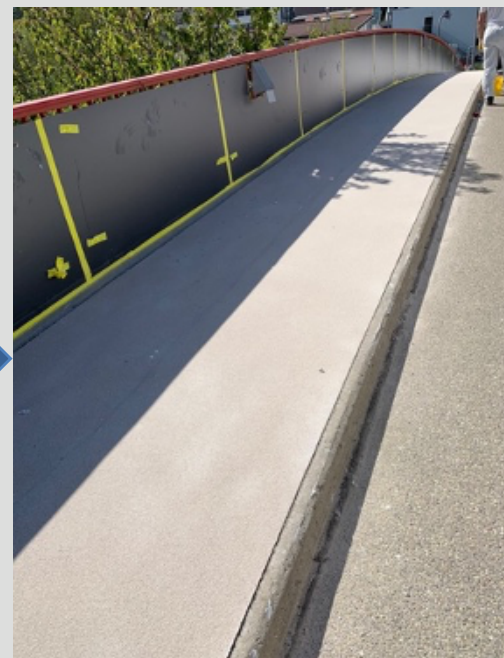


Seal the two solder joints and **both copper strip ends** with electrical sealant **2 times each!**



Heated Bridge Walkway

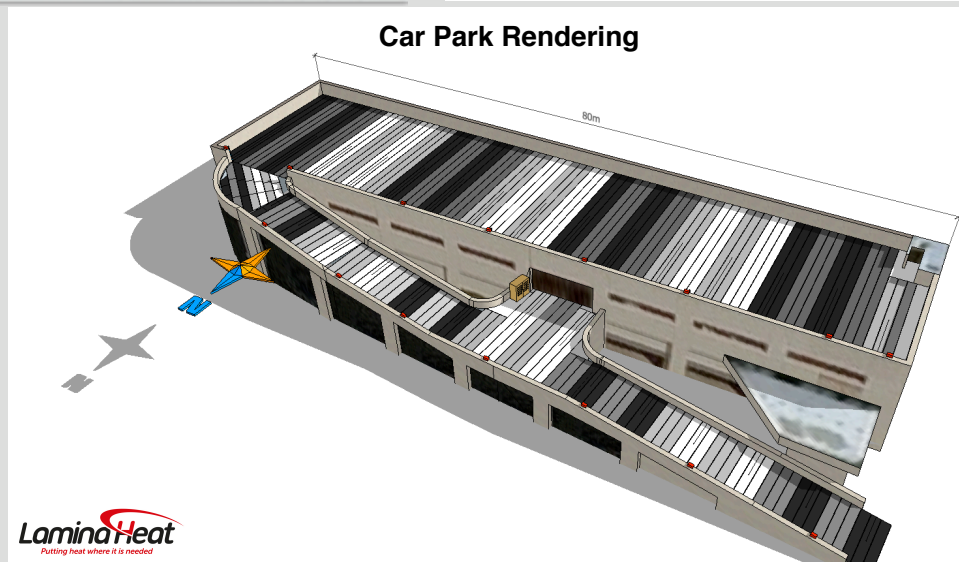
– PowerMelt in Floor Coating



Park House **de-icing** applications



Car Park Rendering

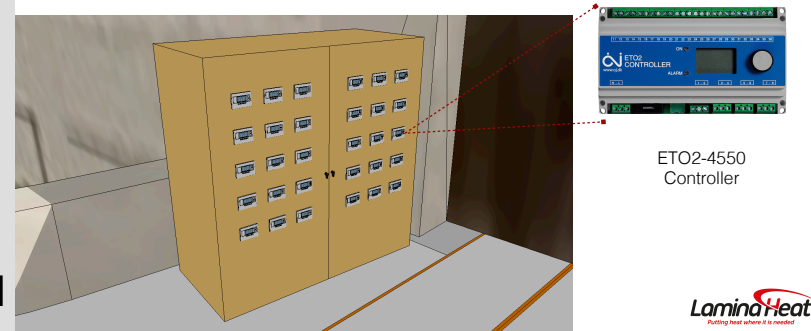


Control system possibilities.....

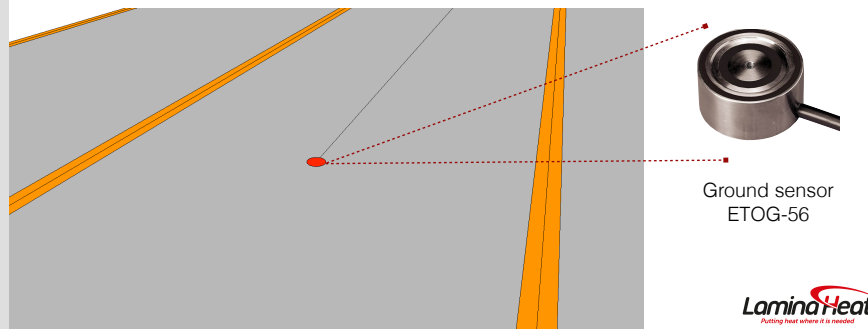
Control systems are designed specifically for the application and can be customized.

- Systems typically have the following features
- Remote monitoring
- Snow sensor for automatic on/off
- Optical temperature sensor for energy savings
- System programming can be upgraded / changed remotely to address specific issues.

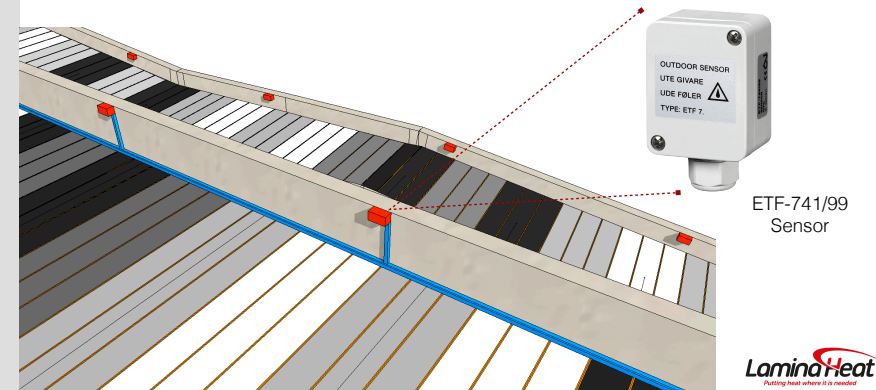
Control Unit



Ground Sensor



Temperature Sensor



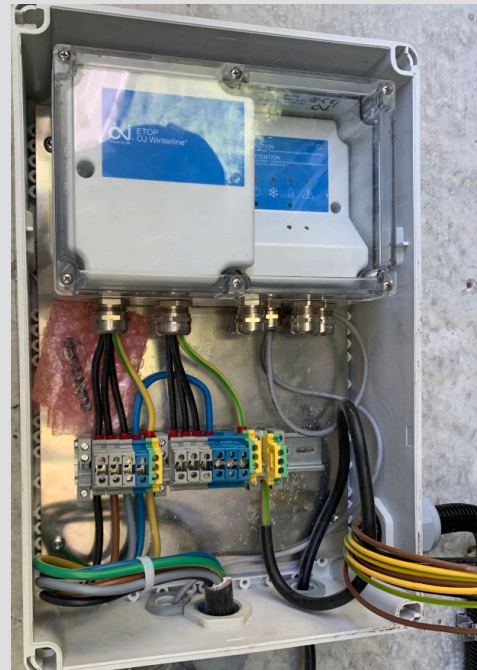
Accessories



Ground sensor
ETOG



ETF-744/99
Sensor



ETOP-4770
Controller

Heating via *LaminaHeat* - *PowerMelt*

Advantages of *LaminaHeat PowerMelt*:

- Very homogenous heat creation
- Generates maximum temperature as designed/needed. (different Wattages)
- Can be embedded into virtually any polymer to meet desired design
- *LaminaHeat* SafeTech Technology (See separate SafeTech PDF)
- Best suitable Ohm Resistance can be designed for the various applications
- A 48V low-voltage version and a 230V / 400V input version is available for the various jobs.
- *LaminaHeat* has a very innovative Supply Chain in place to support OEM's on a global level at the desired quality performance and qualification levels.
- *LaminaHeat PowerMelt* is made in a continuous process, which is designed for large volume production.