SNOWLESS®

Climate-Resilient Infrastructure

SNOWLESS® Consortium

Snowless consortium consists of four companies, each being an expert in their area of expertise: production, installation, safety, and validation. From manufacturing to road safety, our consortium is committed to deliver the highest standard of products and services.


SNOWLESS®
AUTONOMOUS CLIMATE-RESILIENT
INFRASTRUCTURE TECHNOLOGY

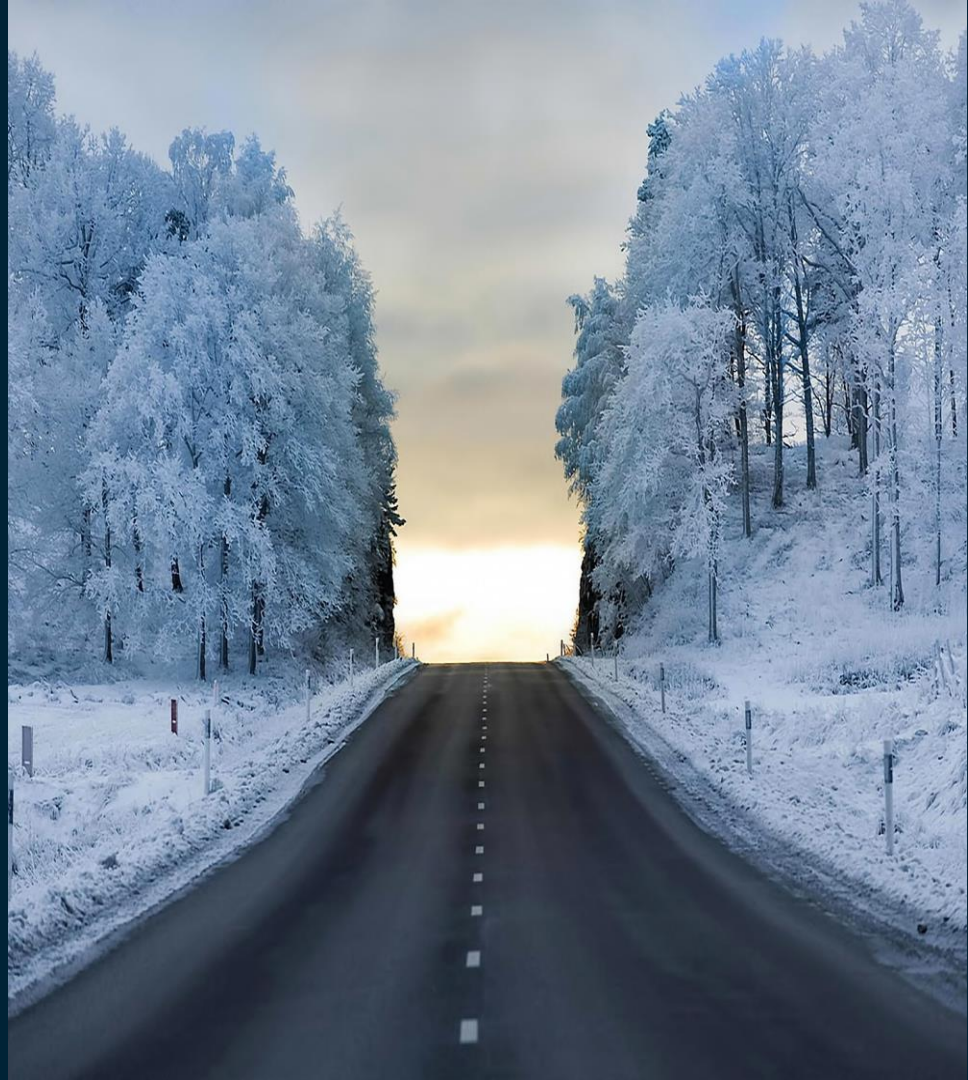
SNOWLESS®

Temperature control technology for climate-resilient infrastructure:

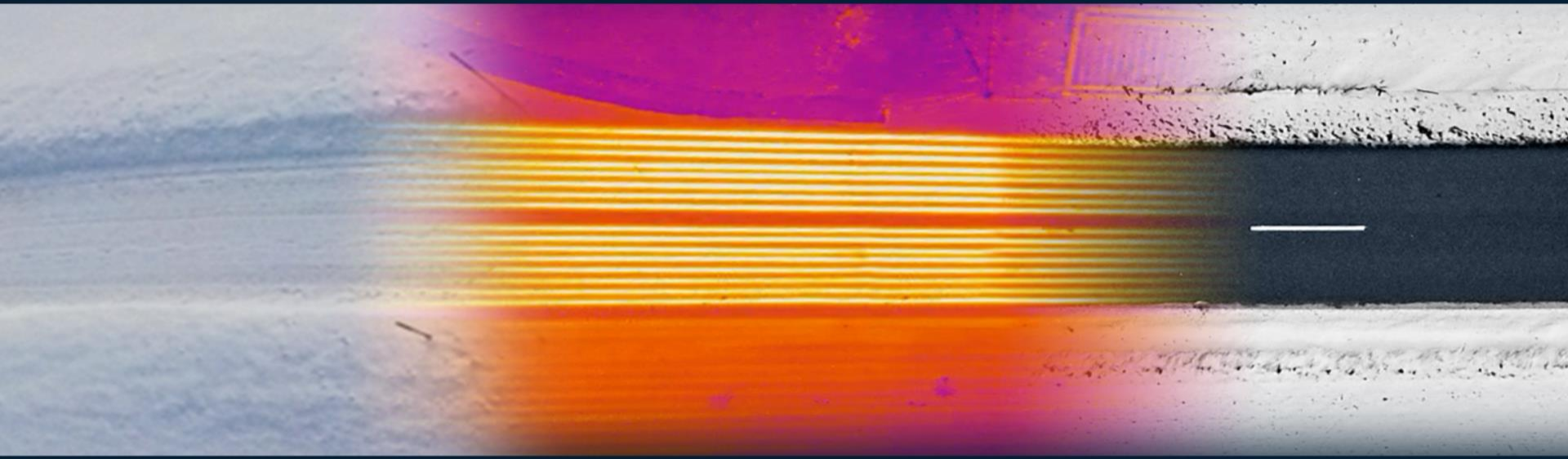
- Snow-Melting / Deicing
- Cracking Prevention
- Frost Heaving Protection

Diverse Surface Installation -

Asphalt, Concrete, Bricks/Stone



How Does It Work?



1
DETECT

2
ANALYZE

3
HEAT

Tech Impact

Patented Technology

- Seamless integration
- No fluid leaks – Maintenance free

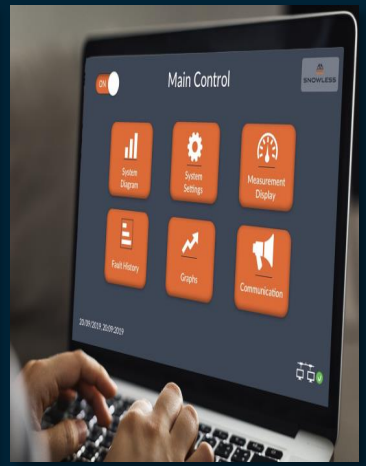
Environmental Impact

- Compatible with renewable energies
- Emissions reduction
- No salt / No chemicals
- Improved infrastructure life cycle

HARDWARE + SOFTWARE

Heating Ribbons

Smart Control System



Components◄

Heating Ribbons

Connections

Control Units and Sensors

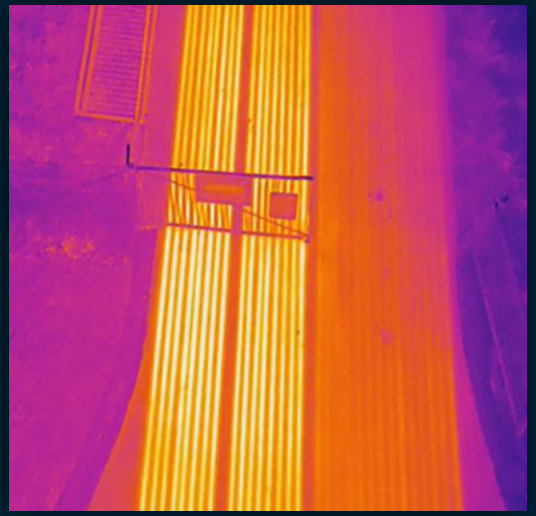
Cable Gutters

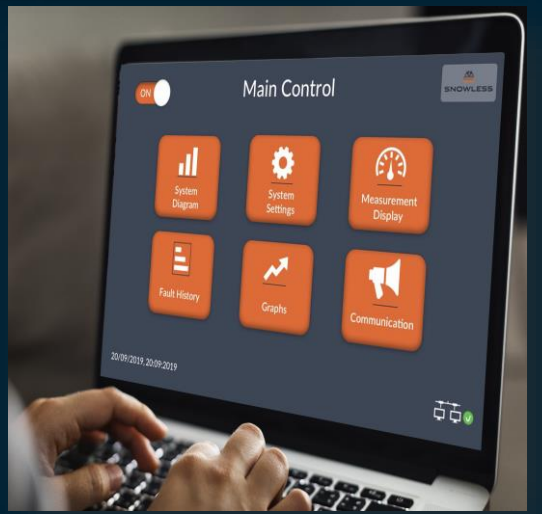
Autonomous Operation

Predictive Modeling → Quick Reaction:

- Remote Weather Sensing
- Scientific-Based Thermal Algorithm
- Reactive Real-Time Data Analysis
- Energy Prioritization and Zoning

Up to 60% Cost Savings vs. Existing Technologies





Design, Engineering, & Installation

SOLUTIONS/ENGINEERING

The Snowless team will prepare the optimum heating solution based on clients' requirements, climatic conditions and site survey. The proposal will include a detailed electrical and deployment plan.

TOP LAYERS

The robust heating ribbons can be applied with various top layers: (hot) asphalt, bitumen, concrete, paving and polymer.

DEPLOYMENT

The heating ribbons are suitable for various installation methods: glued into grooves using special bitumen for protection and fixation, secured to rebar meshes or placed on a sand layer.

COMPONENTS

The heating system consists of heating ribbons, sensors, control unit and optionally cable gutters.

Heavy-Duty Asphalt Applications

Airports

Sport Fields

Bridges

Distribution Hubs

Railway Crossings

Truck Loading Docks

Light-Duty Asphalt Applications

Parking Lots

Emergency Hospital Ramps

Bus Stops

Train Docks

Bicycle Paths

Pedestrian Crosswalks

Deployment◄

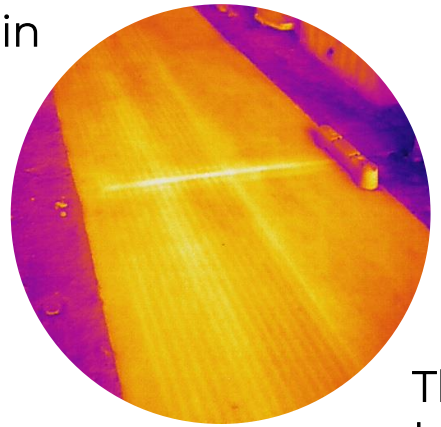
System Constructability◄

Installation in Paving Stones

Installation in Concrete

Installation in Grooves

Installation with Restricted Height

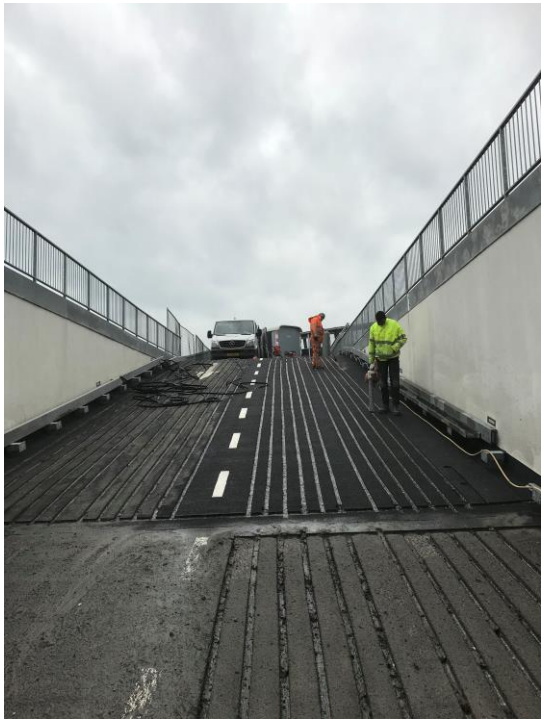


Thermal Camera Images

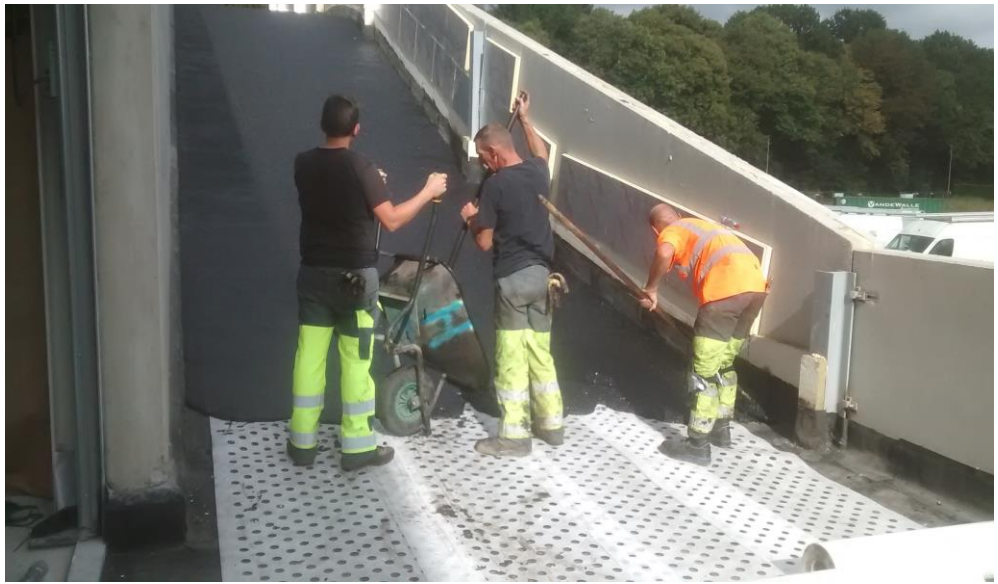
Installation in Paving Stones

Installation in Concrete

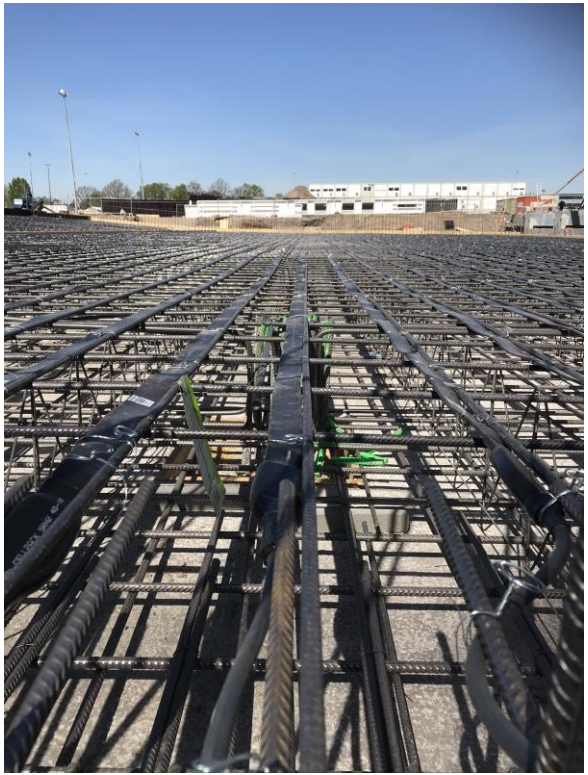
Installation in Grooves



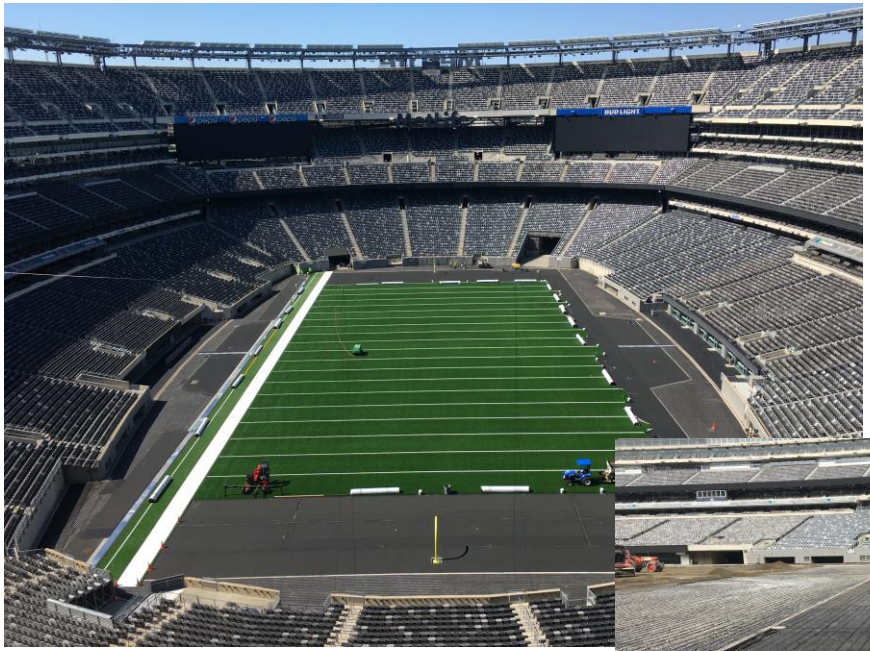
Installation with Restricted Height

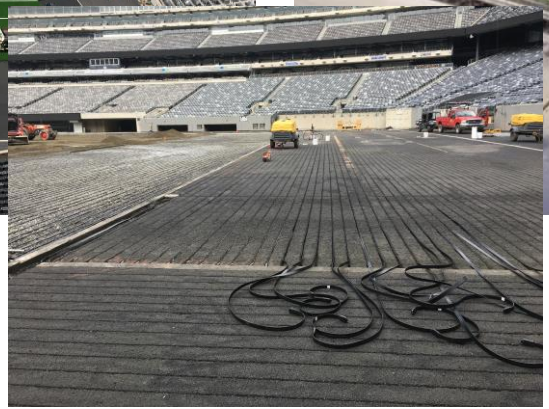


Installation in loading docks

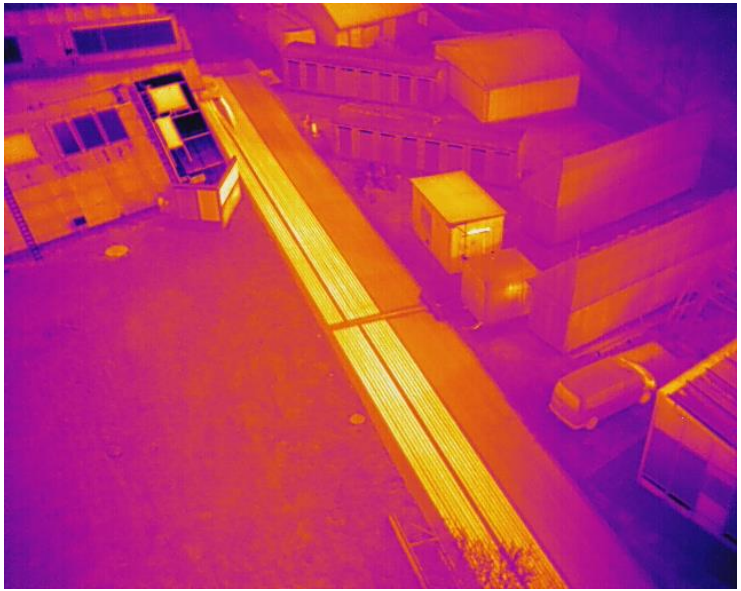


Installation in sports fields





Thermal Camera Images



Top Layers◂

Asphalt

Liquid Asphalt

Polymer

Concrete

Paving Stones

CRACKING PREVENTION

Location: Edenkoben, Germany

Application: Asphalt (special mix)

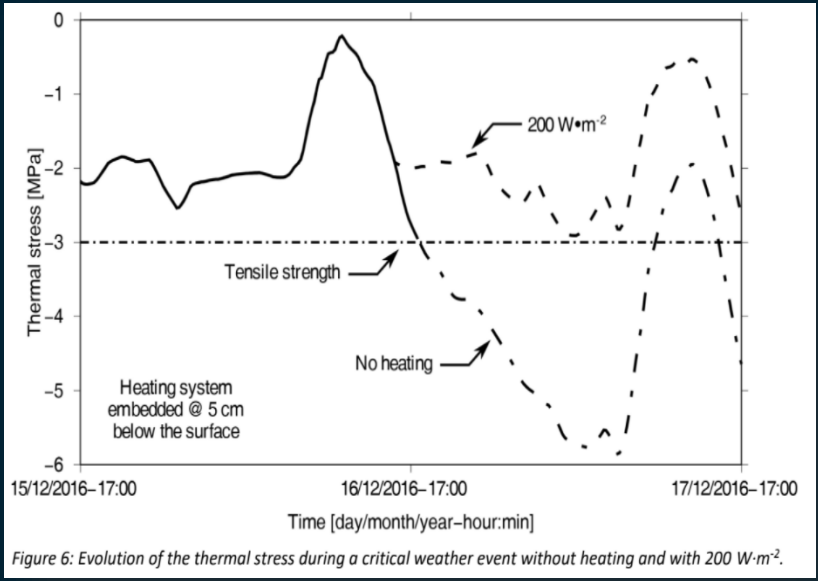
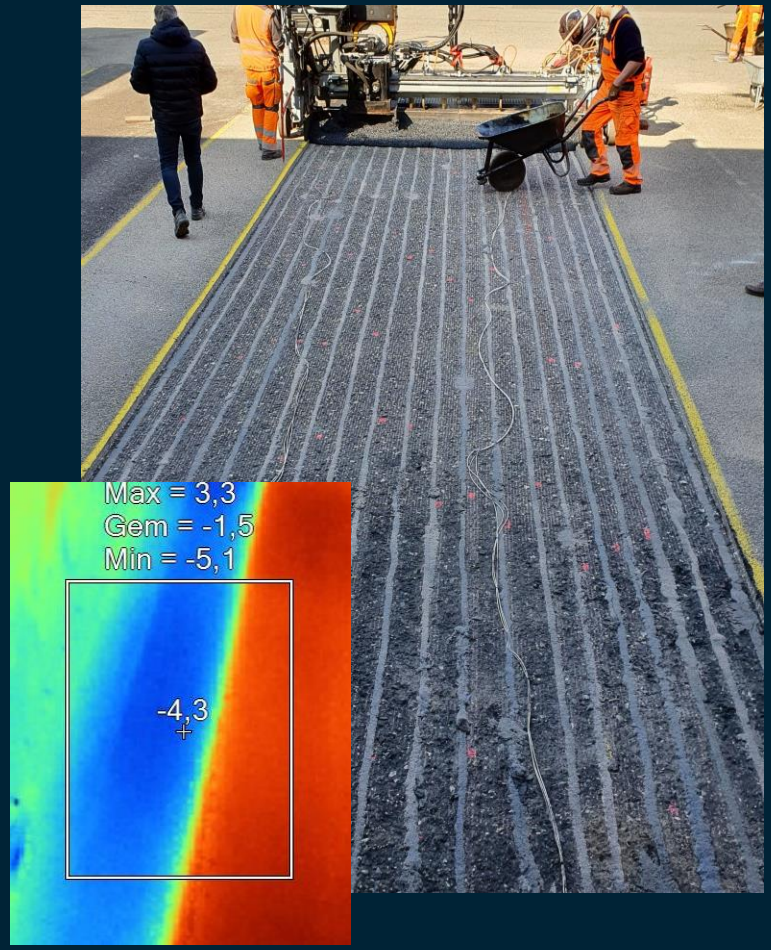


Figure 6: Evolution of the thermal stress during a critical weather event without heating and with 200 W·m-2.

1 Hour Heating = Eliminating Crack Event



SNOW-MELTING

Location: Helsinki, Finland

Application: Asphalt

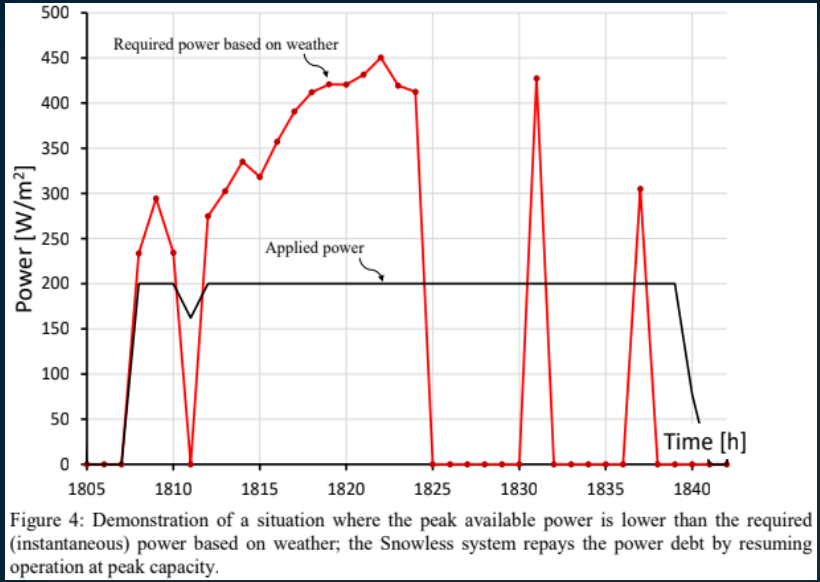


Figure 4: Demonstration of a situation where the peak available power is lower than the required (instantaneous) power based on weather; the Snowless system repays the power debt by resuming operation at peak capacity.

Snow-Free Zone = Annual Cost Of 2€ Per m²

REFERENCES

DTU HEATED ROAD

Country: Denmark

City: Copenhagen

Application: Asphalt

Surface Size: 420 m^2

Installed power: 210 KW

Year: 2021

TRUCK LOADING DOCKS

Country: The Netherlands

City: Eindhoven

Application: Concrete

Surface Size: 2000 m2

Installed power: 210 KW

Year: 2020

RAMP RENOVATION

Country: The Netherlands

City: Woerden

Application: Concrete with PU cover

Surface Size: 500m^2

Installed power: 70 KW

Year: 2019

HEAVY LOADING ROAD

Country: Germany

City: Brandenburg

Application: Paving stones

Surface Size: 500m^2

Installed power: 100KW

Year: 2018

WALMART SIDEWALK

Country: Canada

City: Orleans, Ottawa

Application: Concrete

Surface Size: 120m^2

Installed power: 124 KW

Year: 2017

PARKING

Country: Germany

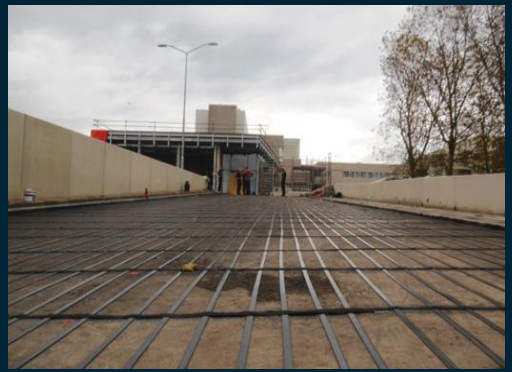
City: Montabauer

Application: Testsite for grooving asphalt

Surface Size: 50m^2

Installed power: 7.5 KW

Year: 2017



MAXIMA HOSPITAL

Country: The Netherlands

City: Eindhoven

Application: Hot Asphalt

Surface Size: 642m^2

Installed power: 65KW

Year: 2017

PEDESTRIAN WALKWAYS

Country: Canada

City: Toronto

Application: Paving stones

Surface Size: 250m^2

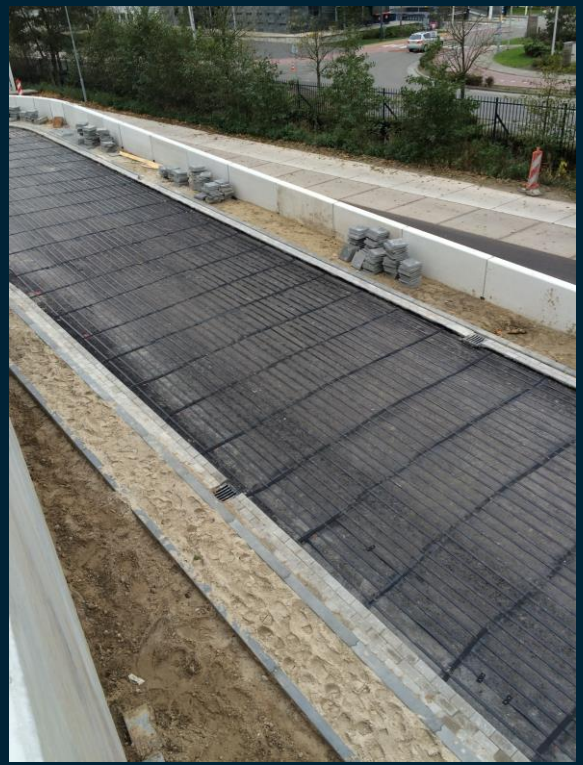
Installed power: 4.5KW

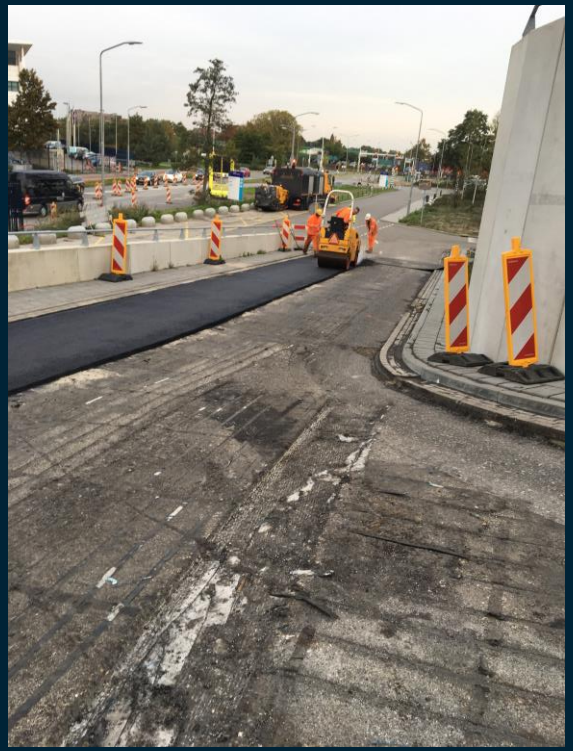
Year: 2017

MAXIMA HOSPITAL (2017)

Location: Eindhoven, The Netherlands

Application: Hot Asphalt





Applications ◄

References ◄

Ramp Renovation (2019)

Location: Woerden, Netherlands

Application: Concrete with PU cover

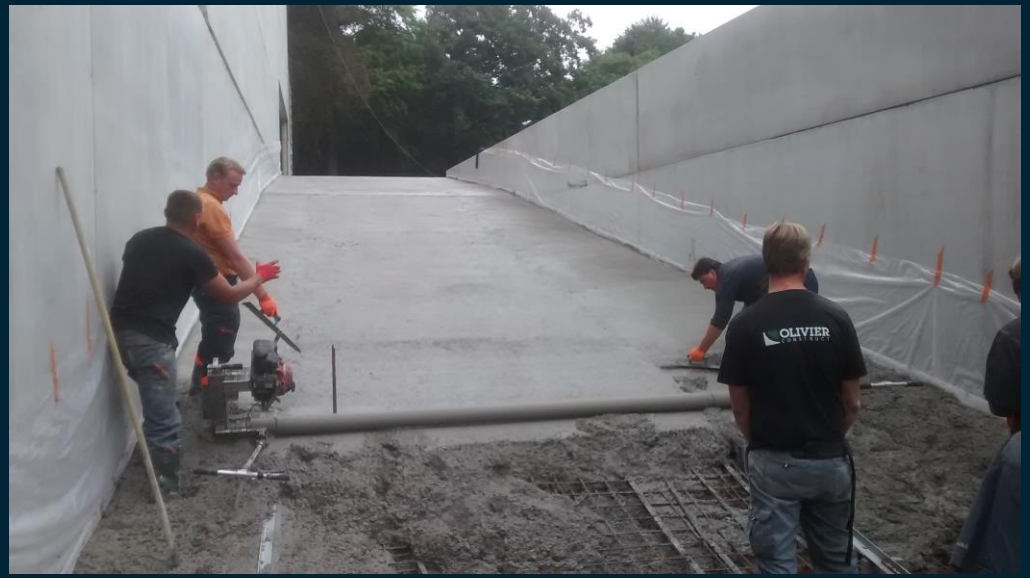
Applications ◄

References ◄

Car Park (2015)

Location: Merelbeke, Denmark

Application: Hot Asphalt + Concrete



Applications ◄

References ◄

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