BACKER
HTI

RAILWAY SOLUTIONS

RELIABILITY · SUSTAINABILITY · COMFORT

BACKER HEATING TECHNOLOGIES INC.

EVERYDAY · EVERYWHERE

Our heating products together with our measurement and control devices offer our customers complete solutions. Our engineers will not only suggest solutions, they can also take part in and contribute to your product development by using our advanced technical tools and lab facilities. Our extensive experience and competence as well as our reliable quality and service guarantee your success. Our ambition is to not only be a supplier, but your preferred partner.

Together we can make it happen!

MEMBER OF BACKER-GROUP

Backer develops, produces and sells customized solutions and components for electric heating, measurement and control. The original technology was stainless steel tubular elements. However, the constant growth of the Group, both organically and through acquisitions, has enabled the integration of several new technologies. Today the Group offers a far wider product range, with a vast number of technologies for several industry sectors and a large variety of applications.

PRODUCTION LOCATIONS

- Backer HTI main office located in the US
- Engineering and sales support in Sweden
- Production facilities in Sweden, China, Poland, and Vietnam.

Customized solutions

INDUSTRY SECTORS

AUTOMOTIVE

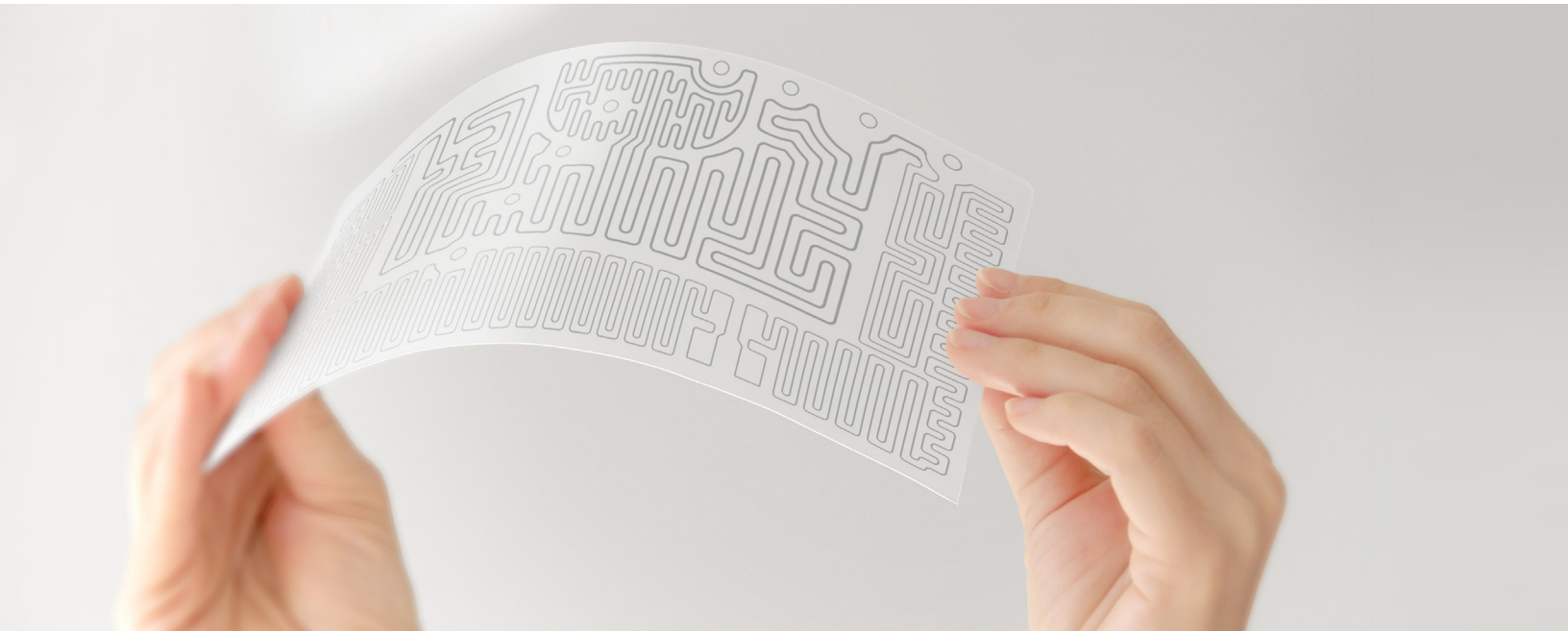
LIFE SCIENCE

RAILWAY

BATTERY

COMFORT

COMMERCIAL EQUIPMENT



RAILWAY HEATING SOLUTIONS

RELIABILITY · SUSTAINABILITY · COMFORT

Backer has been supporting the railway industry by supplying flexible foil, for decades. Our foil is not only approved to be used in high-tech/ weightmanagement applications, but you can also use it as a space-saving efficient alternative. Floor heating, frost protection, rearview mirror heating and seat heating are just a few examples. You can also customize your foil by selecting one of the various materials we offer such as PVC, Polyester, Silicon or Mica.

Typical applications	Windshield wipers	Heating of water pipes
Floor heating systems	Headlights	Switch points
Couplers	Lens heaters	Rear-view mirrors
Steps	Heating in driver's cabins	

PRODUCT DEVELOPMENT

We work together in a gate model to make sure we reach target in cost and production SOP

Evaluation / Design / Development: (A-SAMPLES)
- Specification work
- Feasibility
- First proposals
- Design preparation
- Prototype design

Prototype development: (B-SAMPLES)
- Initial testing
- Verification and analysis of A-samples

Production development: (C-SAMPLES)
- Production work / final design
- Documentation and preparation

Preproduction
- Functional test and evaluation
- Production engineering

Testing & validation
- DVP Work
- PPAP

Approval to start: First serial delivery
- Project management
- Final report
- Final design

DVP PERFORMANCE TESTING

- To validate the design, we perform the test needed to fulfill specification
- Temperature profile (sensor and image)
- Resistance to climate and environment
- Electrical durability and resistance
- Specific customer requirements

QUALITY

We strive to deliver the highest quality products combined with a flexible way of working. This permeates the whole process including sales, product development, manufacturing, customer service and logistics. Backer HTI delivers products that meet all relevant standards and tests, certifying products according to customer specifications. We are also able to carry out tests in modern labs, constantly improving our product performance and energy efficiency.

CERTIFICATIONS

Backer is certified
according to ISO 9001 · ISO 14001

SUSTAINABILITY BY BACKER

Our facilities in China, Poland & Vietnam
are certified according to ISO 14001,
ISO 9001 and IATF 16949
Third-party approvals:
VDE / ETL / S / UL

BACKER HTI

Innovations for the future

A partnership with Backer HTI gives you a dedicated team of designers, project engineers and technical experts in the fields of electric heating, measurement and control, ready to provide you with the optimal solutions for your needs.

HEATING COMPONENTS

FLEXIBLE FOIL ELEMENTS

Flexible, lightweight and space-saving

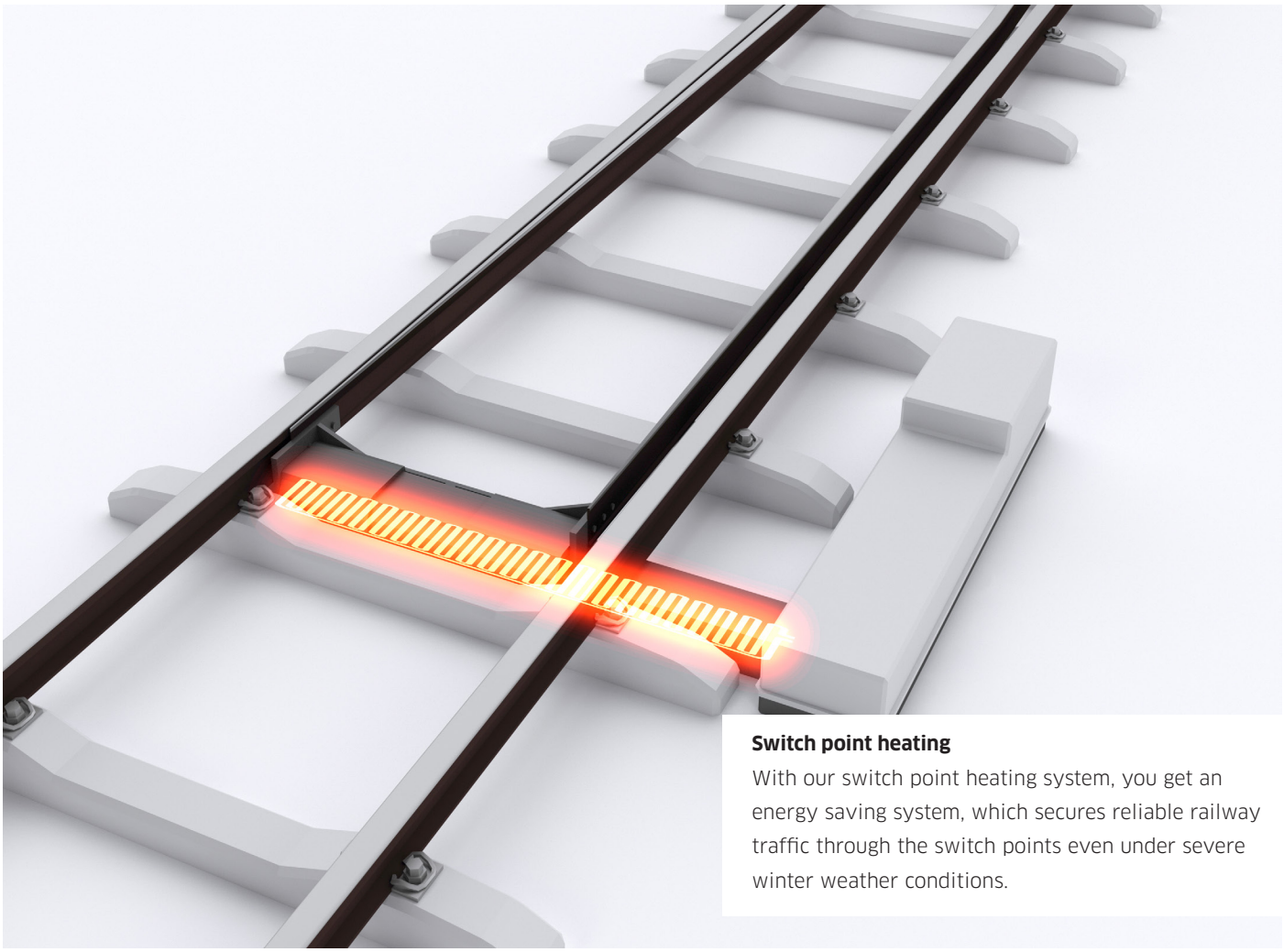
Flexible elements, or foil elements, offer many advantages, beside the fact that the material is flexible. Examples include the ability to have multiple circuits or multiple voltages in the same element, or the ease of locating a sensor. Foil elements provide excellent thermal transfer where you need it most. They are used in thermal control design to protect components under cold-case environmental conditions or to make up for heat that is not dissipated. Foil elements are a space-saving, efficient alternative to applications where precise heat and maintaining exact temperature are important. They are supplied in various materials such as Polyimide, Polyester, Silicon, PTC and Mica.

Benefits

- Thin, flexible & lightweight
- Customized shape
- Multiple temperature zones
- Efficient heat transmission
- Simple assembly
- Wide material selection

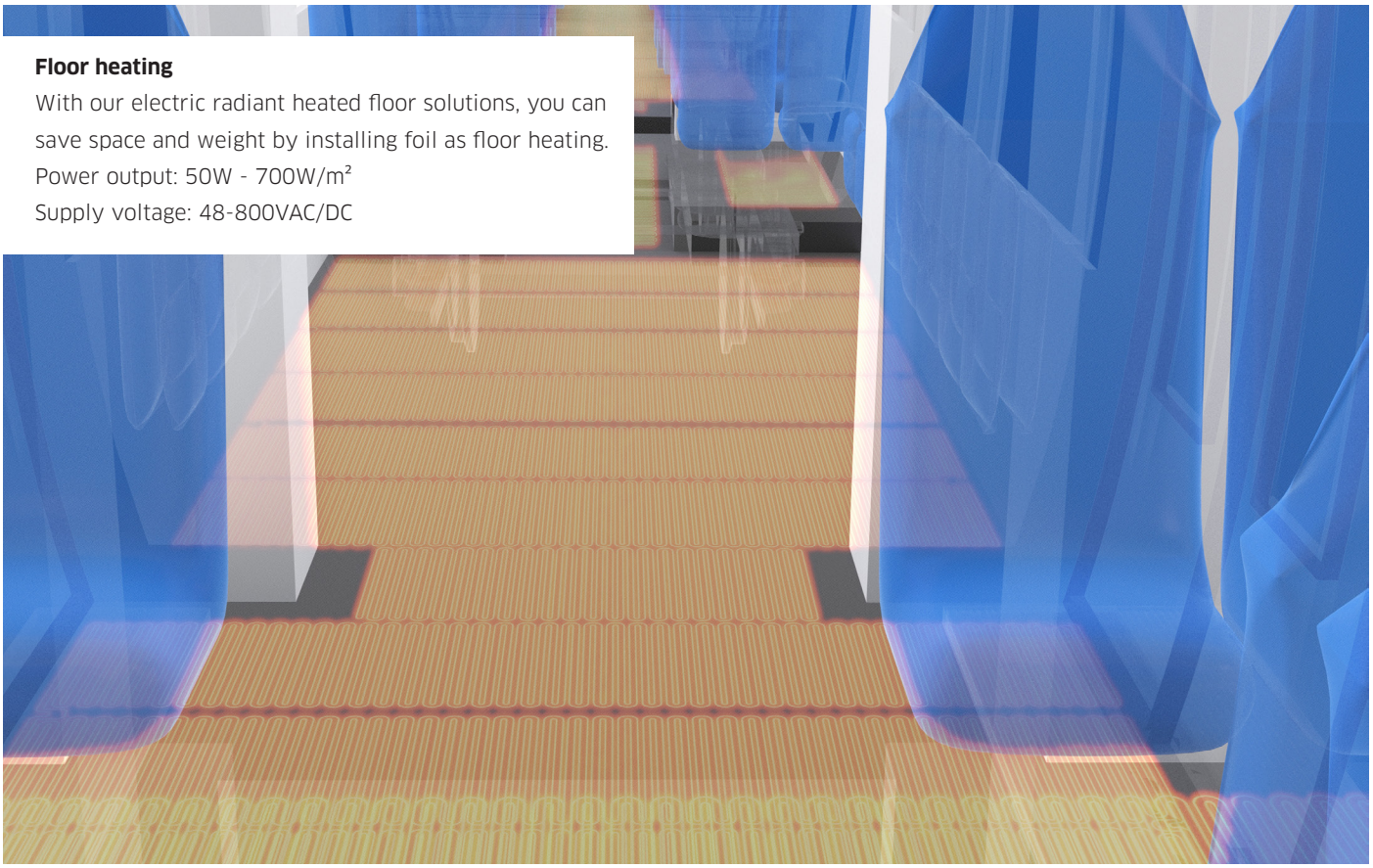
Technical specifications

We offer standard products as well as fully customized solutions
Voltage: Up to 1000V
Power density: From 0 to 5W/cm²
Max temperature: 600°C



Switch point heating

With our switch point heating system, you get an energy saving system, which secures reliable railway traffic through the switch points even under severe winter weather conditions.

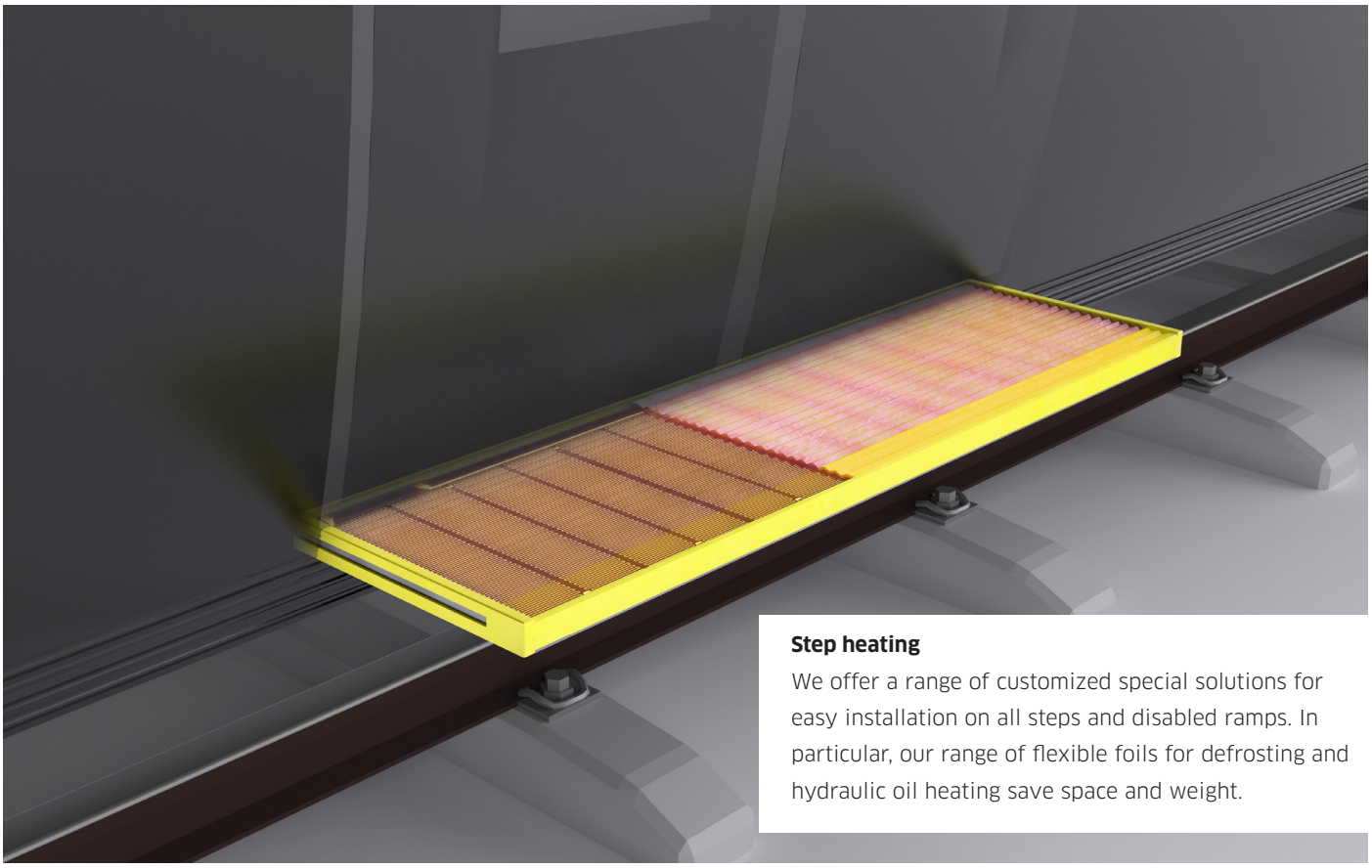


Floor heating

With our electric radiant heated floor solutions, you can save space and weight by installing foil as floor heating.

Power output: 50W - 700W/m²

Supply voltage: 48-800VAC/DC



Step heating

We offer a range of customized special solutions for easy installation on all steps and disabled ramps. In particular, our range of flexible foils for defrosting and hydraulic oil heating save space and weight.

TEMPERATURE CONTROL

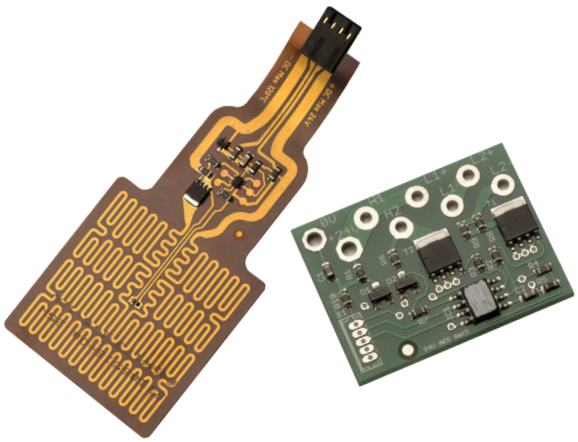
ELECTRONIC CONTROL SYSTEMS

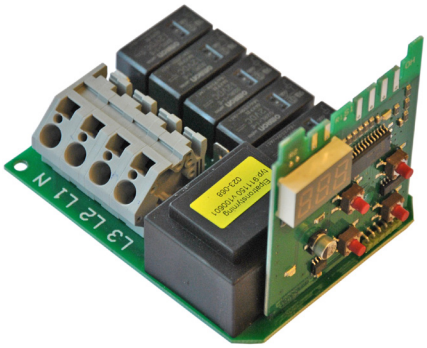
Control and energy balance

Flexible foil heaters provide excellent thermal transfer where you need it most. Heaters are used in thermal control design to protect components under cold-case environmental conditions or to make up for heat that is not dissipated. It is usually necessary to arrange some form of control to ensure that the desired temperature is maintained; accurate temperature control is therefore needed. This can be achieved with electromechanical thermostats of bimetallic type when temperatures and surface ratings are low, while electronic thermostats are preferred when temperatures and surface loads are high. We can fit thermostats, temperature fuses and sensors of thermo element type, thermistors and resistance sensors directly to elements in accordance with customer specifications. This helps to ensure reliable control.

Integrated control/smart heater

The demand for smart simple solutions creates new applications and we can offer solutions with integrated thermal controllers and sensors communicating through RS232, WiFi or Zigbee.





Motorcontroller

- Soft Starter
- Soft Starter with brake
- Compressor Soft Starter

The P-Line range of Soft Starters covers a wide spectrum from 0.1 – 110 KW motors, making them ideal for a variety of Soft start/stop applications. The units incorporate an optional High Torque Kick start feature, the initial torque is adjustable by the user and the units offer fully adjustable start and stop ramp times.

Inverters

We supply electronic control systems to meet the high demands of control and safety of the automotive heating devices. Our control systems are designed according to customer requirements and to ensure that safety and valid regulations are met.

CUSTOMIZED SOLUTIONS

Customers often come to us with an idea about a new project/solution, a need for our expertise or because they want to enter a partnership with us. We are more than happy to share our facilities, vast experience and expertise at this initial stage. The earlier we are involved in a project, the more we can control the optimization of core issues, such as the choice of materials, components and technology, temperature control, energy consumption and sustainability, cost efficiency and compliance with all applicable norms, regulations and standards.

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