

# For comfortable travel and material wear prevention

Travel trends have changed – the requirements facing the rail industry as well. Angst + Pfister addresses this issue with integrated solutions isolating vibration and noise.



*The experience of nostalgia: The Furka steam train rolls through Swiss mountain landscape. – The experience of technology: Progress never stops.*

The idea of a journey on an old steam train through picturesque landscape awakens in us wonderfully nostalgic emotions. Whereas in times long since past, this new method of transport was revolutionary and pioneering – its importance to both passengers and freight made it easy to suppress the reality of how uncomfortable, noisy and bumpy these journeys must have been.

Technology has been evolving continuously, mainly to meet the need for greater safety and safeguard the health of people, but also in view of a more efficient cost-benefit ratio. Apart from minimising wear and tear as far as possible, the aim is simply to make travel more pleasant and comfortable. Essentially, it is the role of Research and Development to reduce noise emissions, isolate vibration and, of course, ensure fire safety. A major part of their work is outfitting train cars with special floor systems.

## **The authoritative specialist**

Having a background firmly rooted in modern technology, Angst + Pfister is the absolute specialist in this area and a long-standing partner in the development of solutions, the manufacture and selection of specialist materials, as well as finding and analysing products for both regional and national rail companies. High-technology floor systems are a steadily growing market, something that



Reduce material wear and vibration, increase travel comfort: Angst + Pfister has solutions.

becomes apparent when considering the big production companies in the rail industry and the business partners of Angst + Pfister, such as Alstom, Hitachi, Siemens and Bombardier – and all will be working at full capacity over the next 3–5 years.

#### Single source solutions

Angst + Pfister is well established as a trusted partner, not only through many years of experience and specialist know-how in this area, but also due to its comprehensive process optimization work, because effective collaboration is not just about being at the forefront of the latest technology, it is also a question of exactly identifying and anticipating the requirements of your partners and customers. There is a clear trend in the railway industry towards one-stop solutions. In addition to new advances in the field of R&D, cost optimization and the reduction of installation time and costs, there is also the prime consideration of achieving a more efficient supply chain management in terms of financial risk and optimization of lead times and on time de-

livery. In line with this trend, Angst + Pfister has joined forces with Bellotti and AGT Engineering in offering integrated floor system solutions.

The company Bellotti S.p.A. was founded in 1927 and is anchored in the timber sector, specializing in the production of chipboard panelling. Because panels are only part of the system, AGT Engineering was brought in as the partner with responsibility for designing the entire floor construction.

#### Various composite materials

Whereas in Europe and Asia, wood and wood composites are the combination of choice, in the USA laminated wood panels sandwiched between aluminum or composite panels are preferred, due to far stricter fire and smoke safety regulations. Wood is 30%–50% cheaper and its superior thermal and acoustic insulation properties will continue to make it the favoured based material.

Having outstanding expertise in the field of antivibration technology, Angst + Pfister



Antivibration technology for floor systems: individually designed according to region and standards such as DIN EN 45 545.

can provide for both methods a variety of suitable composite materials. All the solutions offered are fire- and smoke-resistant, and compliant with the relevant EU standard EN DIN 45 545, which has replaced national safety regulations in the EU.



The trend in the rail industry is for the customer to prefer a package solution. Angst + Pfister and Bellotti provide just that with their comprehensive floor system that absorbs noise and vibration.