TRELLEBORG

RAIL AND MASS TRANSIT

# Coating Tomorrow's Innovations

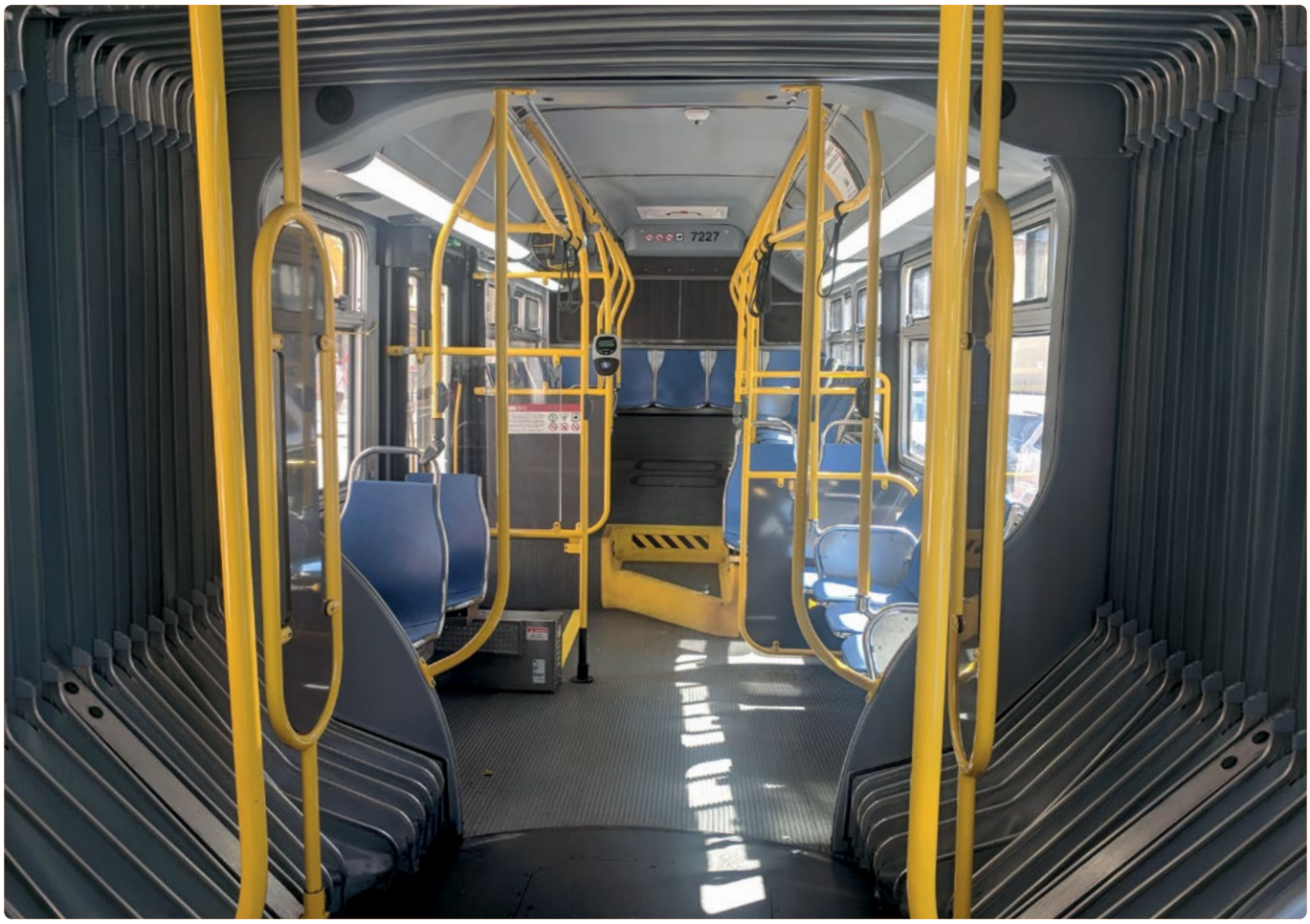
# Advancing Transportation with Innovative Gangway Bellow Materials

## ENHANCING PERFORMANCE AND SAFETY IN RAIL & MASS TRANSIT

At Trelleborg, we are at the forefront of transforming the Rail & Mass Transit industries with our cutting-edge coated materials, focusing on advancing gangway bellows technology. Leveraging the latest coating, lamination, and hot melt technologies, we engineer high-performance fabrics that redefine the safety, comfort, and sustainability of transportation systems.

## GANGWAY BELLOWS: CONNECTING TRAVEL, ENHANCING EXPERIENCE

Gangway bellows serve as vital components, facilitating seamless connections between train cars while safeguarding passengers' journey. Trelleborg's engineered coated fabrics for gangway bellows set new standards for performance and reliability, ensuring a smooth and secure travel experience for commuters worldwide.



## KEY PERFORMANCE CHARACTERISTICS

Multiple Coating Options

**CSM and Silicone Coatings Available:**

We offer a range of coating options, including CSM (no halogen added) and Silicone (no halogen), providing versatility to meet specific application needs.

Flexible

**Flexible & Halogen-Free (Silicone):**

Silicone-coated fabrics provide excellent flexibility, contributing to passenger comfort, and are halogen-free, making them safe and eco-friendly for railway applications.

Flame retardant

**Flame Resistance (FR):**

Our gangway bellows materials are designed to be highly flame-resistant (R1HL3 – R1HL2 - R7HL2), providing critical protection in the event of fire, enhancing passenger safety.

Noise Dampening

**Noise Dampening:**

Trelleborg's coated materials act as effective insulation, reducing noise levels during train travel, enhancing passenger comfort, and reducing stress.

High abrasion resistance

**High Abrasion Resistance:**

Trelleborg's coated materials offer exceptional resistance to abrasion, ensuring durability and a longer service life for gangway bellows, minimizing maintenance requirements.


High stretch

**Durable and Resistant to Flex Fatigue:**

Our materials are engineered to withstand flex fatigue, ensuring longevity and low maintenance costs for operators.


REACH compliant

**REACH Compliant:**

Committed to environmental sustainability, our materials comply with REACH regulations, promoting the safe use of chemicals in the European Union.

Wipe clean

**Easy to Work With:**

Our materials are designed for easy handling, allowing for fast stitching and easy sealing, streamlining production processes.

Made in the USA

Made in the EU

**US and EU Made:**

Trelleborg's gangway bellow materials can be manufactured in the USA or the EU, providing flexibility to meet regional compliance requirements.

# Engineering Excellence in Gangway Bellows

## ENSURING SAFETY, RELIABILITY, AND PERFORMANCE

Trelleborg's dedication to providing the highest-quality gangway bellows is exemplified through rigorous material physical performance testing. We meticulously evaluate our coated materials to guarantee optimal performance, durability, and compliance with industry standards.

## PHYSICAL PERFORMANCE TESTING

At Trelleborg, we subject our gangway bellow materials to a battery of comprehensive physical performance tests, including:

**Thickness:** Ensuring uniformity and precision in material thickness to meet stringent specifications.

**Tensile Resistance Strength:** Evaluating the material's resistance to stretching and tension to ensure structural integrity.


**Elongation at Break:** Measuring the material's ability to stretch without breaking in use, ensuring flexibility and reliability.

**Tear Strength:** Assessing the material's resistance to tearing and impact damage, ensuring long-lasting performance.

**Peel Strength:** Testing the adhesion of coating layers to substrates for robust bonding.

**Abrasion Resistance:** Evaluating the material's resistance to wear and friction, enhancing longevity.

**Operation Temperature:** Verifying the material's performance under extreme temperature conditions.

**Hot Air Aging:** Assessing changes in hardness, tensile strength, and elongation after exposure to elevated temperatures.

**Ozone Resistance:** Testing the material's ability to withstand ozone exposure without deterioration.

**Brittleness Temperature:** Determining the lowest temperature at which the material remains flexible.

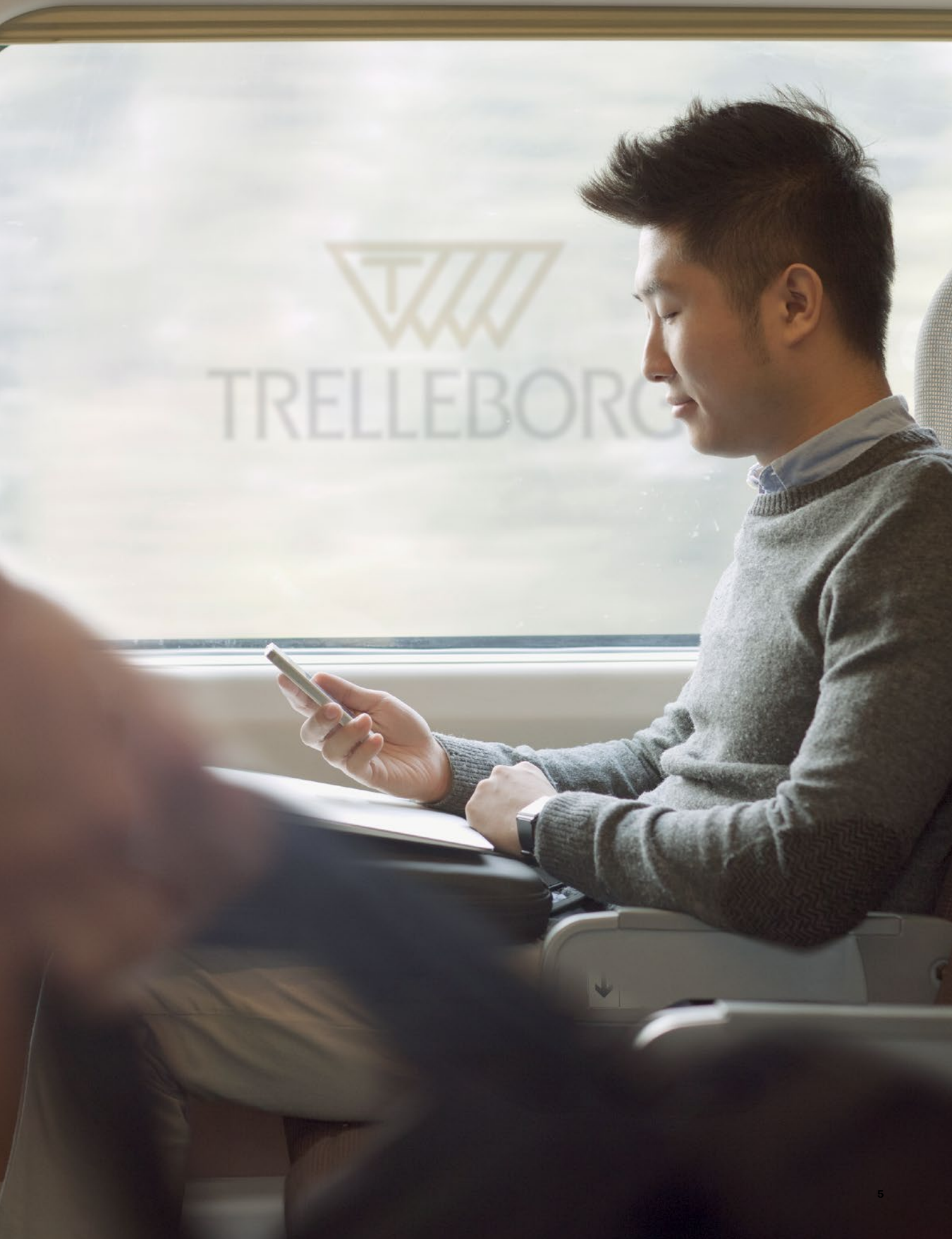
**High Temperature Stability:** Ensuring the material's stability under high-temperature conditions.

**Cold Resistance Stability:** Assessing the material's performance in low-temperature environments.

**Color Fastness (UV Resistant):** Verifying color retention and UV resistance, ensuring long-lasting aesthetics.

**Fire Standard Compliance:** Trelleborg's FR materials comply with rigorous fire standards, including EN 45545-2, NFPA 130, BS 6853, DIN, and NF F 16-101, ensuring global safety compliance.

**FIND OUT MORE ABOUT TRELLEBORG ENGINEERED COATED FABRICS TECHNOLOGY**
Visit **www.TrelleborgECF.com** for more information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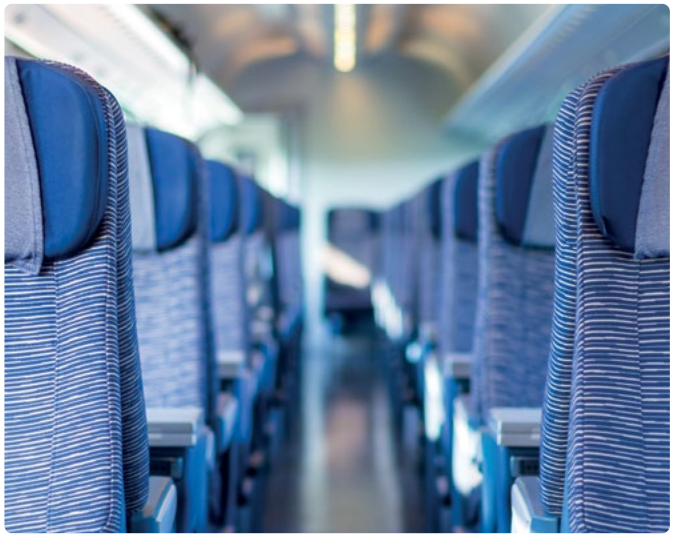
# Innovating for Seamless Travel

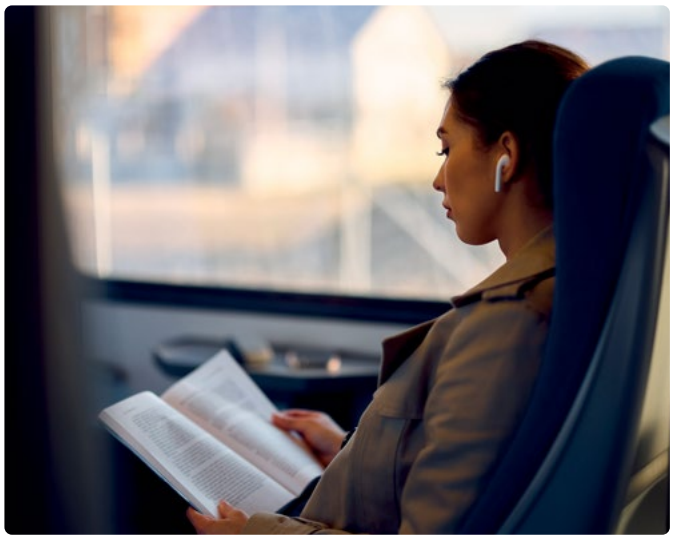


## ENGINEERING SOLUTIONS FOR THE TRANSPORTATION INDUSTRY

Trelleborg's commitment to innovation and engineering excellence empowers us to cater to diverse applications within the Rail & Mass Transit industries. Beyond gangway bellows, our coated materials offer tailored solutions to meet the unique challenges faced by modern transportation systems.

## BUILT TO LAST: ABRASION RESISTANCE AND HIGH-TEMPERATURE CAPABILITIES:

Our flexible ducting materials are not only comfortable but also built to withstand the rigors of rail travel. With exceptional abrasion resistance and high-temperature capabilities, our coated materials ensure longevity and reliability even in demanding environments.



## FLEXIBLE HVAC DUCTING MATERIALS: ENHANCING PASSENGER COMFORT WITH INNOVATIVE SOLUTIONS

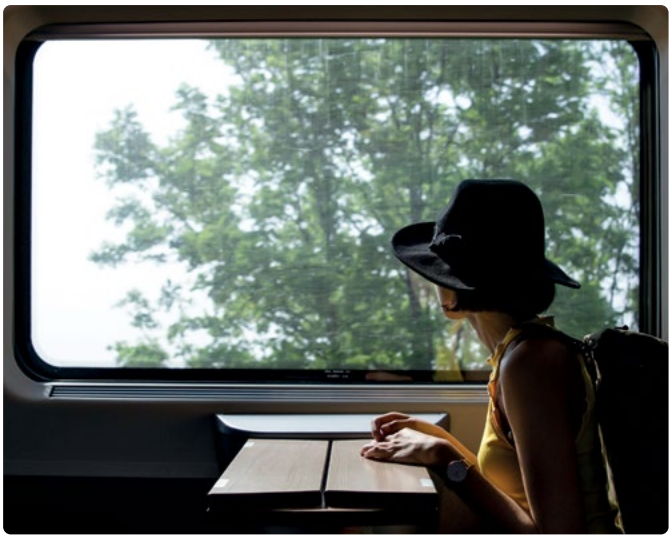
Trelleborg Engineered Coated Fabrics specializes in providing advanced coated materials for flexible HVAC air ducting systems designed to prioritize passenger comfort. Our materials are engineered to comply with DIN, NFPA, and EN45 545 standards, ensuring top-tier quality and safety for railway applications.

## ENGINEERED FOR OPTIMAL PERFORMANCE:

Our CSM and Silicone coated fabrics are meticulously designed to offer flexibility, durability, and efficient air distribution. This unique material design guarantees consistent passenger comfort even across varying conditions, making every journey more enjoyable.

## ENHANCED QUIETNESS AND ENERGY EFFICIENCY:

Experience the difference in rail travel with our coated materials that contribute to quieter and more energy-efficient HVAC systems. With a strong emphasis on noise reduction and energy efficiency, we enhance the overall passenger experience by providing a quieter and more eco-friendly ride.



## PROTECTING THE ESSENTIAL

Trelleborg Engineered Coated Fabrics is committed to reducing its environmental impact. By sourcing eco-friendly raw materials, utilizing advanced technology, and implementing energy reduction programs at all ISO14001:2015 certified manufacturing sites, they aim to achieve carbon neutrality by 2035.

## Antivibration Solutions

Trelleborg Group offers a suite of rail innovations to meet diverse market demands. Beyond the robust solutions of the Engineered Coated Fabrics unit, the Antivibration Solutions (AVS) unit stands out with its specialization in rubber-to-metal bonding. This expertise significantly reduces noise and vibrations, enhancing comfort and safety while prolonging product lifespan and optimizing costs. Explore the depth of AVS's impact at:

Trelleborg.com/en/anti-vibration-solutions

## Coating Tomorrow's Innovations

Trelleborg Engineered Coated Fabrics leads the way in providing high-performance materials for gangway bellows and various critical applications in the Rail & Mass Transit industries. Our focus on safety, reliability, and sustainability sets new standards for transportation solutions worldwide. Partner with us to unlock the potential of coated materials and shape a sustainable future for rail and mass transit systems.

**To learn more, please get in contact:**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