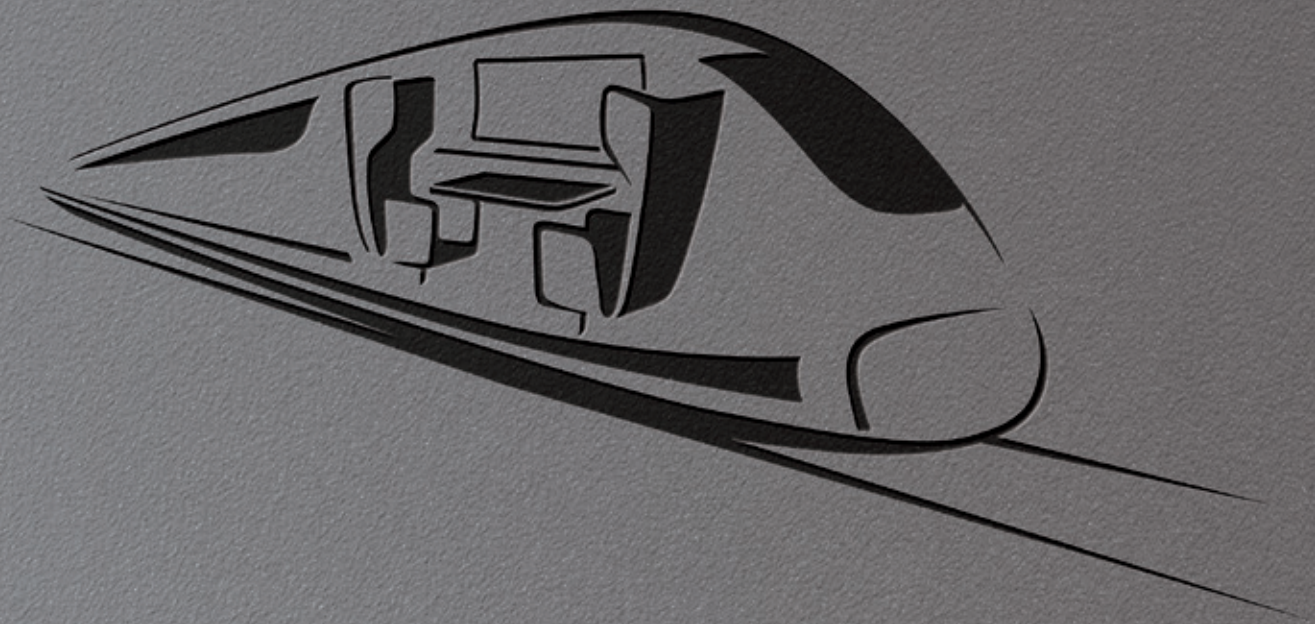


**SIMONA**



# SIMORAIL

**EN 45545 AND NFPA 130 COMPLIANT MATERIALS FOR RAILWAY INTERIORS**

**SIMONA**





## INNOVATIVE THERMOPLASTICS SOLUTIONS FOR RAILWAY INTERIORS

SIMONA is a world leader in thermoplastics for demanding applications. Our semi-finished products and piping systems are designed to help meet key challenges of the future. Boasting more than 35,000 items, our product range is one of the most extensive worldwide.

With our SIMORAIL family, we have developed a range of high-performance thermoplastic sheets designed to provide maximum safety, weight savings, and long-term durability in railway interiors. The products combine the benefits of simple handling and superior thermoformability with the merits of multiple design options that will transform any rail car into a genuine eye-catcher. Specially developed to meet the exact requirements of all major global industry standards including EN 45545 and NFPA 130, our low-flammability SIMORAIL sheets also offer global regulatory compliance and superior safety when it comes to FST performance.

## BE OUR PARTNER ON YOUR NEXT PROJECT

Be our partner in innovation for designing and creating components that will meet the demands of tomorrow's railway interiors. Maintaining a global network of subsidiaries and production facilities in Europe, America and Asia, we are renowned for providing a fast, flexible and reliable service. No matter the regulatory requirement, application or part type, our local engineering and customer service teams will support you in finding the right thermoplastic material solution for your needs.

## LIGHTWEIGHTING SOLUTIONS

Compared to traditional materials such as metal or glass fiber-reinforced plastics, SIMORAIL sheets offer significant weight savings, while still exhibiting good impact resistance and toughness. This means parts made of SIMORAIL plastic are easier to handle and transportation and shipping costs are decreased. Lighter materials equate to an overall lighter train, which can reduce track damage, energy consumption and total operating costs.

## EASE OF CLEANING

Passenger safety starts with the right material. SIMORAIL plastics provide reliable, long-term durability in areas, where frequent cleaning is required to ensure the health and safety of all passengers and train personnel. SIMORAIL sheets offer a high resistance to cleaning agents and maintain a superior surface appearance over a long period of time.



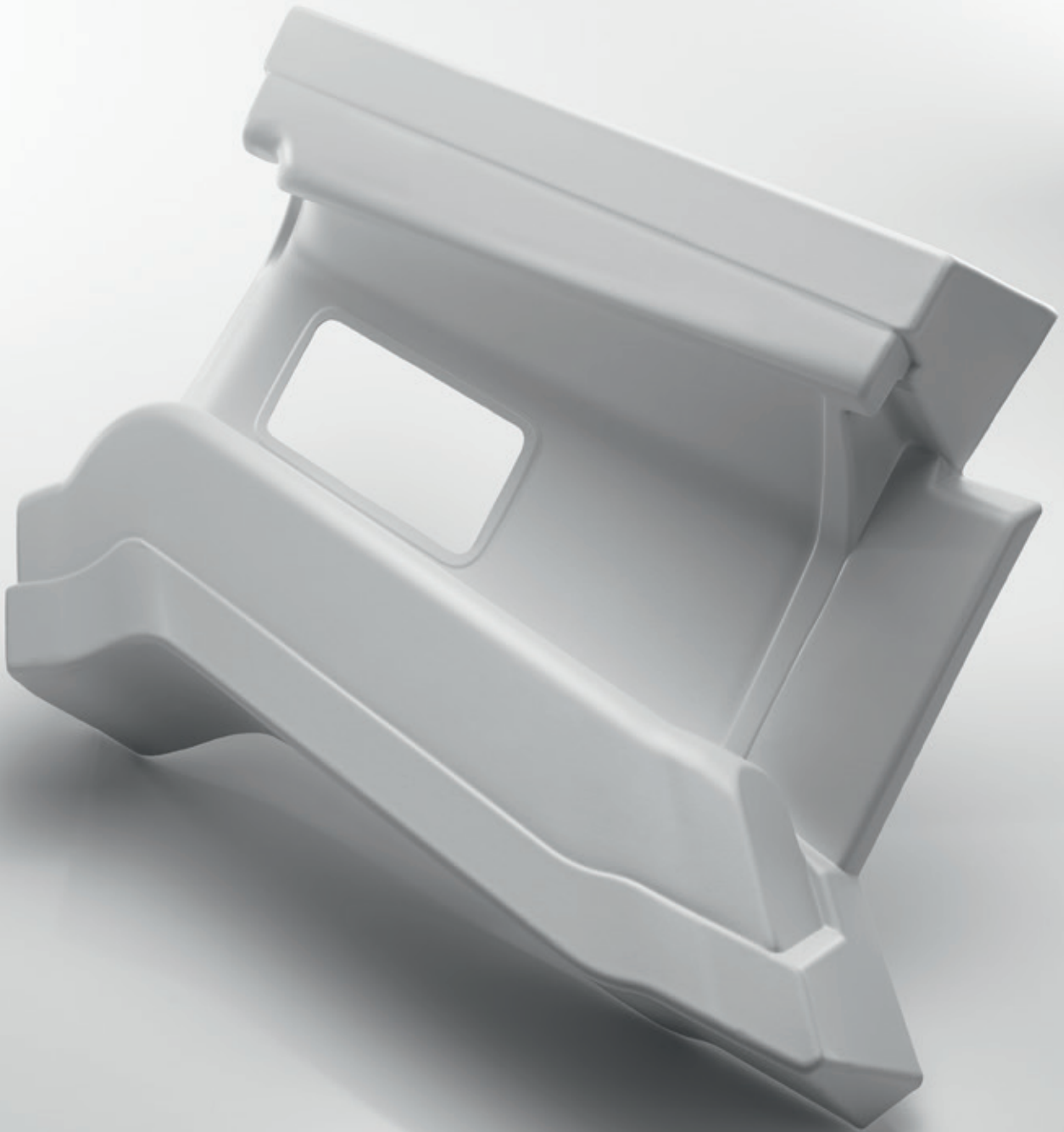


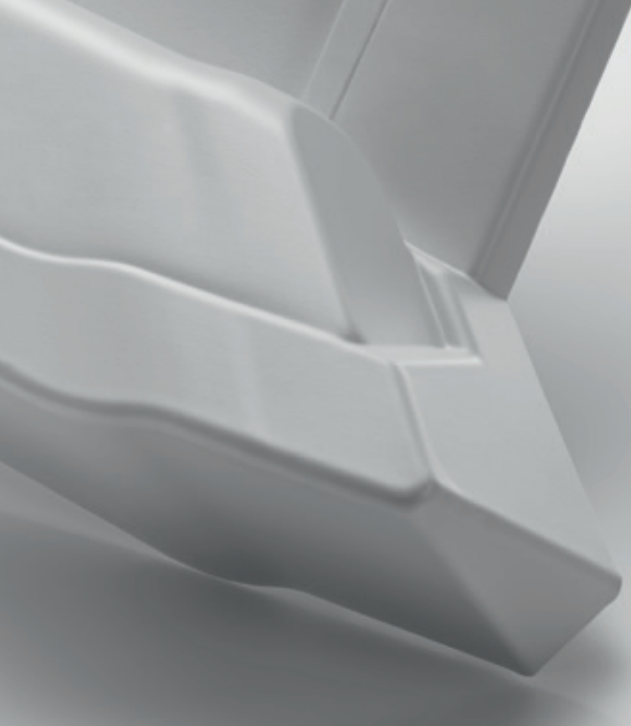
## SUSTAINABILITY MEETS DURABILITY

We love plastics and our environment. Our SIMORAIL sheets make a valuable contribution to the conservation of resources by replacing heavier materials and thereby reducing CO<sub>2</sub> emissions. Thanks to their special property profile, SIMORAIL sheets also have a particularly long service life and can be fully recycled at the end of it. As early as at the production stage, we make sure that material waste is returned to the production process, thus guaranteeing minimal material loss along the entire production chain.

## SUPERIOR THERMOFORMABILITY

SIMORAIL products are manufactured under closely monitored conditions to ensure consistently high quality. The sheets exhibit an outstanding surface finish and offer extraordinary thermoforming and processing properties. Using SIMORAIL sheets, highly complex parts can be formed in short cycle times with excellent texture retention and uniform wall thicknesses. Detailed thermoforming instructions are available in our SIMORAIL Thermoforming Guide. Conventional tools work well for sawing, drilling, routing and machining the material. It can also be heat welded, adhesive bonded and mechanically fastened.





## EXPERT ADVICE

We offer hands-on support around the globe. Our team of technical experts will be by your side every step of the way from initial project planning to final execution. They can help you develop, design, and produce custom solutions made of SIMORAIL sheets that will set your business apart.

Not sure how to thermoform SIMORAIL products?  
Contact our Technical Service Center for help:  
+49 (0) 6752 14-587  
[tsc@simona-group.com](mailto:tsc@simona-group.com)





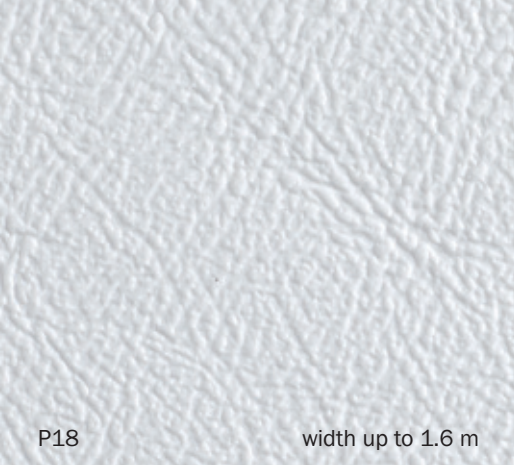
## MAKE AN IMPRESSION

Reimagine designs and add style and dimension to traditional rail car and seat parts. SIMORAIL sheets empower you to radically improve the appearance of your thermoformed components – from armrests to sidewalls and dividers. Developed to turn visions into reality, SIMORAIL materials bring your brand ideas to life without compromising on safety or performance.

## THE THRILL OF COLOR

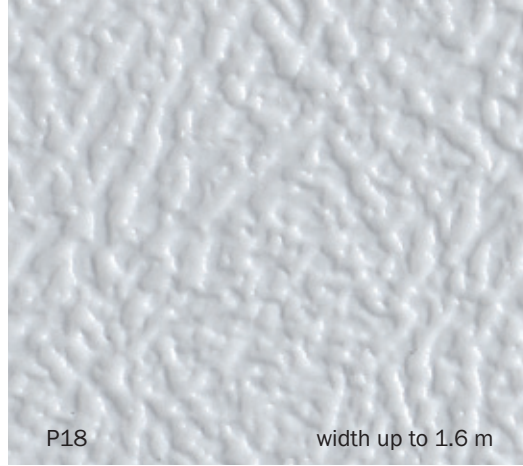
Even the slightest differences in hue can have a significant effect. From standard whites and grays to bold accent colors – our state-of-the-art color laboratory will help you customize your SIMORAIL sheets to match your individual color palette. Unlike metal, which needs to be painted, SIMORAIL plastics have integral color throughout. The color will never chip or fade, reducing the risk of maintenance and repair costs throughout the lifetime of the part.





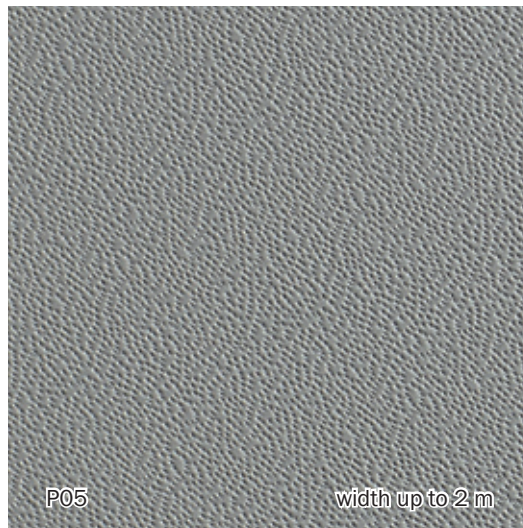
P18

width up to 1.6 m



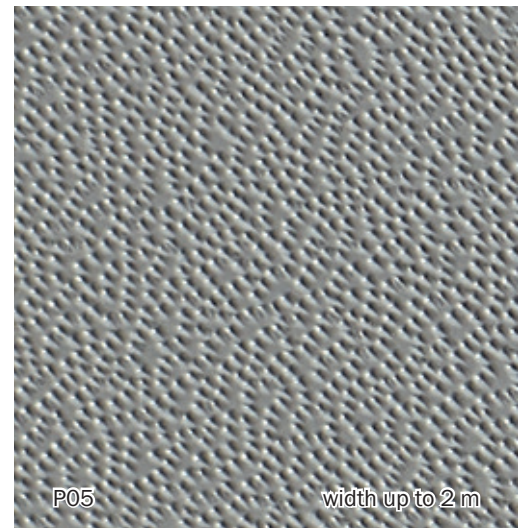
P18

width up to 1.6 m



P05

width up to 2 m



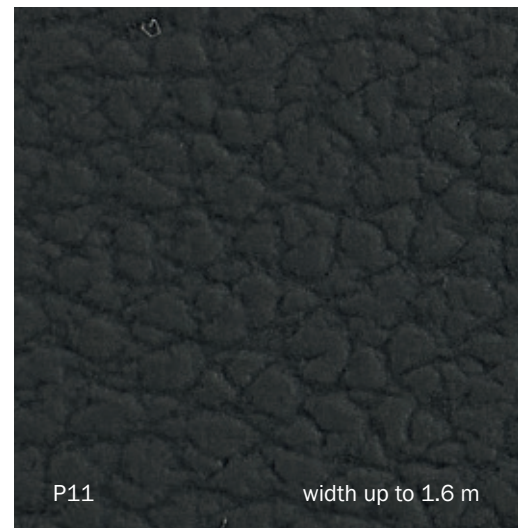
P05

width up to 2 m



P11

width up to 1.6 m

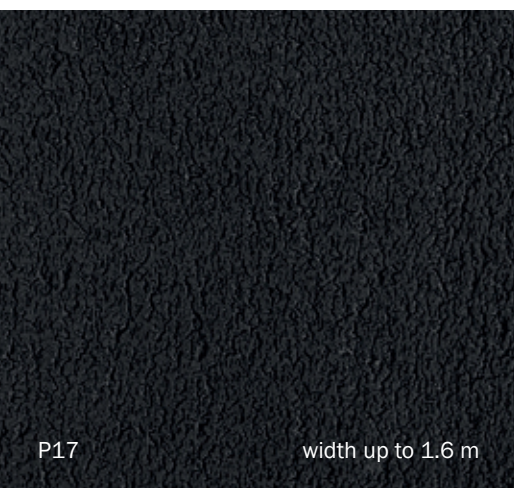


P11

width up to 1.6 m

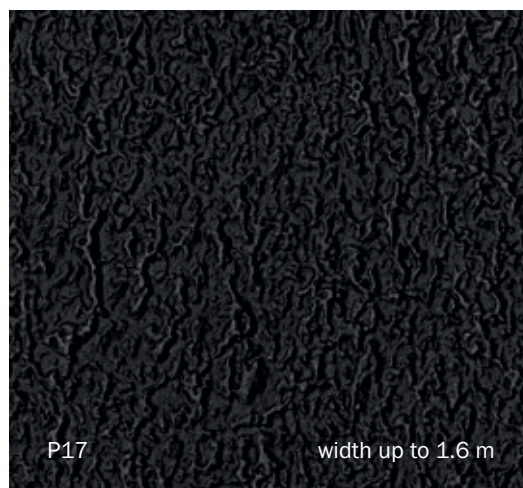
## THE REAL FEEL

In addition to custom colors, SIMORAIL sheets are available in custom sheets sizes and a selection of different textures that give the material a unique look and feel.



P17

width up to 1.6 m



P17

width up to 1.6 m

Left: original size

Right: close-up

## MAXIMUM VERSATILITY

In addition to meeting stringent specifications for smoke, flame spread, toxicity and heat release, SIMORAIL sheets offer good impact resistance and extreme thermoformability in a broad range of custom colors, textures and thicknesses. Compared to GRFP, SIMORAIL sheets can be manufactured to the most stringent tolerances and feature highly consistent mechanical properties. These characteristics translate into maximum versatility with regard to the area of application and part type. Whether tray tables, ceiling elements, sleeper components or unique parts customized to your specifications – we have the right material solution for you.

- 1** Wall cladding and ceiling elements
- 2** Window panels
- 3** Overhead luggage racks
- 4** Luggage stacks
- 5** Dividers
- 6** Tables
- 7** Seat backs and shells
- 8** Armrests
- 9** Tray tables





1

3

2

5

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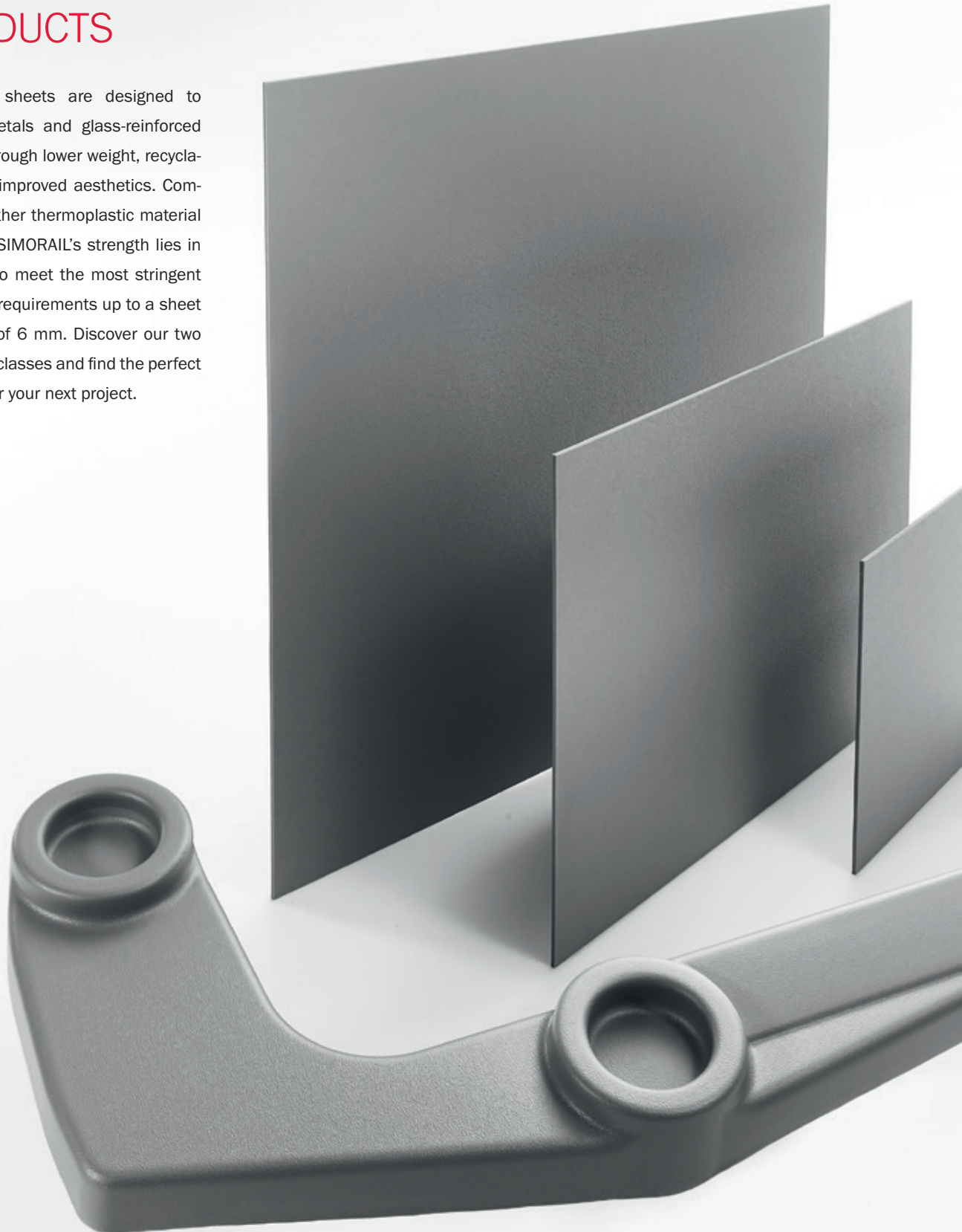
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## PRODUCTS

SIMORAIL sheets are designed to replace metals and glass-reinforced plastics through lower weight, recyclability, and improved aesthetics. Compared to other thermoplastic material solutions, SIMORAIL's strength lies in its ability to meet the most stringent regulatory requirements up to a sheet thickness of 6 mm. Discover our two SIMORAIL classes and find the perfect material for your next project.



## SIMORAIL HL2

Our SIMONA HL2 grades meets the requirements of HL2 for R1, which covers approximately 80% of the interior components used in the European rail transport sector. Additionally, the materials also comply with various North American FST standards. They offer a broad range of aesthetic options and can be used for a variety of interior components such as armrests, tables and tray tables, seat backs, window panels or partitions.

### SIMORAIL HL2

Thicknesses	1 – 5 mm
Dimensions	Customized lengths; width up to 2,000 mm
Regulatory compliance	EN 45545 (HL2, R1) NFPA 130 SMP 800C Boeing BSS 7239

## SIMORAIL HL3

SIMORAIL HL3 grades, our premium products, meet the most demanding regulatory requirements and can be used for almost all interior applications, including sleeper components. They are especially lightweight and more durable than comparable materials as a result of their improved impact resistance. Thanks to their ability to withstand dynamic stresses, the sheets are ideally suited for high traffic areas and environments subject to vandalism. In addition, SIMORAIL HL3 grades are available in an exceptionally wide range of thicknesses.

### SIMORAIL HL3

Thicknesses	1 – 6 mm
Dimensions	Customized lengths; width up to 2,000 mm
Regulatory compliance	EN 45545 (HL3, R1) NFPA 130 SMP 800C Boeing BSS 7239



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