



transport flooring

Rail

marmoleum[®] FR
tessera[®] FR
flotex[®] FR
coral[®] FR
step

creating better environments



Forbo

FLOORING SYSTEMS

Creating better rail environments across the world

For Forbo Flooring, creating better environments means a better working, living or travel environment. To achieve this Forbo has developed an unrivalled and versatile floor covering collection that truly adds to the quality of people's lives wherever they are.

Creating better environments also means caring for the environment and its people. For more than 100 years, inspired by the world around us, Forbo Flooring has been producing floor coverings. By using state of the art production processes we minimize the impact on our environment. All our manufacturing operations are ISO 14001 certified, raw materials are used efficiently and waste is minimised and recycled wherever possible. Ongoing research and development continue alongside an active environmental policy.

Environmental quality standards

In a number of countries, companies can apply for environmental certification of their products. These environmental quality marks are awarded for products that meet the stringent criteria certification is based on. It is our policy to ensure that our products comply with these eco labels

For linoleum we have obtained all relevant product labels. For more information, please visit www.forbo-flooring.com/transport



Forbo Flooring, your partner of choice in rail

Forbo Flooring Systems, addresses all of the issues specifiers need to consider when looking at the floor covering needs for train carriage interiors.

Rail vehicle flooring

Vehicle interiors, including the flooring, play a key role in achieving customer satisfaction. When designing a comfortable and aesthetically pleasing vehicle interior, the rail industry must also consider the array of health and safety legislation. Forbo Flooring Systems offers linoleum, flocked and textile floor coverings that meet all these regulations. Forbo also provides all the expert advice you may need when selecting floor coverings for your train, metro or tram.

Entrance systems

Given that most train interiors have to withstand heavy foot traffic, a durable flooring solution is a must. By investing in high-quality flooring – including effective entrance systems – and ensuring regular cleaning, operators can prolong the life of the train carriage floor and keep it looking good. Coral textile entrance systems offer the ideal solution for train vestibules, as they meet all the necessary legislation while providing a stylish and effective barrier system.

Durable

The combination of precisely-developed materials and unique construction methods makes our products exceptionally durable, ensuring high appearance retention and low wear characteristics.



Solutions for rail environments

Forbo offers a variety of floor covering solutions for the rail industry. Forbo also manufactures its own adhesives, welding rods (including the unique glow weld) and other installation materials.

Forbo's products are fully certified and combine durability, excellent fire resistant properties and a wide variety of designs and colours. Linoleum is manufactured from natural raw materials, making it a robust environmental flooring solution for the industry.

You can choose from a rich diversity of designs, ranging from natural designs to the sparkingly innovative. Our products are both stylish and extremely hard-wearing. We guarantee a combination of the best products in the market provided from one specialized supplier.

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Forbo Flooring, experience in railway



Buffet

Forbo Flooring Systems designs and manufactures a wide variety of commercial floor coverings for use in special areas like buffet cars.

marmoleum® FR

flotex® FR

step



Saloon

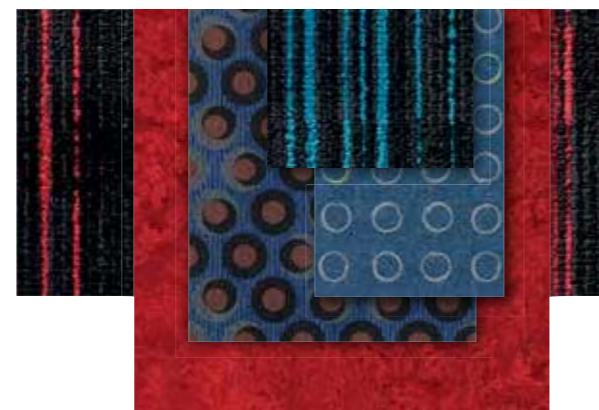
Especially for a luxurious feel in saloon areas, Forbo Flooring offers you a portfolio of fire retardant flooring products.

marmoleum® FR

flotex® FR

tessera® FR

step



Vestibule

Entrance flooring systems are fundamental to modern interior design - minimising maintenance costs and maintaining the appearance throughout the lifetime.

marmoleum® FR

coral® FR

step



Our experience, your project

Vehicle interiors play a key role in achieving customer satisfaction. Designing a comfortable and aesthetically pleasing interior is not easy when also needing to meet an array of health and safety legislations.

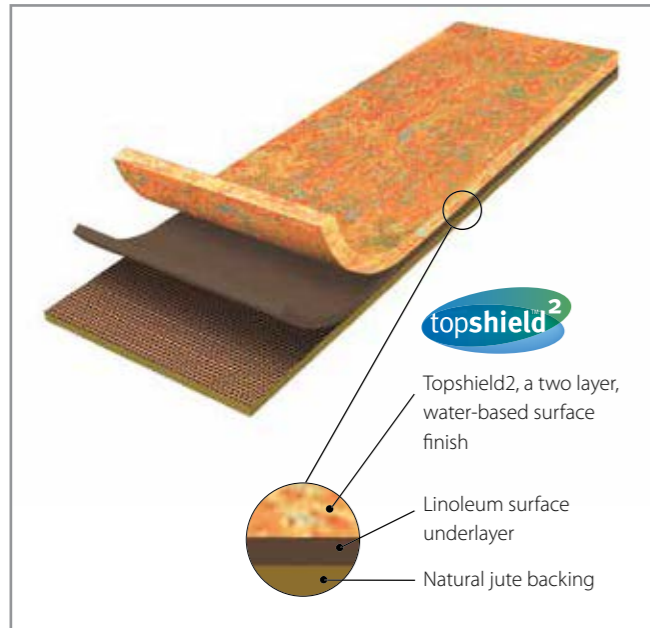
Forbo has proven results in partnering and supply chain alliances as a total solutions supplier. Being able to supply you with adhesives, high quality flooring and floor care advice, ensures continuity throughout the installation and means you can be assured of the accountability from a single supplier.

More than a supplier

Forbo can offer you the best flooring solutions in the world.

- High quality flooring products and adhesives
- Skirtings, profiles and accessories
- Installation training and floor care advice

Product overview

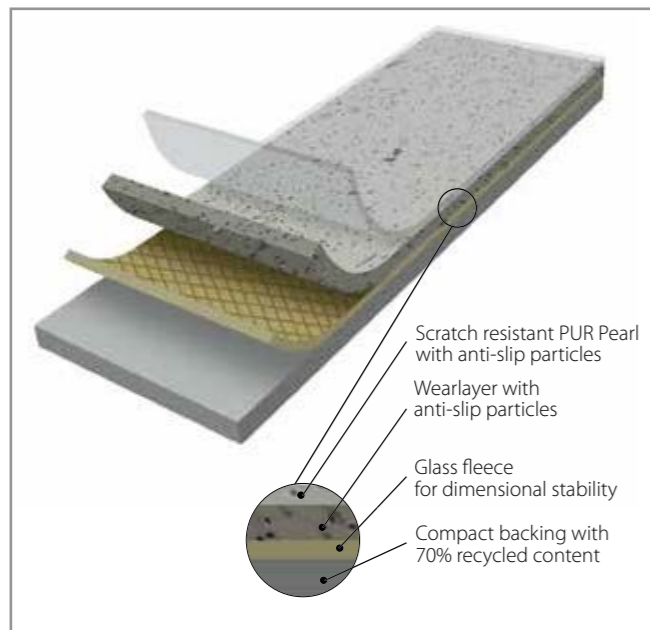


marmoleum[®] FR

Marmoleum FR is a sustainable floor covering with a long term durability. The unique and repairable Topshield2 finish greatly enhances the cleaning and maintenance performance of your floor resulting in an extended lifetime.

Benefits

- Sustainable: 97% Natural / 72% Renewable / 43% recycled
- Homogeneous durable construction
- Naturally bacteriostatic
- Easy to clean and maintain with the proven waterbased Topshield2 finish
- Renovatable and repairable ensuring low life cycle costs
- Resistant to cigarette burns

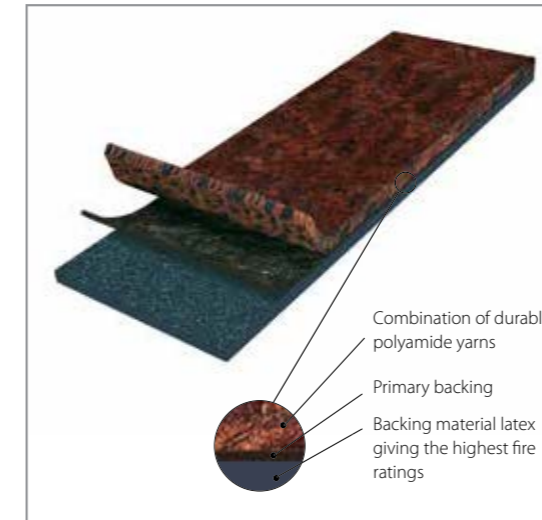


step

A durable floor covering combining outstanding slip resistance with a wide range of designs and colourways. The PUR Pearl surface provides superior, long-lasting appearance and performance.

Benefits

- Guaranteed R10 slip enhanced resistant performance, for the life of the product warranty
- PUR pearl lacquered surface providing easy cleaning and maintenance
- Matt design for natural appearance
- Coloured durable wear layer for long lasting appearance
- High recycled PVC content
- Wide range of colours for creative solutions

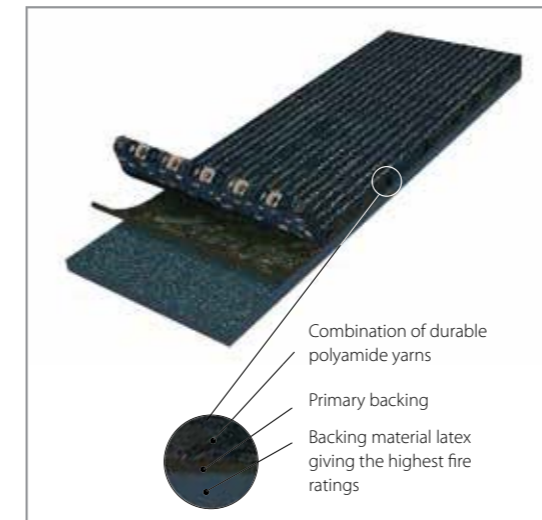


coral[®] FR

Coral FR is the market leader in entrance systems providing an exceptionally versatile and proven range of 'clean-off' entrance system products and customizable saloon carpets.

Benefits

- High moisture absorption
- Dirt scraping for effective clean off
- High dirt storage
- Advanced colouring & choice
- Excellent at soil hiding
- Reaches highest fire ratings

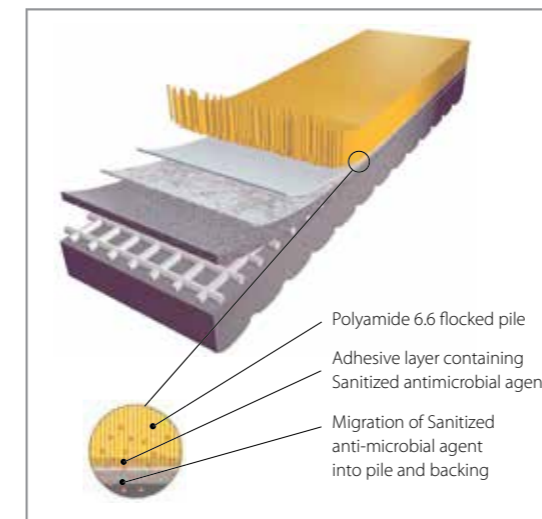


tessera[®] FR

Tessera FR offers an attractive and hardwearing tufted carpet range in various pile constructions and textures, designed to deliver specific aesthetic and performance benefits.

Benefits

- Made from 100% nylon, thus offering product performance and durability
- Utilising the latest infinity tufting technology, allowing infinite flexibility for bespoke designs
- Slip resistant



flotex[®] FR

Flotex FR is unique, combining the cleaning properties and durability of a resilient flooring with the comfort, slip resistant and acoustic properties usually associated with textiles.

Benefits

- Nylon 6.6 ensures high durability
- Hygienic
- Easy to clean; easy soil removal due to short nylon fibres
- Bacteriostatic
- Improved indoor air quality (independently proven by Allergy UK)
- Slip resistant

marmoleum[®] FR



Marmoleum real FR and Marmoleum striato FR both combine environmental qualities and long term durability. With the Topshield2 finish the ease of cleaning and maintenance of your floor is greatly enhanced. Marmoleum real FR and Marmoleum striato FR are made from natural and renewable raw materials and withstand heavy loads and indoor wheeled traffic and are resistant to cigarette burns.

marmoleum[®] real FR

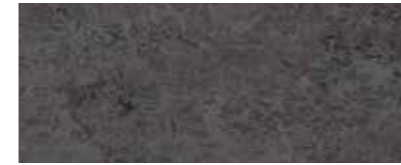
Each shade in Marmoleum real FR is built up from two to five colours that are processed together to create a marbled structure. The colours ensure a wide colour palette, from classic and bold brights to warm neutrals.

marmoleum[®] striato FR

Striato's retro-yet-modern design adds an extra dimension. Available in several nature-derived and bright colours, Striato's warm, friendly feel makes it easy to combine with other colours in the Marmoleum range – and with other material types entirely.



marmoleum[®] real FR



3139 | lava



3236 | dark bistre*



3048 | graphite*



3127 | bleeckerstreet



3030 | blue



3123 | arabesque*



3225 | dandelion



3224 | chartreuse



3255 | pine forest



3146 | serene grey*



3173 | Van Gogh*



3246 | shrike*

marmoleum[®] striato FR



3576 | sliding glacier



3573 | trace of nature*



3577 | petrified wood



5228 | hidden colours



5217 | withered prairie*



5218 | welsh moor*



5213 | waving wheat



5223 | grand canyon



5221 | colour stream



5216 | pacific beaches



5227 | water colour



5226 | grey granite*

Shown above is only a selection of designs and colourways available.

Colour palette Marmoleum FR: 59 colours real / 18 colours striato.

Items marked with * denote stocked references. All other Marmoleum FR material is made to order.

flotex® FR



A truly unique textile floor covering that looks and feels like a carpet but with straight fibres, making it exceptionally easy to clean. Flotex FR has a smooth, velour like surface that is comfortable to walk on, with excellent slip resistant properties.

flotex® FR

Flotex FR consists of a unique High Definition digital print collection that creates superior texture with almost 3D-like appearance. Flotex FR, through its technology, allows for large endless pattern repeats and vivid life like colours creating a new dimension for Flotex and providing ultimate design flexibility for rail environments.

Flotex offers consistent protection against a wide variety of bacteria thanks to Sanitized; a highly effective integral antimicrobial treatment that results in a healthier environment. Thanks to its unique construction, which helps to reduce the amount of allergens in the atmosphere, Flotex has been awarded the prestigious Allergy UK Seal of Approval.

Total Design Freedom

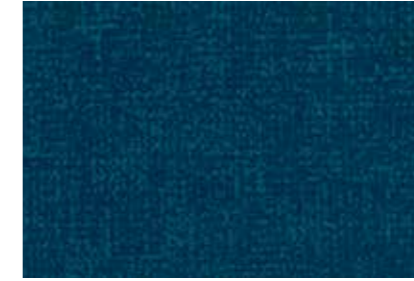
The digitally printed Flotex FR offers you complete freedom for customising the interior space of any rail vehicle.



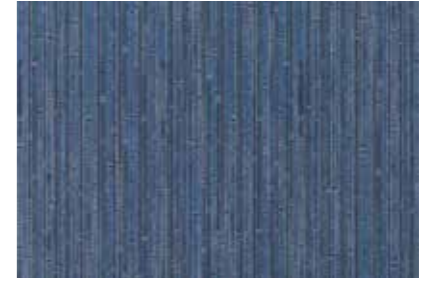
flotex® FR



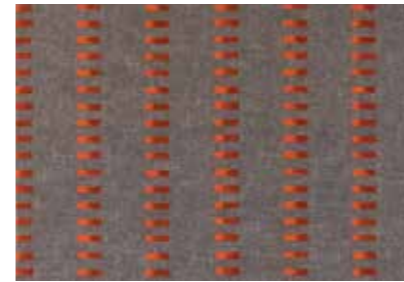
290014 | calgary lime



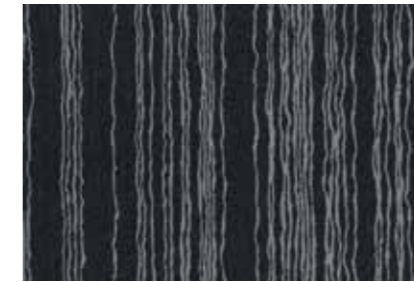
246023 | metro horizon



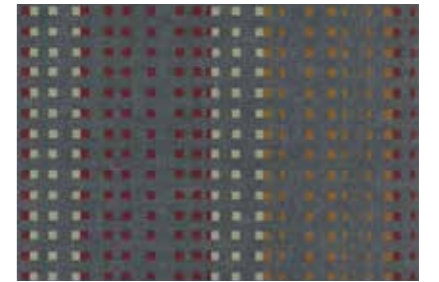
245112 | manila condor



510007 | pulse granite



520011 | cord jet



580019 | trace slate



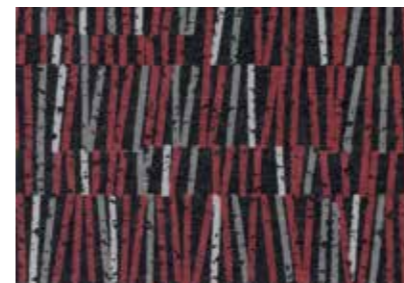
550007 | circuit slate



530016 | spin denim



500017 | field grape



540013 | vector quartz



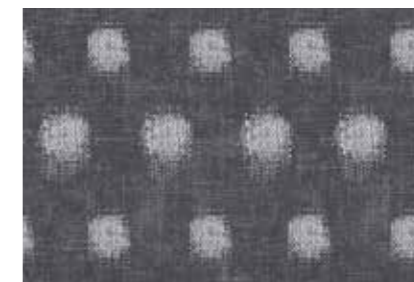
570005 | grid rust



560008 | network steam



990610 | sottsass wool



990802 | sottsass kasuri



010036 | naturals American oak

Shown above is only a selection of designs and colourways available. All Flotex FR material is made to order.

tessera[®] FR

Tessera FR is a high quality tufted carpet offering endless possibilities in design and structure, enhancing the environment of today's rail vehicle interiors.

Customize Tessera FR

Tessera designs and colours can be easily adapted to meet your specific interior design scheme.

tessera[®] helix FR

Tessera helix FR has an understated linear design which combines rich texture and visual appeal.



tessera[®] alignment FR

Tessera alignment FR is offered in colours with strong urban influences and has a distinct cosmopolitan feel. Each colour translation features yarns carefully drawn from a discrete tonal range delivering an understated yet elegant appearance.



tessera[®] helix FR



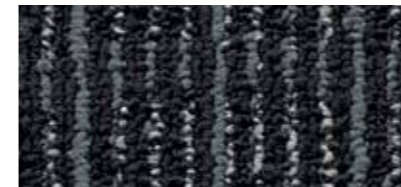
803 | clay



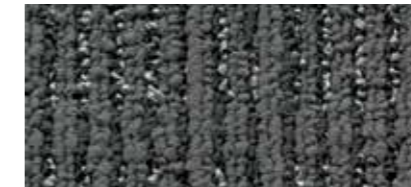
806 | mortar



809 | copper



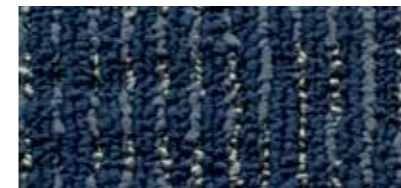
810 | carbon



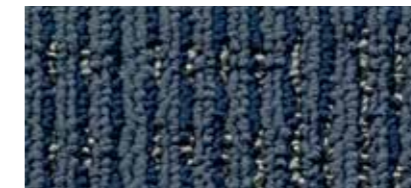
802 | oxide



801 | glass



811 | cobalt

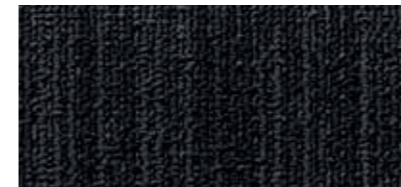


812 | marble



813 | zircon

tessera[®] alignment FR



208 | nucleus



233 | catalyst



203 | cyclone



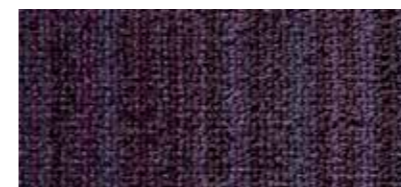
201 | ion



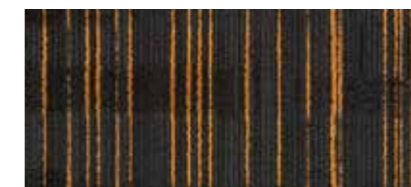
234 | sphere



214 | nocturn



202 | elixir



236 | sirius



204 | horizon



235 | polaris



231 | blaze



232 | orb

Shown above is only a selection of designs and colourways available.
All Tessera FR material is made to order.
Colour palette Tessera FR: 13 colours Tessera helix FR / 18 colours Tessera alignment FR.

coral[®] FR

Lower your cleaning costs and prevent your interior floor coverings from being damaged by using a Coral entrance system. With an exceptionally versatile range of products to choose from, Coral performs as the ideal moisture and dirt barrier. There will always be a Coral product to meet your needs.

coral[®] brush pure FR coral[®] brush blend FR

Coral brush pure/blend FR can be used in all types of entrance areas and is the ideal solution when you need a textile entrance system that can simultaneously absorb moisture and remove dry soiling.

coral[®] classic FR

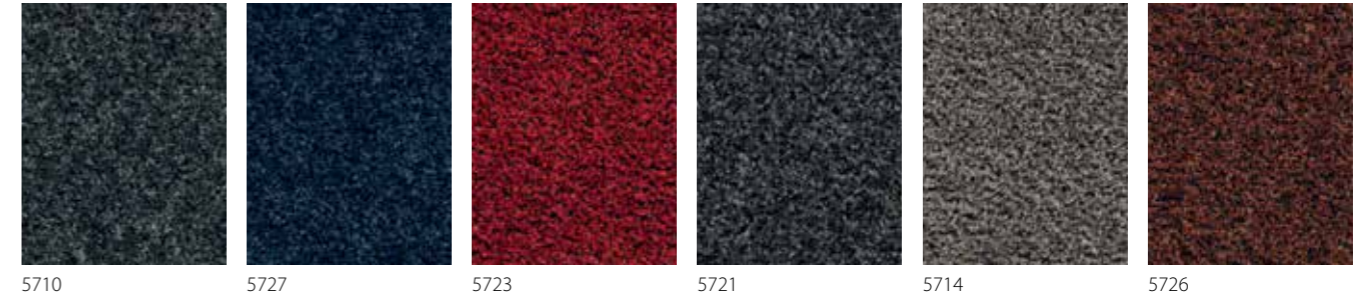
Coral classic FR has the capacity to absorb moisture like no other textile entrance system. Alongside its excellent moisture absorbing properties, Coral classic FR also has special scraping monofilament yarns which actively scrape dirt off the sole of shoes.

coral[®] duo FR

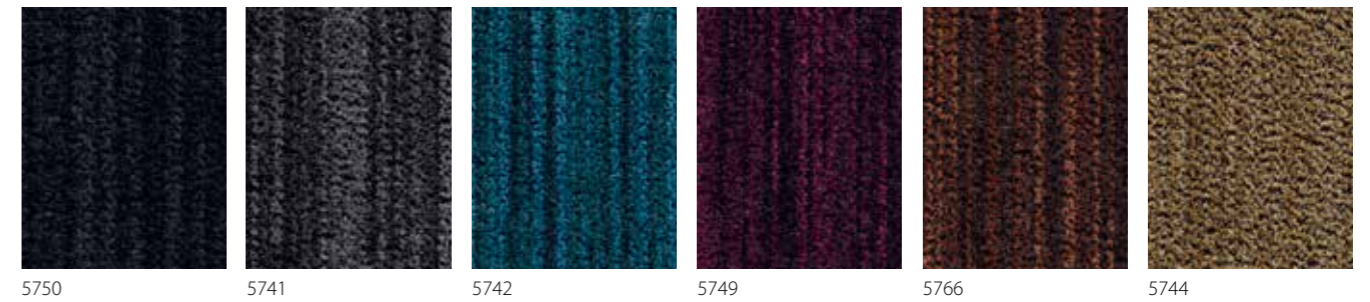
Coral duo FR combines Coral brush FR and Coral classic FR reinforced with tough and resilient fibres, enhanced with alternating strips of strong thick yarn with dirt scraping action.



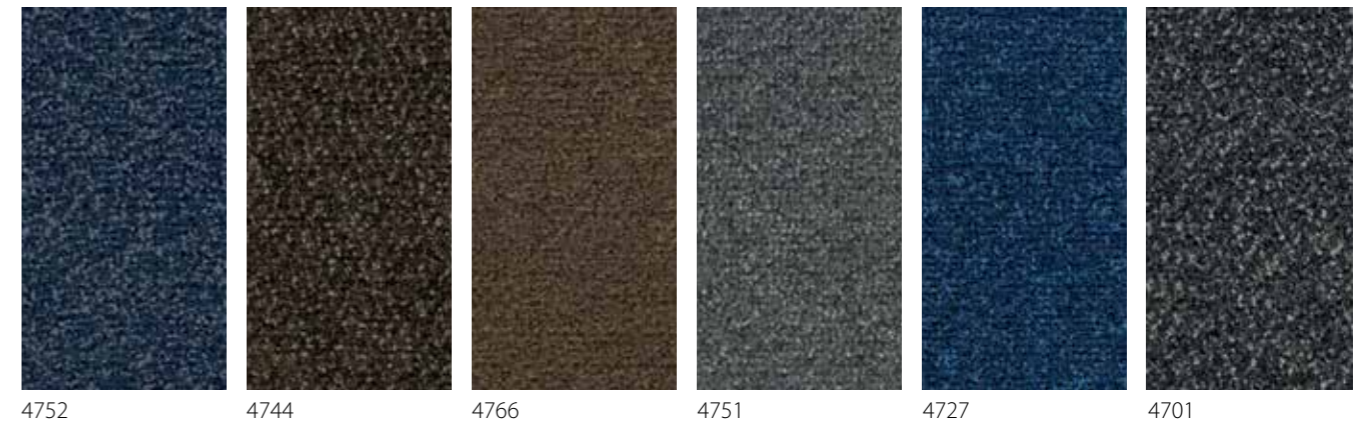
coral[®] brush pure FR



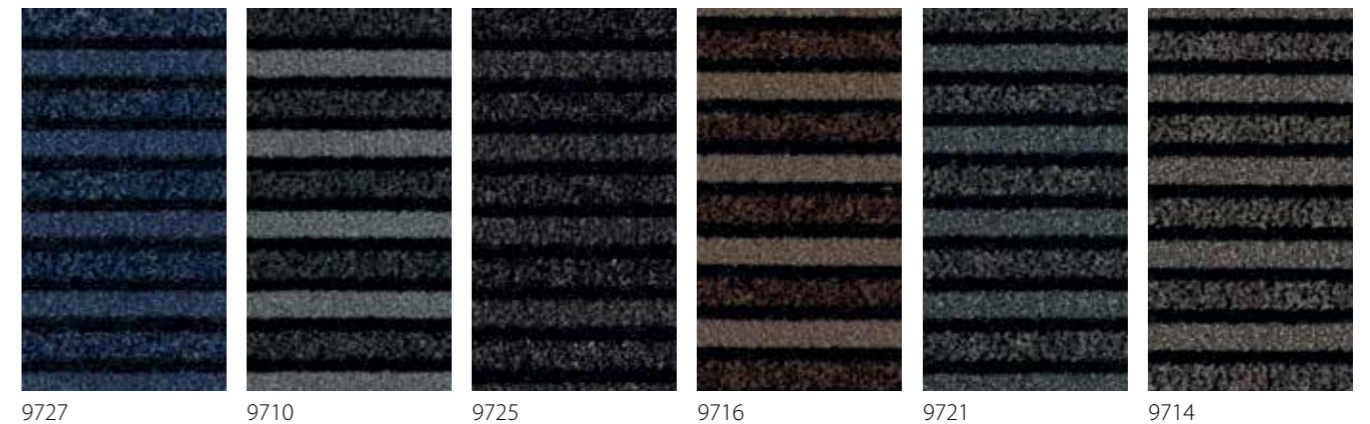
coral[®] brush blend FR



coral[®] classic FR



coral[®] duo FR



Colour palette Coral FR: 21 colours Coral brush pure/blend FR/12 colours Coral classic FR/8 colours Coral duo FR. All Coral FR material is made to order.

step

A durable safety vinyl flooring with guaranteed slip resistant performance for the lifetime of the product warranty. The PUR pearl surface provides superior, long lasting appearance and performance, whilst the 'Step crystals' offer a clear design visual and reduced soiling due to their small particle size.

surestep®

The fresher looking alternative to the conventional safety flooring visual, available in a wide palette of designs and colourways with 68 references in total, including wood, stone, mineral and textured designs.

With its slip resistance properties, surestep is suitable for applications where travellers are standing up or moving in the rail vehicle. Especially ideal for use in trams and other inner city or commuter rail vehicles. Additional R11 safestep products are also available.

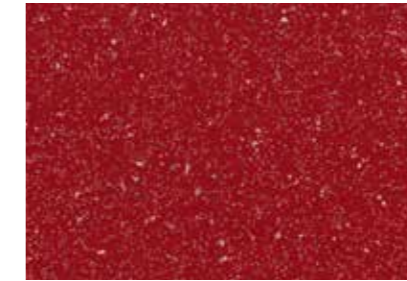
Please note that Step products can only be used in applications under DIN 5510-2:2009.



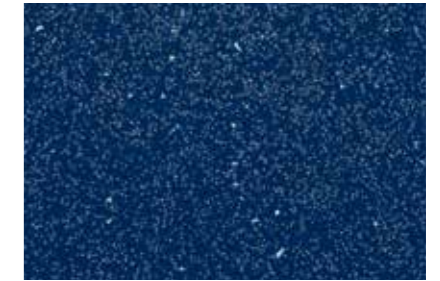
surestep®



171532 | sun



171562 | pepper



171782 | night



176262 | umber



176282 | dragon



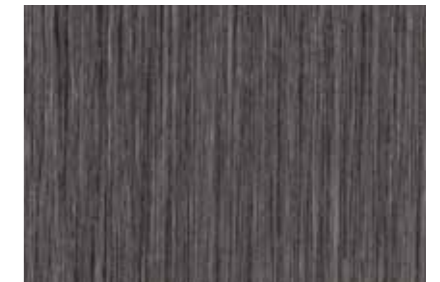
176982 | carbon



18242 | sunny beech



18802 | elegant oak



18572 | black seagrass



89952 | grape



89012 | leather



89092 | indigo



89982 | shadow



17132 | blue concrete



17172 | black concrete

Colour palette Surestep: 68 colours.
Shown above is only a selection of designs and colourways available.

Service products



Uni welding rod



Multicolour welding rod



Welding rods

Welding rods ensure high levels of hygiene because they make seams easy to clean while preventing water from penetrating the floor covering. Forbo offers welding rods in matching colours with each item. Gloweld is a unique welding rod for the application with linoleum. Gloweld glows in the dark and can therefore be used for signaling and or safety purposes.

Adhesives

Forbo offers a variety of suitable adhesives for flooring installation. Eurocol 640 is a very low VOC-emission adhesive with a high initial grab for vinyl, polyolefin and rubber floor covering and the eurocol 650 is a low VOC-emission, solvent-free and powerful dispersion-based contact adhesive with a strong adhesion. For linoleum, Eurocol 614 and 615 are most suitable.

Installation tools and training

Based on our experience and our continuous research we can recommend and supply a complete assortment of high-grade installation tools. These will help you to achieve a simple and professional installation of our floor coverings. Forbo can provide you with an off- or onsite installation training.



Aquajet

We recognize that sometimes a client wishes to create something totally unique, perhaps something specific to a particular project, such as signage to facilitate the restrictions and safety guidelines within the train. Whatever may be required, our in-house design team has skills and experience to turn ideas into reality. From an initial concept, detailed drawing, or computer file, our design team prepares a flooring design that is transferred electronically to our Aquajet cutting machines. These computer-controlled machines represent state-of-the-art cutting technology and produce precision cut items accurate to a fraction of a millimeter. The pattern is inlaid and, importantly, retains all the performance characteristics of the original product. Whether it is a complete rail layout in floor covering, a company logo, signage or thematic design, the possibilities are limitless.



For more information about Service Products contact your sales office or visit the website www.forbo-flooring.com

Solutions

Forbo offers a truly comprehensive and compliant flooring product portfolio for the rail sector. Within the portfolio are the entrance systems, vinyl floors, linoleum floors, textile carpets, flocked flooring as well as all adhesives, accessories and installation tools. You'll see, we also offer the widest range of design and colourway options available on the market giving you a world of choice. Forbo have years of experience with regards to material scheduling and specific logistical requirements, both for the new build and refurbishment of rail vehicles. We will work closely with you to understand your exact requirements, in order to achieve the optimum service level.

If you prefer something totally unique, your Forbo Account Manager will work directly with our experienced and talented in-house design team to deliver bespoke floor covering designs to give your rail vehicle interior a truly individual look.

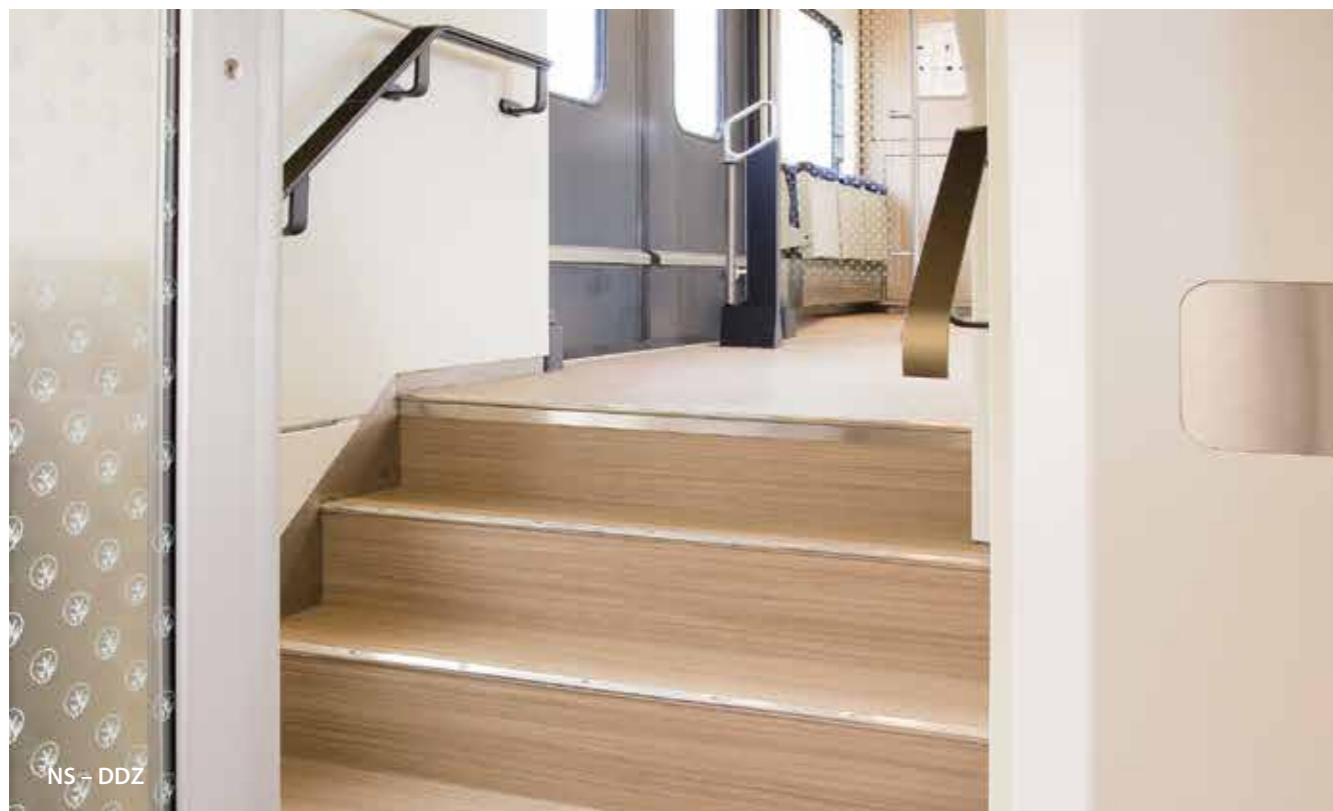
Working with Forbo means:

- A sole source of supply for all your flooring requirements
- The largest and most versatile choice of floor coverings
- A bespoke design service
- Global advice, support and cross border project management

We deliver exceptional total flooring solutions for the rail sector.



References



References



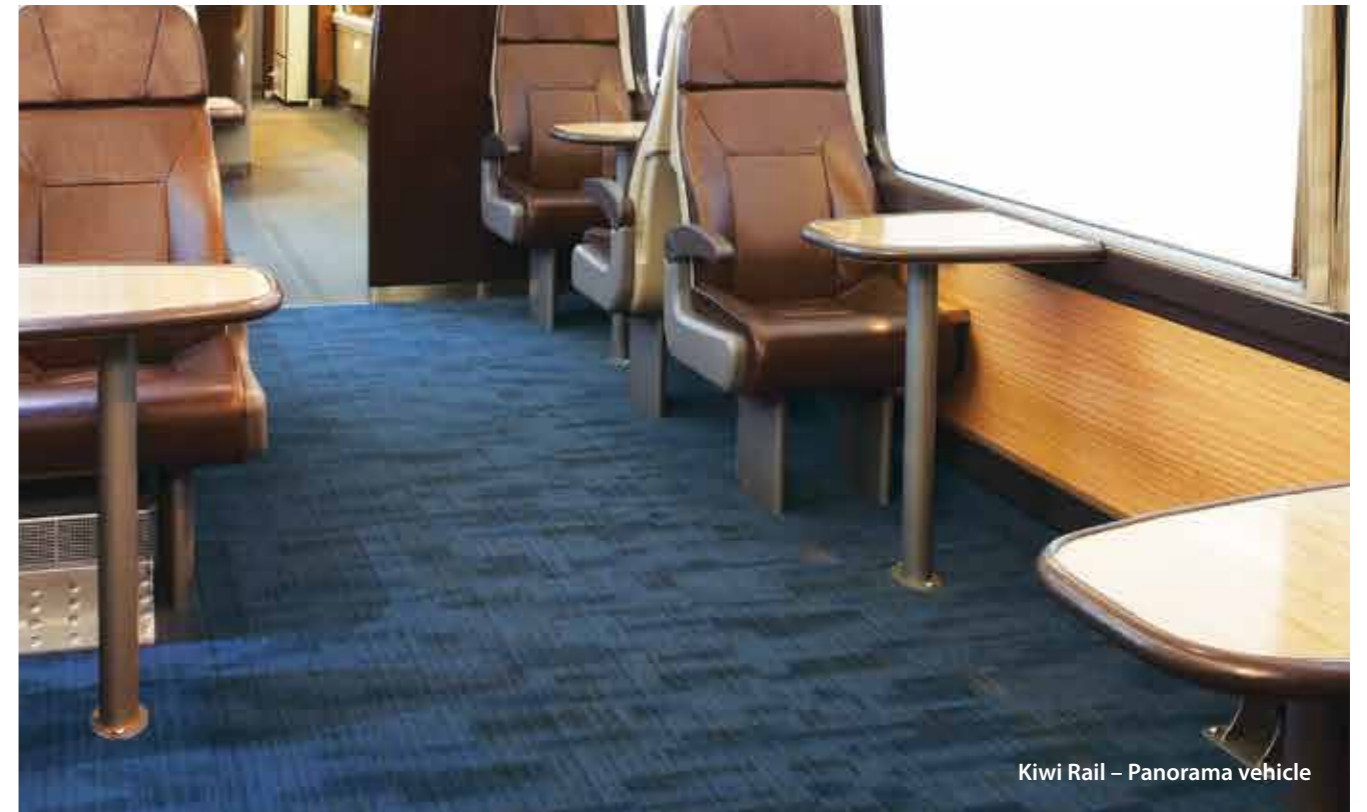
East Midland Trains – Standard Class



East Midland Trains – First Class



East Midland Trains – First Class



Kiwi Rail – Panorama vehicle

References



What to do now?

For more information about any of the products and services offered by Forbo Flooring Systems or to request samples/brochures or a visit then please contact one of our dedicated Transport Sales Managers.


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email: stephan.plomp@forbo.com
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For further information you can also visit www.forbo-flooring.com/transport

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 [@forbotransport](https://twitter.com/forbotransport)

Technical specifications

			Marmoleum real FR	Marmoleum striato FR	Flotex FR Flotex HD FR	Tessera helix FR	Tessera alignment FR	Coral brush pure/blend FR	Coral classic FR	Coral duo FR	Surestep
 Total thickness	EN 428	ISO 1765	2.5 mm	2.5 mm	Approx. 3.3 mm	Approx. 6 mm	Approx. 6 mm	Approx. 9 mm	Approx. 8.5 mm	Approx. 9 mm	2.0 mm
 Roll width	EN 426		200 cm	200 cm	200 cm	185 cm (customizable)	185 cm (customizable)	185 cm (customizable)	185 cm (customizable)	185 cm (customizable)	2.0 m
 Roll length	EN 426		≤ 32 m	≤ 32 m	30 m	27.5 m (customizable)	27.5 m (customizable)	27.5 m (customizable)	27.5 m (customizable)	27.5 m (customizable)	20 - 27 m
 Total weight	EN 430	ISO 8543	Approx. 2900 gram/m ²	Approx. 2900 gram/m ²	Approx. 1225 gram/m ²	Approx. 3000 gram/m ²	Approx. 3000 gram/m ²	Approx. 3400 gram/m ²	Approx. 3400 gram/m ²	Approx. 3000 gram/m ²	Approx. 2900 gram/m ²
Pile installation weight		ISO 8543			Approx. 250 gram/m ²	Approx. 740 gram/m ²	Approx. 730 gram/m ²	Approx. 920 gram/m ²	Approx. 900 gram/m ²	Approx. 670 gram/m ²	
Pile thickness		ISO 1766			Approx. 2 mm	Approx. 4 mm	Approx. 4 mm	Approx. 6.5 mm	Approx. 6 mm	Approx. 6 mm	
Pile material					100% polyamide	100% polyamide-BCF	100% polyamide-BCF	100% regenerated Econyl polyamide	100% polyamide-BCF solution dyed	100% polyamide of which 66% is regenerated Econyl polyamide	
 Dimensional stability	EN 434	ISO 23999			≤ 0.20%						< 0.1%
 Indentation residual	EN 433	ISO 24343-1	≤ 0.15 mm	≤ 0.15 mm							≤ 0.05 mm
 Light fastness		EN ISO 105/B02	≥ 6	≥ 6	6	7-8	7-8	>5	7-8	>5	≥ 6
 Flexibility	EN 435	ISO 24344	Ø 40 mm	Ø 40 mm							Ø 10 mm
 Resistance to chemicals	EN 423	ISO 26787	Resistant to diluted acids, oils, fats and to the conventional solvents. Not resistant to prolonged exposure to alkalis.	Resistant to diluted acids, oils, fats and to the conventional solvents. Not resistant to prolonged exposure to alkalis.							
 Electrical resistance	EN 1081	ISO 10965	1-10 ⁶ <R1<1-10 ⁹ Ω	1-10 ⁶ <R1<1-10 ⁹ Ω	Approx. 10 ¹⁰ Ω	hor. 8x10 ⁹ Ω, vert. 4x10 ⁹ Ω	hor. 3x10 ¹⁰ Ω, vert. 9x10 ⁹ Ω	hor. 1.8x10 ¹⁰ Ω, vert. 6.1x10 ⁹ Ω	Approx. 10 ¹⁰ Ω	hor. 4.2x10 ⁹ Ω, vert. 3.0x10 ⁹ Ω	> 1-10 ⁹ Ω
 Contact sound insulation		ISO 717-2 ISO 140-8	Δ Lw = approx. 5 dB	Δ Lw = approx. 5 dB	Δ Lw = approx. 22 dB			Δ Lw = approx. 32.4 dB	Δ Lw = approx. 31 dB		-
 Tested flammability standards	EN 45545-2		HL2	HL3	HL2	HL2	HL2	HL2	HL2		-
	BS6853		1a		1b	1b		1b	1b		-
	DIN 5510-2		SF 1-3	SF 1-3	SF 1-3	SF 1-3	SF 1-3		SF 1-3	SF 1-3	SF 1-3
	ASTM E.648-08 ASTM E.662-06		Class 1 pass		Class 1 pass	Class 1 pass	Class 1 pass		Class 1 pass	Class 1 pass	-
	NF P 92-501 NF F 16-101							M3 F1	M2 F1	M3 F1	-
 Slip resistance	EN 13893 DIN 51130		≥ 0.30, R9	≥ 0.30, R9	> 0.30						≥ 0.30, R10
 Personal charging		ISO 6356	< 2 kV	< 2 kV	< 2 k/W	< 2.5 kV	< 2.5 kV	< 2 kV	< 2 kV	< 2 kV	< 2 k/W
 Heat transmission resistance	EN 12524		0.17 m ² K/W	0.17 m ² K/W				0.093 m ² K/W	0.13 m ² K/W	0.140 m ² K/W	0.25 W/m ² K

For more detailed information please contact one of our Forbo Flooring Systems Transport Specialists as listed on page 17.

Forbo Flooring Systems is part of the Forbo Group, a global leader in flooring and movement systems, and offers a full range of flooring products for commercial and affordable housing and new build markets. High quality linoleum, vinyl, textile, flocked and entrance flooring products combine functionality, colour and design, offering total flooring solutions for any environment.



All countries

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FLOORING SYSTEMS