## RAIL FLOOR & WALL COVERINGS SEPTEMBER 2020



creating better environments

# MANY SOLUTIONS. ONE SUPPLIER.

The **PRODUCT SELECTOR** tool overleaf, is to help



# THIS IS WORLD

Forbo has developed a truly comprehensive and compliant floor and wall covering product offering for the global rail sector. Whether you are sourcing floor coverings for high speed, intercity, regional or light rail carriages, or for trams or metro vehicles, we can provide you with an exceptional range of products and services to meet the necessary requirements.

Within our floor coverings portfolio you will find high performance entrance systems, linoleum flooring, broadloom carpets, flocked floor coverings and the widest range of designs and colourways on the market, giving you a world of choice. We also supply adhesives, accessories and specialist installation tools.

At Forbo, we fully appreciate the logistical challenges for both new build and refurbishment projects. We will work closely with you in understanding your specific requirements, in order to deliver the optimum service levels and solutions.

If your looking for a totally unique floor or wall covering design solution, then our in-house design team will work closely with you every step of the way in meeting your design specifications. The entire RAIL portfolio can be fully customized.

#### Working with Forbo means:

• A sole source of supply for all your flooring requirements • The largest and most versatile choice of floor and wall coverings

• Optimal efficiences through tailored services and logistics Global advice, support and cross border project management

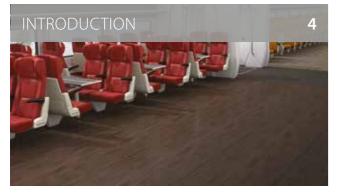
You can rely on Forbo to deliver an exceptional floor and wall covering solution for your rail project.

### FORBO RAIL **PRODUCT SELECTOR**

		Product Category	Product Line	Description	Application Area	Number of Standard	Bespoke Design /	Suitable f	or use on the	following ve	hicle types	Confo	rmity	Thickness	Weight	Acoustic	Wear Layer Resistance	Light Resistance		I	nstallation &	Service Prod	ucts	
		category			Aica	Designs	Custom Colouration	High Speed Train	Regional Train	Light Rail Vehicle	Metro	EN45545-2	ASTM E648-00 E662-01	ISO 1766	ISO 8543	ISO 717-2 ISO 140-8	G 35-024 Annexe D >4 apr. 1 M de cycl.	EN ISO 105/B02	Cold Welding PU Mastic	Hot Welding	Pro-Fit (Hook & Loop System)	Pre-Cut Kits	Cut Lengths	Full Technical Specification
	/stems		Classic FR	Textile EFS - the ultimate moisture absorber	Vestibule/ Entrance	13	1	•	•	0	-	HL2	1	8.5 mm	3.4 kg/m²	$\Delta$ Lw = 31 dB	>4	7-8	NA	NA	Yes	Yes	Yes	Page 68
	oring Sy	Coral <sup>®</sup> FR	Brush FR	Textile EFS - the great all rounder	Vestibule/ Entrance	18	1	•	•	0	0	HL3	1	9 mm	3.4 kg/m²	$\Delta$ Lw = 32 dB	>4	> 5	NA	NA	Yes	Yes	Yes	Page 68
	Entrance Flooring Systems	Cora	Duo FR	Textile EFS - the ultimate dirt & moisture remover	Vestibule/ Entrance	8	1	•	•	0	-	HL2	1	9 mm	3 kg/m²	$\Delta$ Lw = 29 dB	>4	> 5	NA	NA	Yes	Yes	Yes	Page 68
	Entra		Welcome FR	Textile EFS - with a strong linear effect	Vestibule/ Entrance	8	1	•	•	0	0	HL3	1	8 mm	2.2 kg/m²	$\Delta$ Lw = 27 dB	>4	> 5	NA	NA	Yes	Yes	Yes	Page 68
	S	~	Real FR <sup>2</sup>	Linoleum - classic marbled blend	Saloon floor covering	33	1	•	•	•	•	HL3	1	2.5 mm	2.9 kg/m <sup>2</sup>	ΔLw: <5 dB	4	≥ 6	Yes	Yes	No	Yes	Yes	Page 69
	ering	=R <sup>2</sup> ato Fl	Fresco FR <sup>2</sup>	Linoleum - subtly blended, tone on tone	Saloon floor covering	38	1	•	•	•	•	HL3	1	2.5 mm	2.9 kg/m <sup>2</sup>	ΔLw: <5 dB	4	≥ 6	Yes	Yes	No	Yes	Yes	Page 69
	oor coverings	Marmoleum <sup>®</sup> FR <sup>2</sup> Marmoleum <sup>®</sup> Striato FR	Vivace FR <sup>2</sup>	Linoleum - lively, high contrast aesthetic	Saloon floor covering	9	1	•	•	•	•	HL3	1	2.5 mm	2.9 kg/m²	ΔLw: <5 dB	4	≥ б	Yes	Yes	No	Yes	Yes	Page 69
SE	nt flo	rmolo oleun	Concrete FR <sup>2</sup>	Linoleum - solid marbled design	Saloon floor covering	33	1	•	•	•	•	HL3	1	2.5 mm	2.9 kg/m <sup>2</sup>	∆Lw: <5 dB	4	≥ 6	Yes	Yes	No	Yes	Yes	Page 69
ERING	silie	Ma Marmo	Walton FR <sup>2</sup>	Linoleum - plain visual with subtle texture	Saloon floor covering	11	1	•	•	•	•	HL3	1	2.5 mm	2.9 kg/m²	∆Lw: <5 dB	4	≥ 6	Yes	Yes	No	Yes	Yes	Page 69
FLOOR COVERINGS			Striato FR	Linoleum – with a subtle linear pattern	Saloon floor covering	20	1	•	•	•	•	HL3	1	2.5 mm	2.9 kg/m <sup>2</sup>	∆Lw: <5 dB	4	≥ 6	Yes	Yes	No	Yes	Yes	Page 69
FLOO		Move A FR	Coral Move FR	Broadloom carpet - bespoke tufting designs	Saloon floor covering	œ	1	•	•	0	0	HL3	1	8 mm	3 kg/m²	∆ Lw ≥ 28 dB	>4	≥ 6	NA	NA	Yes	Yes	Yes	Page 72
	gs	Coral® Move Vision FR	Coral Move Vision FR	Broadloom carpet - digitally printed	Saloon floor covering	œ	1	•	•	0	0	HL3	1	8 mm	3 kg/m²	∆ Lw ≥ 28 dB	>4	≥6	NA	NA	Yes	Yes	Yes	Page 72
	Textile floor coverings	FR	Alignment FR	Broadloom carpet - contemporary texturisation	Saloon floor covering	24	1	•	•	0	-	HL2	1	6 mm	2.5 kg/m²	$\Delta$ Lw = 25 dB	>4	≥6	NA	NA	Yes	Yes	Yes	Page 71
	floor c	Tessera® FR	Helix FR	Broadloom carpet - textured linear design	Saloon floor covering	13	1	•	•	0	-	HL2	1	6 mm	3 kg/m²	∆ Lw = 25 dB	>4	≥ 6	NA	NA	Yes	Yes	Yes	Page 71
	extile	ŢĘ	Nexus FR	Broadloom carpet - metalic web overlay design	Saloon floor covering	9	1	•	•	0	-	HL2	1	5.4mm	2.4 kg/m <sup>2</sup>	∆ Lw = 25 dB	>4	≥6	NA	NA	Yes	Yes	Yes	Page 71
	F	×® FR	Flotex Colour FR	Flocked - Rotary printed semi plain designs	Saloon floor covering	90	1	•	•	0	-	HL2	1	3.3mm	1.225 kg/m <sup>2</sup>	∆ Lw ≥ 22 dB	>4	≥ 6	NA	NA	No	Yes	Yes	Page 70
		Flotex <sup>®</sup> FR	Flotex Vision FR	Flocked - High definition digitally printed giving real design freedom	Saloon floor covering	∞	1	•	•	0	-	HL2	1	3.3mm	1.225 kg/m <sup>2</sup>	∆ Lw ≥ 22 dB	>4	≥ 6	NA	NA	No	Yes	Yes	Page 70
WALL & CEILING	COVERINGS	Fleet <sup>®</sup> FR	Fleet FR	Textile wall and ceiling covering	Vestibule/ Saloon/ Buffet cars and staircases	8	5	•	•	•	_	(R1) HL2	1	3 mm acc. To NF EN 29073-1	0,55 kg/m²	ΔLw = 17 dB	3	>6	NA	NA	No	Yes	Yes	Page 73
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O Certified but not recommended for use - Not certified

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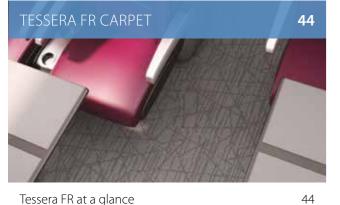
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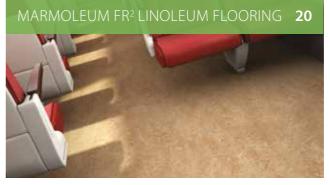
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# A SHOWCASE OF DESIGN AND COLOUR

are designed in-house and realised modern printing and manufacturing ulting in inspiring designs no matter ion of floor and wall coverings you colourations and bespoke designs oughout the portfolio.

that our products are produced to ical standards to ensure that your overings will offer outstanding roughout their lifetime.

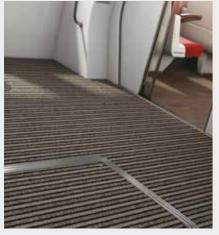


# RELIABLE LOGISTICS ACROSS THE WORLD

tting the right product to the ne right time. In our world, we as a trusted partner. Our global rk ensures that your products a ask for them, on time and to action.

#### ENTRANCE FLOORING SYSTEMS

#### **RESILIENT FLOORING**



#### coral<sup>®</sup> FR A collection of textile clean-off products for entrances with heavy traffic.



#### marmoleum<sup>®</sup> FR<sup>2</sup> marmoleum<sup>®</sup> striato FR A textile flocked floor covering Forbo's linoleum brand – natural,

sustainable, durable, high quality and innovative in colour and design.

WALL & CEILING

COVERING

#### FLOCKED FLOORING



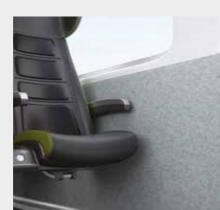
**flotex**<sup>®</sup> FR combining the cleaning properties and durability of a resilient flooring with the comfort, slip resistant and acoustic properties usually associated with textile flooring.

#### **BROADLOOM CARPET**



### coral<sup>®</sup> move FR

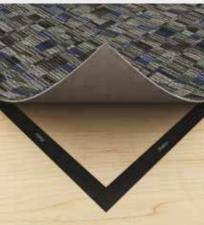
Coral Move FR is a bespoke made to order product and our design team will work to match design and colour requirements on an individual project by project basis.



### fleet<sup>®</sup> FR

The robust, hard wearing properties of our Fleet FR wall and ceiling covering, make it ideal to meet high traffic rail environments.

#### PRO-FIT

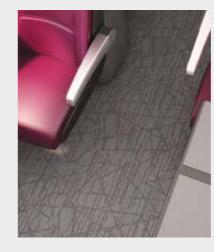


#### **Pro-Fit**

An adhesive-free installation solution, improving efficiencies in time, cost and operation throughout the life of the vehicle.

**PRO-FIT** 

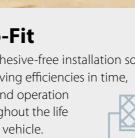
#### **BROADLOOM CARPET**



#### tessera<sup>®</sup> FR

Tessera FR offers stylish, sustainable and hardwearing carpet in various pile constructions, shapes and textures, delivering specific performance and aesthetic benefits.

covering product portfolio for the rail sector.



# THE WIDEST PORTFOLIO OF FLOOR AND WALL COVERINGS FOR RAIL



### **coral<sup>®</sup> FR TEXTILE CLEAN-OFF** ENTRANCE SYSTEMS

Coral has been the market leading textile entrance flooring brand for over 50 years and offers more choice than ever before with attractive and sustainable clean-off systems in styles and constructions to suit all applications, budgets and aesthetic requirements.

First impressions are crucial, which is why effective entrance flooring that stops dirt and moisture being tracked into carriages/saloon areas is fundamental to modern rail vehicle design.

By removing wet and dry soiling from the soles of shoes and wheel treads, an effective entrance system reduces premature wear and tear to interior floor coverings, minimises cleaning and maintenance costs and protects passengers by reducing slip hazards.

- Cut to size/shape option
- Stops up to 95% of dirt and moisture
- Excellent dirt storage/soil hiding
- High moisture absorption
- Reduces cleaning costs and prolongs the lifetime of on board floor coverings and finishes
- PVC and phthalate free
- Available with Pro-Fit backing for quicker installation. (excludes Coral Duo FR)



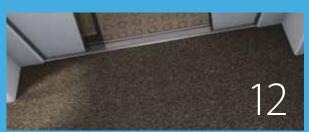
Providing the ideal solution for rail vehicle entrances, Coral FR entrance flooring is available in four different formats: Welcome FR, Classic FR, Brush FR and Duo FR – each with their own unique benefits.

Please ensure that 'FR' is clearly noted on all orders.

#### ECONYL® Made with 100% Regenerated Nylon

#### coral<sup>®</sup> classic FR

The ultimate moisture absorber



#### **coral**<sup>®</sup> brush FR The great all-rounder



#### coral<sup>®</sup> duo FR

The ultimate dirt and moisture remover

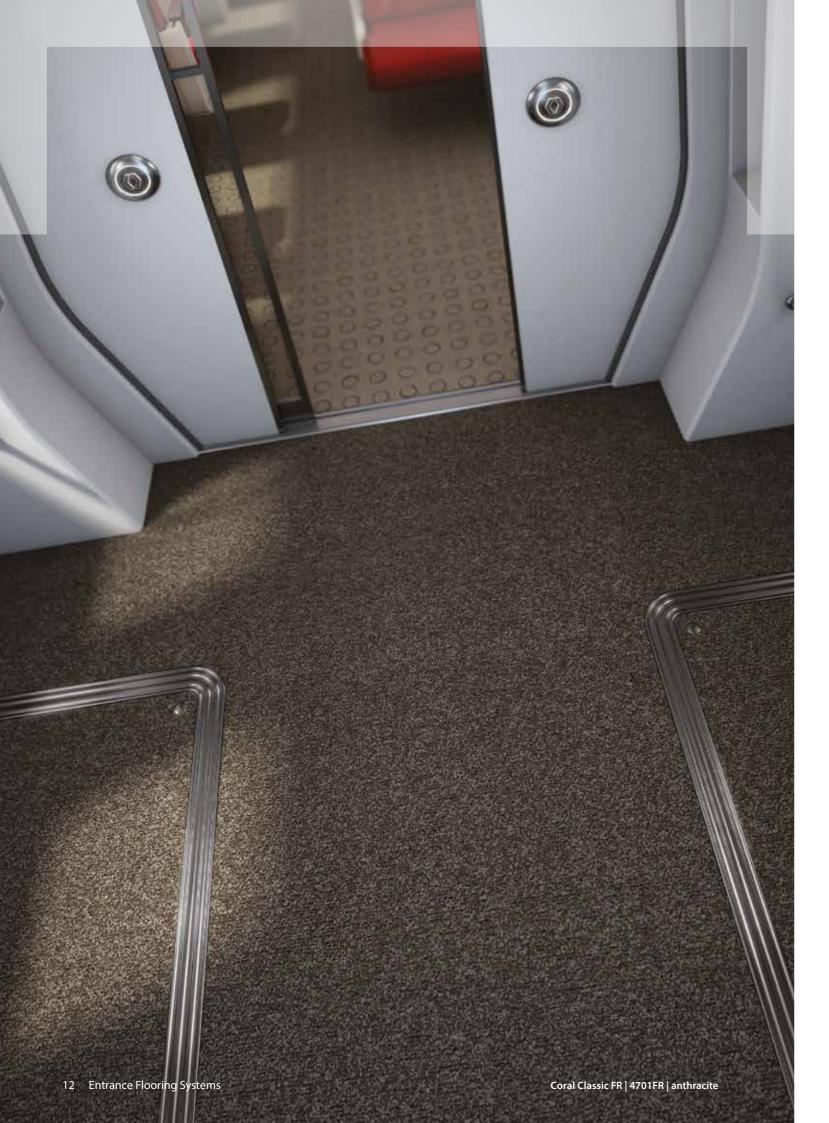


#### coral<sup>®</sup> welcome FR Where design meets environment



**coral**<sup>®</sup> logo FR Bespoke design



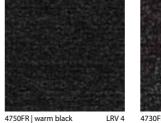


### **coral**<sup>®</sup> classic FR

#### The ultimate moisture absorber

Research shows that taking just two steps on Coral Classic FR's moisture retaining construction is enough to absorb half of the foot-borne moisture that would otherwise be carried inside on the soles of passengers shoes.

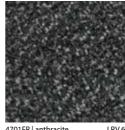
- Cut to size/shape option
- High moisture absorption
- Dirt scraping for effective clean-off
- Excellent dirt storage/soil hiding
- Advanced colouring and design choice
- Reaction to fire EN 45545-2 : HL2
- Available with Pro-Fit backing for quicker installation





LRV 4 4730FR | raven black

4758FR | olive



4701FR | anthracite LRV 6

Description		Tufted cut pile
Dimensions		Roll width 185cm Roll length ≤ 27.5m
Total thickness	ISO 1765	8.5mm
Pile weight		865g/m²
Yarn		100% polyamide-BCF solution dyed
Collection size		13
Area of use		Heavy Use
Impact noise reduction	EN-ISO 717-2	$\Delta Lw = approx. 31 dB$
Tested flammability standard	EN 45545-2	HL2*
Slip resistance	EN 13893	µ ≥ 0.30
Body voltage	ISO 6356	< 2 kV
Thermal resistance	ISO 8302	0.13 m <sup>2</sup> .K/W

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com Full technical specifications are available on page 68.



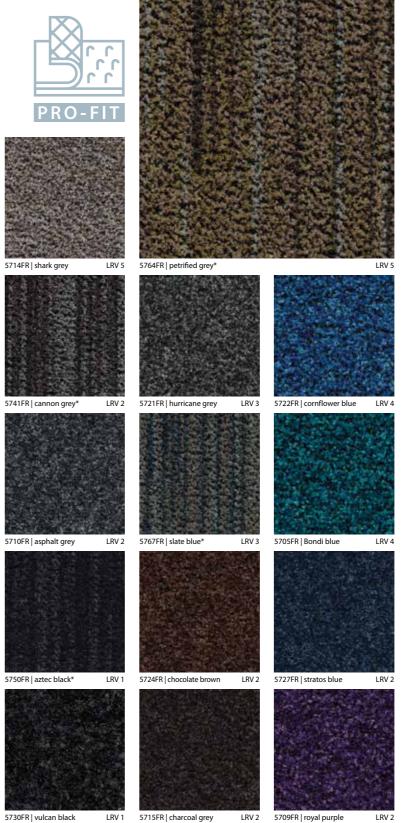
LRV 7



### coral<sup>®</sup> brush FR

#### The great all-rounder

Coral Brush FR is suitable for all types of entrance areas, absorbing moisture and removing dry soiling as the weather demands.



Designs marked with a \* have a more linear design whereas the other 13 colour references have an all-over aesthetic.

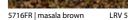
- Cut to size/shape option
- High moisture absorption
- Dirt scraping for effective clean-off
- Excellent dirt storage/soil hiding
- Advanced colouring and design choice
- Reaction to fire EN 45545-2 : HL3
- Available with Pro-Fit backing for quicker installation















5706FR | brick red

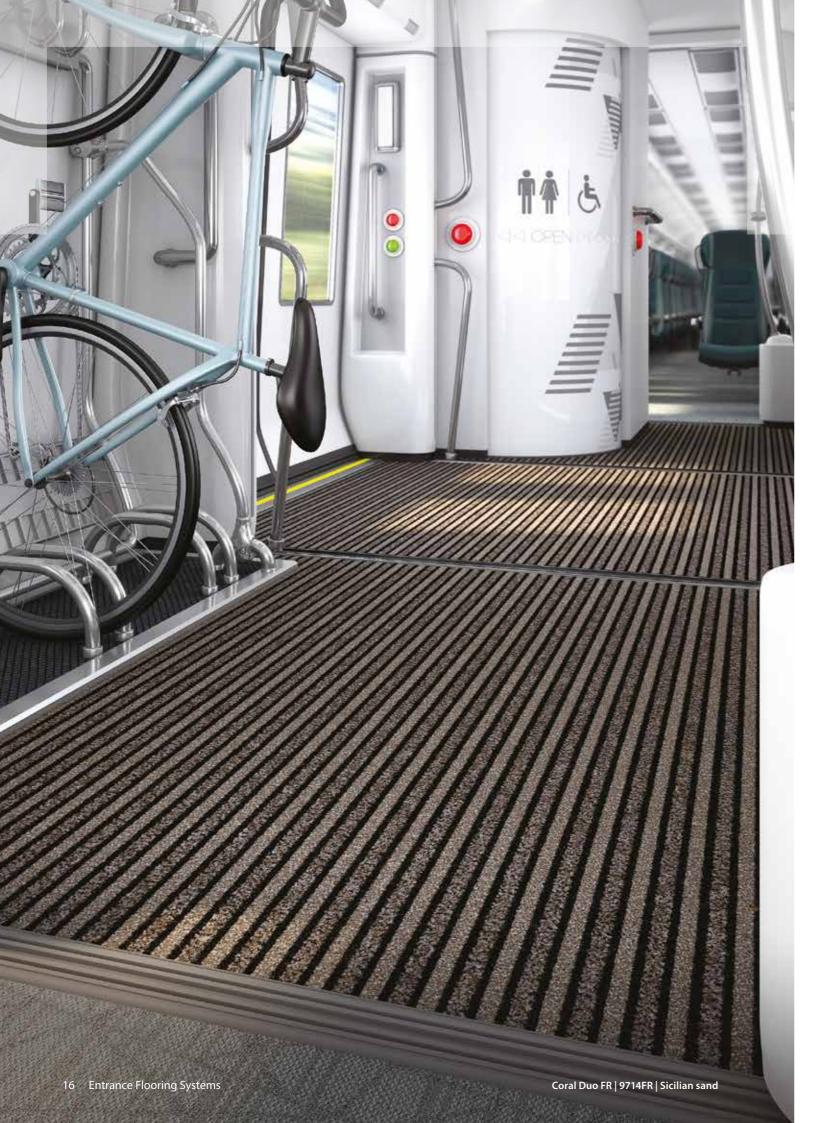
LRV 2

Tufted cut pile
Roll width 185cm Roll length ≤ 27.5m
9.0mm
920g/m²
100% regenerated ECONYL® polyamide
18
Heavy Use
$\Delta Lw = approx. 32 dB$
HL3*
µ ≥ 0.30
< 2 kV
0.093 m <sup>2</sup> .K/W

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

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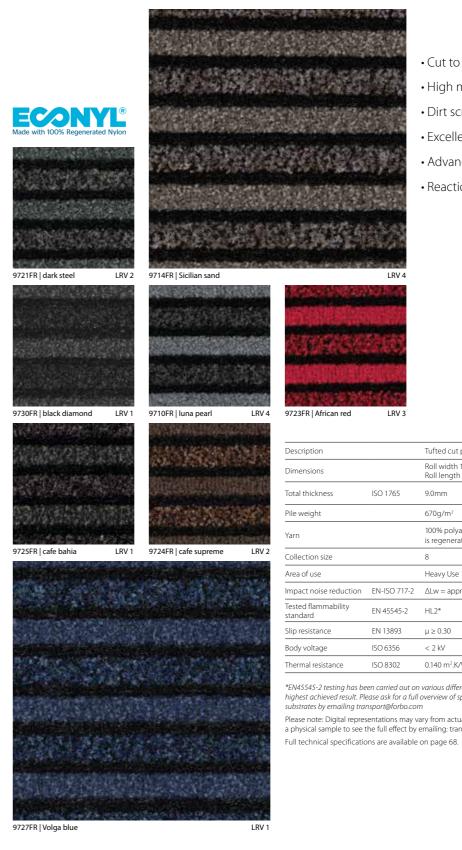




### coral<sup>®</sup> duo FR

#### The ultimate dirt and moisture remover

Coral Duo FR is the ideal solution when you need maximum dirt removal, unrivalled dirt retention and exceptional moisture absorption, all in just a couple of paces.



#### Coral Duo FR



- High moisture absorption
- Dirt scraping for effective clean-off
- Excellent dirt storage/soil hiding
- Advanced colouring and design choice
- Reaction to fire EN 45545-2 : HL2

		Tufted cut pile
		Roll width 185cm Roll length ≤ 27.5m
	ISO 1765	9.0mm
		670g/m <sup>2</sup>
		100% polyamide of which 66% is regenerated ECONYL® Nylon
		8
		Heavy Use
ction	EN-ISO 717-2	$\Delta Lw = approx. 29 dB$
y	EN 45545-2	HL2*
	EN 13893	µ ≥ 0.30
	ISO 6356	< 2 kV
	ISO 8302	0.140 m <sup>2</sup> .K/W

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com



### coral<sup>®</sup> welcome FR

#### Where design meets environment

With its contemporary linear design and rich, deep pile, Coral Welcome FR packs the style and aesthetic appeal of a luxury carpet and makes an unequivocal statement in any entrance area.

- Cut to size/shape option
- High moisture absorption
- Dirt scraping for effective clean-off
- Excellent dirt storage/soil hiding
- Advanced colouring and design choice
- Reaction to fire EN 45545-2 : HL3
- Available with Pro-Fit backing for quicker installation



205ER | blue la

3202FR   desperado L	.RV 2

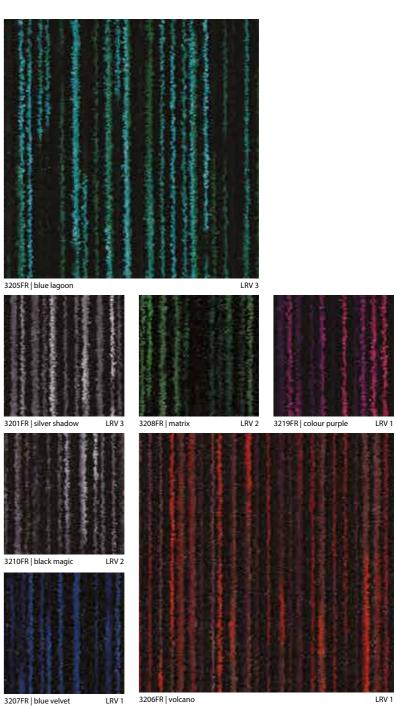
Description		Tufted cut pile
Dimensions		Roll width 190cm Roll length ≤ 27.5m
Total thickness	ISO 1765	8.0mm
Pile weight		780g/m <sup>2</sup>
Yarn		100% regenerated ECONYL® polyamide
Collection size		8
Area of use		Heavy Use
Impact noise reduction	EN-ISO 717-2	$\Delta Lw = approx. 27 dB$
Tested flammability standard	EN 45545-2	HL3*
Slip resistance	EN 13893	µ ≥ 0.30
Body voltage	ISO 6356	< 2 kV
Thermal resistance	ISO 8302	0.090 m <sup>2</sup> .K/W

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com Full technical specifications are available on page 68.



#### Coral Welcome FR





### marmoleum<sup>®</sup> FR<sup>2</sup>

### marmoleum<sup>®</sup> real FR<sup>2</sup>

Real FR is our classic aesthetic, consisting of many carefully selected individual colour tones that combine to create beautifully graded colours, from warm neutrals and calm greys to exciting brights and trend led shades. Developed to create choice, Real FR can be mixed together or combined with other Marmoleum designs to provide more imaginative compositions.

### marmoleum<sup>®</sup> fresco FR<sup>2</sup>

Fresco FR has a strong palette of subtly blended tone-on-tone items, each creating a fresh, delicate and balanced aesthetic. The soft contrast of its refined marbled structure gives a gentle feel which sets the stage for calm and soothing and Striato FR items.

### marmoleum<sup>®</sup> walton FR<sup>2</sup>

Presenting the pure character of linoleum. The solid identity of Marmoleum Walton FR with its smooth surface and minimal, unpretentious material expression makes it the ultimate and pure representative of our linoleum flooring. Its plain visual makes Walton FR easily adaptable to the context it is used in, and the subtle texture gives it a soft and natural look.

### marmoleum<sup>®</sup> concrete FR<sup>2</sup>

for creating a powerful accent in your floor design.

### marmoleum<sup>®</sup> vivace FR<sup>2</sup>

Vivace FR<sup>2</sup> is our liveliest and most outspoken aesthetic made with six to eight tones in each colourway. The differentiated elements combine to create a chameleon-like product that adapts well to a multitude of interiors, co-ordinating easily with many other surface finishes and colours. The high-contrast construction

### marmoleum<sup>®</sup> striato FR

Marmoleum Striato FR offers a palette that is neutral with warm tones and greyinfused hues spanning from light to dark, delivering natural looking floors that are great on their own and in combination with other floor coverings. The subtle linear pattern will easily pick up colours from its environment and works well with other materials.

Please ensure that 'FR<sup>2</sup>' or 'FR' is clearly noted on all orders.

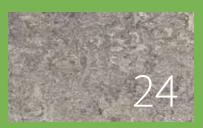
### LINOLEUM













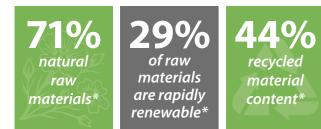
### marmoleum<sup>®</sup> FR<sup>2</sup> / marmoleum<sup>®</sup> striato FR

#### Marmoleum has a track record of over 150 years. A natural floor covering that is associated with sustainability, durability, high quality and innovative design.

For the rail sector, Marmoleum FR<sup>2</sup> and Marmoleum Striato FR, offer total versatility in terms of colour and design, but what makes these floor coverings really stand out is the fact that they are created using a high percentage of natural raw materials, with renewable and recycled contents.

- Homogeneous durable construction
- A sustainable floor covering
- Low life cycle costs can be renovated and repaired
- A floor covering that is naturally bacteriostatic
- Reaction to fire EN45545-2: HL3
- Lightweight at 2.9kg/m<sup>2</sup>
- Wide range of designs and colourways
- Aquajet cut to shape/size service available
- Suitable for use with underfloor heating

#### Environmental leadership:



\*The above results are for Marmoleum FR<sup>2</sup>. There is a small variation in results for Striato FR. Please ask for further details.

#### Infection control & Allergy UK

Independent testing by the University of Glasgow has proved that Marmoleum has a unique suitability for a diverse range of environments where hygiene and control of bacteria are important. Marmoleum FR<sup>2</sup>/Striato FR is also an Allergy UK approved floor covering.

#### **Topshield**<sup>2</sup>

All Marmoleum FR<sup>2</sup>/ Striato FR floors include Topshield<sup>2</sup>, a double layer,

UV-cured finish that is scratch and scuff resistant, easy to maintain and ensures long lasting appearance retention. With its natural bacteriostatic properties and resistance to chemicals, it is the ideal solution for heavy traffic rail vehicles.

topshield

#### Welding

In the majority of installations, Marmoleum does not need to be welded as it is completely dimensionally stable and will not shrink after proper installation. However, if welding is the preferred option, there are matching welding cords for every Marmoleum FR<sup>2</sup>/Striato FR design.



#### Aquajet

Forbo recognise that sometimes you may wish 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 the Aquajet cutting machines. These computer-controlled machines represent state-ofthe-art cutting technology and produce precision cut items accurate to a fraction of a millimetre.

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.



Forbo's Marmoleum FR<sup>2</sup> and Striato FR have been independently confirmed as CO<sub>2</sub> neutral floor coverings in the cradle to gate phase of the product's life cycle, without the need for offsetting.

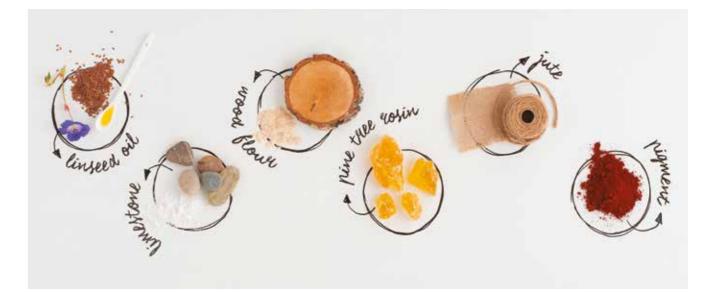
In simple terms, the CO<sub>2</sub> produced in the extraction, transportation and manufacturing process of Marmoleum FR<sup>2</sup>/Striato FR is balanced by the removal of CO<sub>2</sub> through the growing of its natural ingredients such as flax, jute and rosin.

As such, Forbo Marmoleum FR<sup>2</sup>/ Striato FR is the best flooring choice for every sustainable interior. By using durable materials in your rail projects, you can also contribute to a better environment.



A floor covering made from natural materials. Key materials from which Marmoleum FR<sup>2</sup>/Striato FR is created:  linseed oil from the seeds of the flax plants

- fibres from jute stems
- rosin from pine trees



#### Marmoleum FR<sup>2</sup> introduction

### MARMOLEUM FR<sup>2</sup> NATURALLY

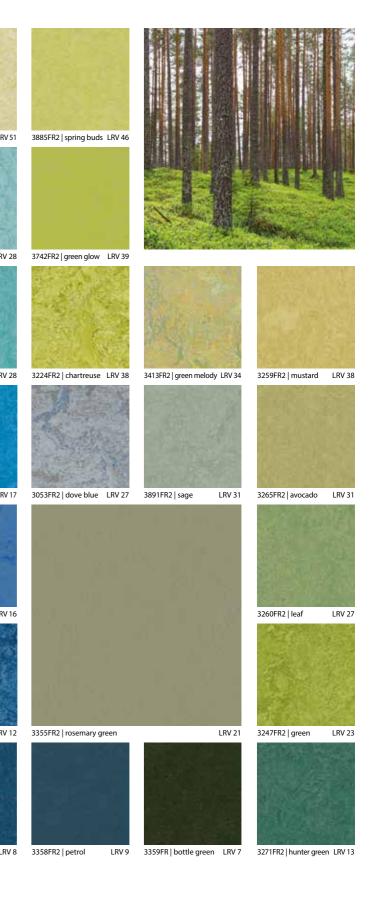


- upcycled wood residues from controlled sustainable forestry
- limestone
- pigments

### marmoleum<sup>®</sup> FR<sup>2</sup>

fresco FR<sup>2</sup> | real FR<sup>2</sup> | vivace FR<sup>2</sup> | walton FR<sup>2</sup> | concrete FR<sup>2</sup>

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3173FR2   Van Gogh LRV 46	3846FR2   natural corn	LRV 56	Concert Margaret and		- Salar		3266FR2   lilac	LRV 37	3828FR2   blue heaven Ll	RV 34 3.	267FR2   aqua LRV 2
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3407FR2   donkey island LRV 36	3847FR2   golden saffron LRV 41	3251FR2   lemon zest LRV 52	3225FR2   dandelion LRV 46	3125FR2   golden sunset LRV 38	3268FR2   honey suckle LRV 3	3	3740FR2   purple gl	ow LRV 21	3219FR2 spa LF	RV 32 32	264FR2   Greek blue LRV 1
3403FR2   Asian tiger LRV 29	3174FR2   Sahara LRV 29	3825FR2   African desert LRV 26	3738FR2   orange glow LRV 27	3262FR2   marigold LRV 34	3263FR2   rose LRV 1	7	3270FR2   violet	LRV 17	3055FR2   fresco blue Ll	RV 23 3	739FR2   blue glow LRV 1
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		3352FR2   Berlin red LRV 10	3203FR2 henna LRV 11	3127FR2   Bleeckerstreet LRV 9	3273FR2 ruby LRV 1	0	3353FR   eggplant p	urple LRV8	3730FR2   Stella Lf	RV 17 3.	261FR2   marine LRV

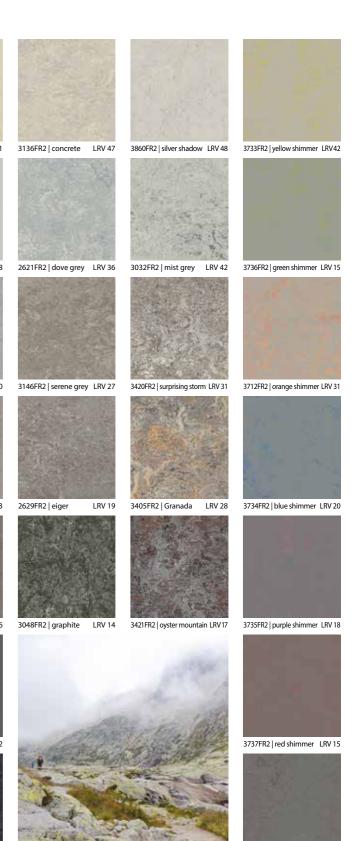


IARMOLEUM FR<sup>2</sup> LINOLEUM

### marmoleum<sup>®</sup> FR<sup>2</sup>

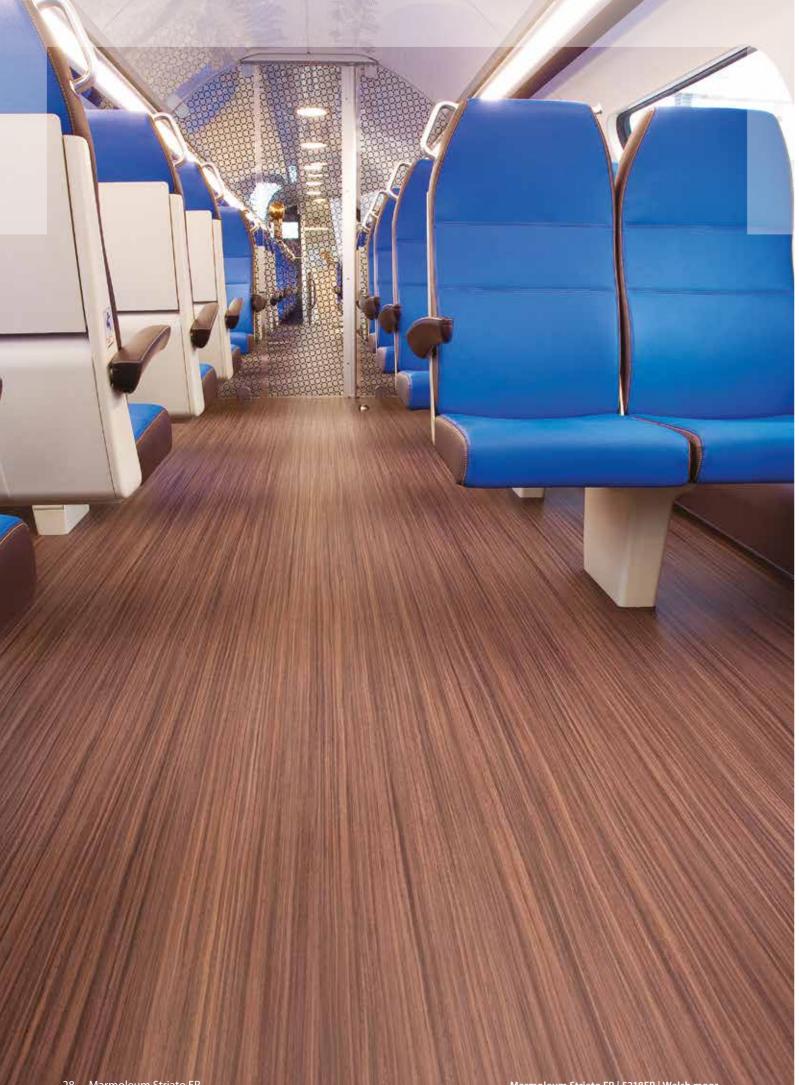
fresco FR<sup>2</sup> | real FR<sup>2</sup> | vivace FR<sup>2</sup> | walton FR<sup>2</sup> | concrete FR<sup>2</sup>

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Marmoleum FR<sup>2</sup> 27

3703FR2 | comet LRV 14



### marmoleum<sup>®</sup> striato FR

Marmoleum Striato FR offers a palette that has neutral and bright colours with warm tones and grey-infused hues spanning from light to dark, delivering natural looking floors that are great on their own and in combination with other floor coverings.

The subtle linear pattern will easily pick up colours from its environment and works well with other materials.



RMOLEUM FR<sup>2</sup> LINOLEUM

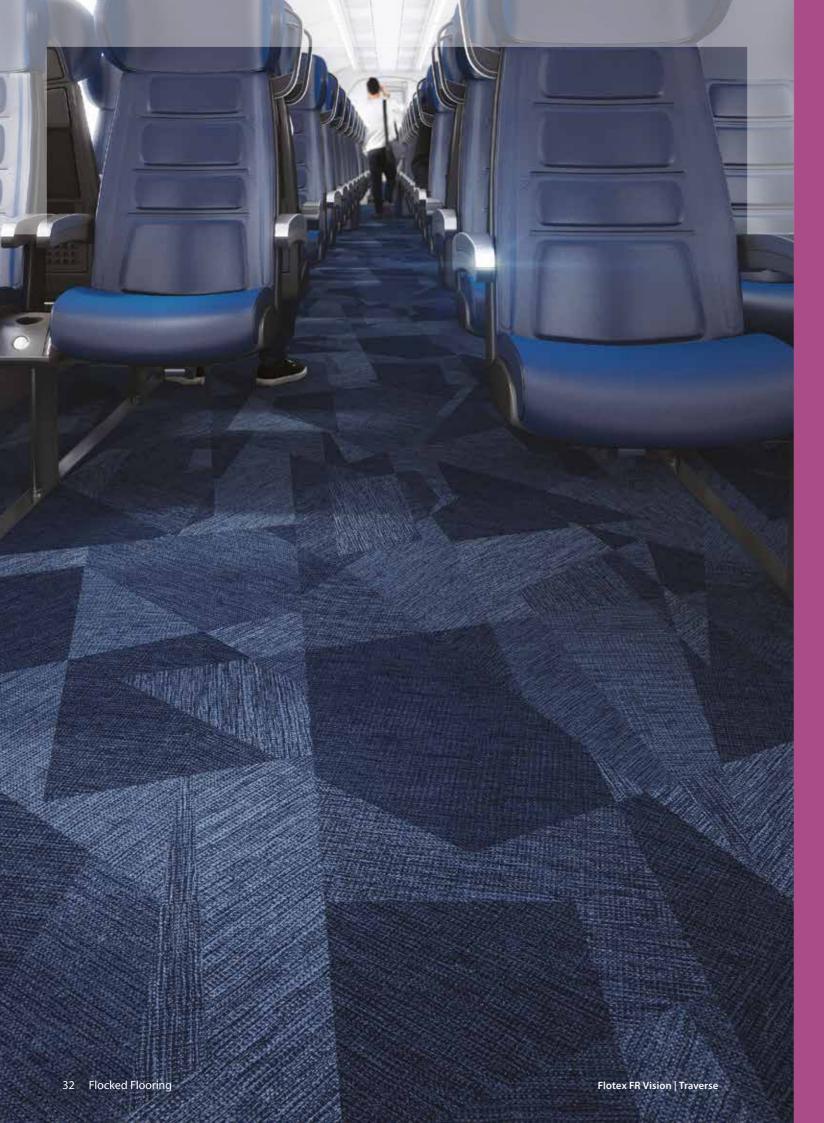
5247FR | dark aura

LRV 11



### MARMOLEUM FR<sup>2</sup>/STRIATO FR **REFERENCES BY DESIGN**

Real FR <sup>2</sup>	Fresco FR <sup>2</sup>	Vivace FR <sup>2</sup>	Walton FR <sup>2</sup>	Concrete FR <sup>2</sup>	Striato FR
2499FR2 sand	2939FR2 black	3403FR2 Asian tiger	3352FR2 Berlin red	3568FR2 delta lace	3573FR trace of nature
2621FR2 dove grey	3125FR2 golden sunset	3411FR2 sunny day	3358FR2 petrol	3701FR2 moon	3575FR white cliffs
2629FR2 eiger	3126FR2 Kyoto	3413FR2 green melody	3359FR2 bottle green	3702FR2 liquid clay	5216FR Pacific beach
2713FR2 calico	3131FR2 scarlet	3407FR2 donkey island	3353FR2 eggplant purple	3703FR2 comet	5217FR withered prairie
2767FR2 rust	3139FR2 lava	3405FR2 Granada	3370FR2 terracotta	3704FR2 satellite	5218FR Welsh moor
3030FR2 blue	3203FR2 henna	3420FR2 surprising storm	3360FR2 vintage blue	3705FR2 meteorite	5221FR colour stream
3032FR2 mist grey	3246FR2 shrike	3421FR2 oyster mountain	3355FR2 rosemary green	3706FR2 beton	5225FR compressed time
3038FR2 Caribbean	3247FR2 green	3426FR2 cork tree	3363FR2 lilac	3707FR2 black hole	5230FR whitewash
3048FR2 graphite	3251FR2 lemon zest	3427FR2 agate	3368FR2 grey iron	3708FR2 fossil	5232FR rocky ice
3053FR2 dove blue	3252FR2 sparrow		3369FR2 titanium	3709FR2 silt	5237FR black sheep
3055FR2 fresco blue	3254FR2 clay		3367FR2 alloy	3711FR2 cloudy sand	5238FR straw field
3075FR2 shell	3257FR2 edelweiss			3712FR2 orange shimmer	5239FR oxidised copper
3120FR2 rosato	3259FR2 mustard			3723FR2 nebula	5240FR canyon shadow
3123FR2 arabesque	360FR2 leaf			3724FR2 orbit	5241FR sunshine yellow
3127FR2 Bleeckerstreet	3261FR2 marine			3725FR2 cosmos	5242FR red roses
3136FR2 concrete	3262FR2 marigold			3726FR2 Venus	5243FR peacock blue
3137FR2 slate grey	3263FR2 rose			3727FR2 drift	5244FR hint of yellow
3141FR2 Himalaya	3264FR2 Greek blue			3728FR2 kaolin	5245FR blue stroke
3146FR2 serene grey	3265FR2 avocado			3729FR2 mica	5246FR orange highlights
3173FR2 Van Gogh	3266FR2 lilac			3730FR2 Stella	5247FR dark aura
3174FR2 Sahara	3267FR2 aqua			3731FR2 flux	
3219FR2 spa	3269FR2 turquoise			3732FR2 asteroid	
3224FR2 chartreuse	3271FR2 hunter green			3733FR2 yellow shimmer	
3225FR2 dandelion	3273FR2 ruby			3734FR2 blue shimmer	
3232FR2 horse roan	3825FR2 African desert			3735FR2 purple shimmer	
3233FR2 shitake	3828FR2 blue heaven			3736FR2 green shimmer	
3234FR2 forest ground	3846FR2 natural corn			3737FR2 red shimmer	
3236FR2 dark bistre	3858FR2 Barbados			3738FR2 orange glow	
3268FR2 honey suckle	3860FR2 silver shadow			3739FR2 blue glow	
3270FR2 violet	3861FR2 Arabian pearl			3740FR2 purple glow	
3272FR2 plum	3866FR2 eternity			3741FR2 yellow glow	
3847FR2 golden saffron	3872FR2 volcanic ash			3742FR2 green glow	
3881FR2 green wellness	3874FR2 walnut			3743FR2 red glow	
	3883FR2 moonstone				
	3885FR2 spring buds				
	3889FR2 cinder				
	3890FR2 oat				
	3891FR2 sage				



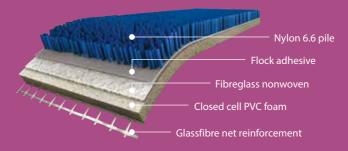
### flotex<sup>®</sup> FR

Flotex FR is a unique, textile, flocked floor covering, combining the cleaning properties and durablity of a resilient flooring with the comfort, slip resistance and acoustic properties usually associated with textiles.

- High definition print offers you complete freedom of design
- Bespoke design service
- Lightweight approximately 1225 gram/m<sup>2</sup>
- Easy to clean
- Impervious backing makes it suitable for wet cleaning
- Excellent acoustic properties up to 22 dB
- Slip resistance > 0.30
- Durable construction: using Nylon 6.6
- Dimensionally stable
- Improved indoor air quality (independently proven by Allergy UK)
- Easy to repair any damaged areas
- Ortho-phthalate free
- Cut to size/shape option
- Reaction to fire EN 45545-2 : HL2.

Flotex FR can be digitally printed. Its high definition quality and specialist printing technology allow for large endless pattern repeats and vivid lifelike colours. This creates a new dimension for Flotex FR and provides ultimate design flexibility for rail environments.

#### **Flotex FR construction**

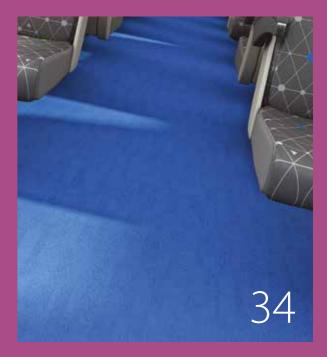


Please ensure that 'FR' is clearly noted on all orders.

### **FLOCKED FLOORING**

### flotex<sup>®</sup> colour FR

Flotex Colour FR is a collection of four designs (Metro, Penang, Calgary and Canyon) which together form a rhapsody of colour across a broad spectrum.



### flotex<sup>®</sup> vision FR

Flotex Vision FR offers an infinite number of design options ranging from abstracts with an intricate colour spectrum to realistic images of natural materials.



### flotex<sup>®</sup> colour FR

A collection of four semi plain designs. The full colour palette can be viewed on pages 38 and 39.

#### **Metro FR**

Metro FR is a versatile semi-plain floor design which covers a wide and modern colour bank. The understated pattern conveys texture without definite form, creating an authentic feel that is unique to Flotex flooring.

Available in 35 colourways

### **Penang FR**

Flotex Penang FR offers a stunning look for any modern environment. It creates a subtle linear effect and comes in a range of rich modern shades.

Available in 21 colourways



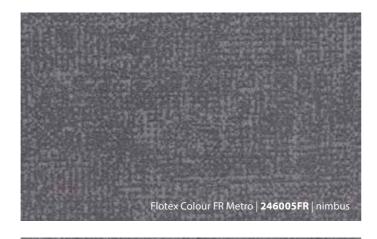
Flotex Calgary FR offers a wide colour choice in a soft, natural design that works well in larger areas. The pattern can be easily combined with complementary Flotex or resilient ranges and is the perfect choice for application areas that require a muted ambience.

Available in 22 colourways

### **Canyon FR**

Flotex Canyon FR is a heavily grained semi-plain inspired by natural earth and rock. It has a distinctive strong texture with a medium contrast.

Available in 12 colourways









### flotex<sup>®</sup> vision FR

With over 500 individual items to choose from, plus the option to re-colour several designs, Flotex Vision FR is best viewed on our digital library (**www.forbo-flooring.com/flotexvision**) which is continuously updated. The designs fall into six broad categories of floral, image, lines, naturals, pattern and shape. High definition digital print designs that create superior textures and almost 3D like aesthetics.

### **Floral FR**

A selection of eight floral designs, ranging from abstract, graphic flower motifs to romantic images of roses and butterflies. Each of the eight design types in this category is available in a variety of colourways.

### Image FR

This design category contains a wide variety of photographic images that have been transformed into interesting and unique floors. Grass, leaves, water drops, buttons or zebra print are just some of the possibilities amongst the wide range of images.

### **Lines FR**

Eight linear/stripe designs, each with their own characteristics, ranging from muted and sophisticated colourways to very complex and multi-colour.

### **Naturals FR**

This collection offers photorealistic images of natural materials such as wood, stone, ceramics or cork floors. The design technology creates amazingly realistic floors but with the added benefit of improved acoustics, slip resistance and reduced maintenance costs.

### Pattern FR

The intricate play of networks and patterns creates a textured, non-directional visual. Each design in this category is available in a number of colourways.

### Shape FR

A collection of organic shapes and motifs delivering beautiful all-over patterns, including both contemporary and traditional designs.













### FLOTEX FR - CUSTOM DESIGN SERVICE

Create your own masterpiece using our custom design service alongside our high definition printing technology. Our experienced designers can help at any stage in the design process, depending on what involvement you require.

If you are looking for design ideas, re-colouration of existing designs or help with the development of a unique design that works perfectly with your rail interior design scheme, then we have the resource to help. Alternatively, you can choose from over 500 existing references in our Colour and Vision collections.

### STEPS IN THE CUSTOM DESIGN PROCESS:







### FLOTEX FR OFFERS REAL DESIGN FREEDOM

FLOTEX FR

### **flotex**<sup>®</sup> colour FR

metro FR | penang FR | calgary FR | penang FR

445022FR   canyon limestone 290019FR   calgary carbon	80 All and a second sec	87 All 482018FR   penang bamboo	445025FR   canyon earth	91 All 290017FR   calgary crystal
290012FR   calgary cement 445023FR   canyon linen	290026FR   calgary linen	482075FR   penang flax	97 246012FR   metro sand	81 A2 482027FR   penang orchid
482007FR   penang zinc 246005FR   metro nimbus	E LAT 246011FR   metro pebble	290007FR   calgary suede	290013FR   calgary caramel	482023FR   penang dusk
246006FR   metro grey 482005FR   penang smoke	482017FR   penang nimbus	1 246029FR   metro truffle	290023FR   calgary expresso	290022FR   calgary condor
482037FR   penang grey 445021FR   canyon stone	EI AL		482016FR   penang coral	91 A21 246035FR   metro pink
290010FR   calgary ash 445020FR   canyon pumice	246002FR   metro tempest	482020FR   penang shale	445026FR   canyon garnet	246034FR   metro lilac
246007FR   metro ash 482031FR   penang ash	290002FR   calgary grey	246014FR   metro concrete	246009FR   metro pepper	62 482024FR   penang purple
482001FR   penang anthracite	445019FR   canyon slate	246010FR   metro chocolate	۲۵ 246015FR   metro cocca	246016FR   metro grape



LRV 28

### flotex<sup>®</sup> vision FR

ACCESS:

### **GO ONLINE** AND DISCOVER OVER 500 DESIGNS FOR YOUR FLOOR

### STEPS IN THE FLOTEX VISION FR DESIGN PROCESS:

3 1 www.forbo-flooring.com/flotexvision CHOOSE THE DESIGN CATEGORY 2 (E.G. FLOTEX VISION PATTERN SHEET) CHOOSE THE REFERENCE 4 THAT YOU PREFER (E.G. FLOTEX VISION - S570011 GRID) 100.00 flotex vision pattern 5 600002 Weisve Arthr . . . . . 

Warman a and



IF YOU SEE A DESIGN THAT YOU LIKE BUT THE COLOURWAY OPTIONS DON'T WORK FOR YOUR PROJECT THEN CONTACT US AT TRANSPORT@FORBO.COM TO ENQUIRE IF IT WOULD BE POSSIBLE TO RE-COLOUR THAT PARTICULAR DESIGN.

ALTERNATIVELY YOU CAN LOOK TO CREATE SOMETHING COMPLETELY BESPOKE.



CLICK ON THE 'PRODUCT' TAB TO SEE ALL THE

DIFFERENT DESIGN AND COLOURWAY OPTIONS

AVAILABLE IN THAT DESIGN CATEGORY.

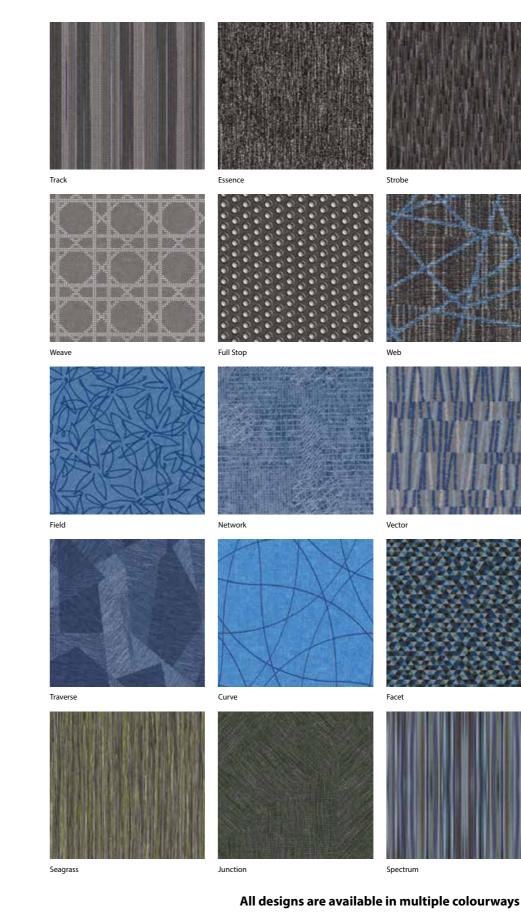


CLICK ON THE 'FLOORPLANNER' LINK UNDERNEATH THE SAMPLE IMAGE - HERE YOU CAN VIEW THAT REFERENCE IN A ROOM SETTING.

YOU CAN CHANGE THE ROOM SCENE AND THE FLOORING PRODUCT/DESIGN/COLOUR IN ORDER TO GET A GOOD FEEL FOR HOW THAT REFERENCE LOOKS IN A RAIL VEHICLE.



#### Shown here is only a selection of the many different designs available. Most designs are available in numerous different colourway options. Flotex Vision is best viewed on our 'up-to-date' digital library: www.forbo-flooring.com/flotexvision

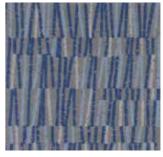


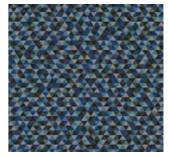






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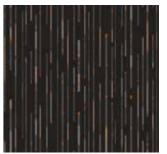




Facet



Spectrun





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Pulse



Plaid glacier

FLOTEX FR FLOCKED FLOOF

### THE PROVEN CLEANABILITY OF FLOTEX FR

With an unbeatable combination of performance attributes, Flotex flocked floor coverings have seen a huge rise in popularity in recent years and are now challenging conventional carpets in all sectors, including the global rail market where demanding conditions require flooring to be subjected to particularly rigorous cleaning regimes in order to maintain appearances.

Here, we discuss why operators in the rail sector are increasingly specifying flocked floor coverings for their rail vehicle projects, and with reference to recent research, show how the construction of this innovative type of floor covering offers unrivalled cleanability when compared with other textile floor coverings.



#### **Key performance benefits**

Flotex FR, electrostatically flocked floor coverings offer exceptional performance and provide a unique flooring solution, combining properties found in conventional resilient and textile flooring. Like resilient floor coverings, they are safe, hygienic, durable and washable, yet at the same time they offer the warmth, comfort, acoustic characteristics and slip resistance of textile flooring. These properties, together with the availability of fire resistant ranges and a phenomenal choice of aesthetic styling options, make flocked floor coverings an ideal solution for rail interiors.

#### Cleanability

The dense surface pile of a flocked floor covering makes it extremely durable, while its upright nylon filaments and impermeable PVC backing means it can be cleaned right down to the base. The nylon pile captures airborne allergens and fine dust, which is easily released with regular use of a standard upright vacuum cleaner. This contributes towards better indoor air quality - indeed Flotex FR is the only textile floor covering for rail to carry the Allergy UK Seal of Approval™.

A recent Cleaning Research International study compared the cleanability of a flocked pile floor covering with a loop pile and cut pile carpet. Identically sized samples were conditioned, weighed and then soiled in accordance with BS EN 1269:1997 following Method B, using 10g of standard soil. They were then reconditioned and reweighed before being vacuumed with an upright cleaner fitted with a brush, a spray extraction, and a contra-rotating brush cleaner. At each stage, when dry, the samples were reconditioned and



weighed to determine how much soil had been removed. The results below clearly demonstrate the superior cleanability of the flocked floor covering which had the least amount of soil remaining after each cycle, with a 77.7% mean of soil removed after the use of a contra-rotating brush cleaner.

#### **Drying times**

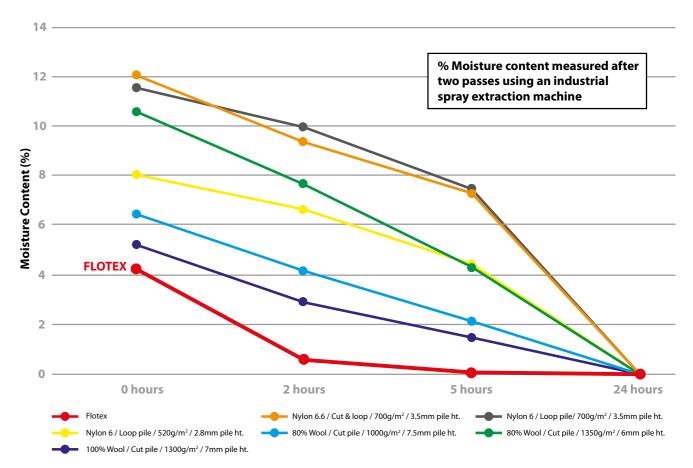
How long it takes for a floor covering to dry will also be of major concern to transport operators keen to minimise turnaround times. The research study also looked specifically at this aspect and tested the drying characteristics of flocked floor coverings alongside six different carpet constructions. Each floor covering was subjected to two passes using an industrial spray extraction machine and the remaining moisture content was measured after various periods of time, to establish how long each type took to dry.

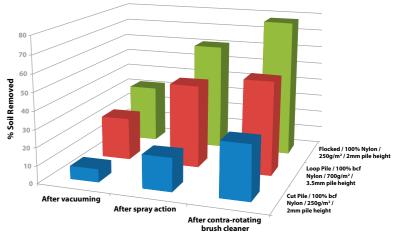
The graph opposite shows that after just two hours, the flocked pile sample was substantially drier than all the other constructions of carpet, with only 0.57% moisture remaining, and after five hours, the pile was almost completely dry whereas other samples still retained significant amounts of moisture.

#### A superior solution for transport applications

Flocked floor coverings are clearly different to any other carpets on the market in terms of cleanability alone. Add in their more rapid drying times, their durability, allergy benefits, acoustic and slip resistant properties, fantastic styling options and the availability of an FR collection (reaction to fire EN 45545-2 : HL2), and it's clear to see why this innovative floor covering is really going places in the rail sector.

#### DRYING CHARACTERISTICS OF CARPETS





#### **Cleaning & Maintenance Guide**

You can find our latest rail specific cleaning and maintenance guides for the full portfolio of floor, wall and ceiling coverings on our website:

#### www.forbo-flooring.com/transport

Alternatively you can scan the OR code to view and download the Rail Flotex FR Cleaning Video.

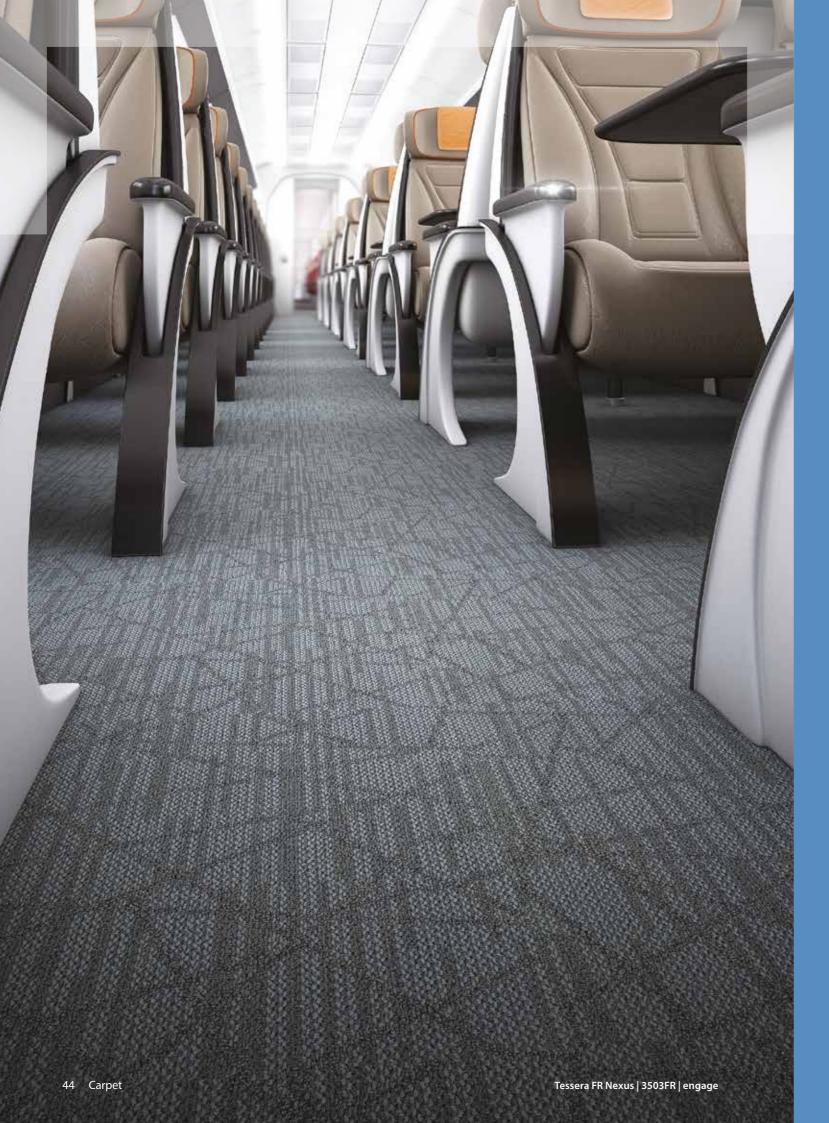


#### % SOIL REMOVAL – FLOCKED v **CUT PILE/LOOP PILE CARPETS**

#### **Cleanability of flocked pile compared** to other construction of carpets.

Source: Cleaning Research International

FLOTEX FR



### tessera<sup>®</sup> FR

Tessera FR tufted carpets are renowned for their aesthetic styling and outstanding performance, even in the most demanding of heavy traffic environments. Tessera FR collection includes contemporary and classic styles to enhance a wide variety of rail vehicle interiors.

Tessera FR is a collection of attractive, hardwearing carpets, offered in various pile constructions and textures, all designed to deliver specific aesthetic and performance benefits. The installation of carpet in a rail vehicle adds significant warmth, comfort and acoustic benefits.

- Durability and appearance retention, made from 100% nylon
- Flexibility for colourisation
- Slip resistance
- Reaction to fire EN 45545-2 : HL2
- Cut to size/shape option
- Available with Pro-Fit backing for quicker installation

Please ensure that 'FR' is clearly noted on all orders.



### **BROADLOOM CARPET**

### tessera<sup>®</sup> alignment FR

Sophisticated and cleverly textured to complement the most contemporary interior design



### tessera<sup>®</sup> helix FR

An understated linear design, combining rich texture and visual appeal



### tessera® nexus FR

Merging a metallic web overlay with a sophisticated striated ground, Tessera Nexus creates a network of connections

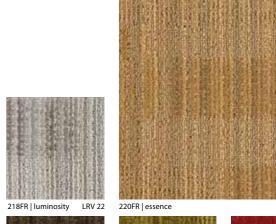




### tessera<sup>®</sup> alignment FR

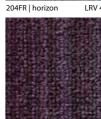
Sophisticated and cleverly textured to complement the most contemporary rail interior design. Tessera Alignment FR is available in 24 colours.











202FR | elixir



LRV 4

203FR | cyclone



223FR | solstice

LRV 5

TESSERA FR CARPET

LRV 17

Description	Tufted multi-height cut and loop pile of		
Dimensions	EN-ISO 24341	Roll width 185cm Roll length ≤ 27.5m	
lotal thickness	ISO 1765	6.0mm ± 10%	
Pile weight	ISO 8543	730g/m²	
/arn		100% polyamide	
Collection size		24	
Area of use		Heavy Use	
mpact noise eduction	EN-ISO 717-2	$\Delta Lw = 25 \text{ dB}$	
Fested flammability standard	EN 45545-2	HL2*	
lip resistance	EN 13893	µ ≥ 0.30	
Body voltage	ISO 6356	< 2 kV	

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

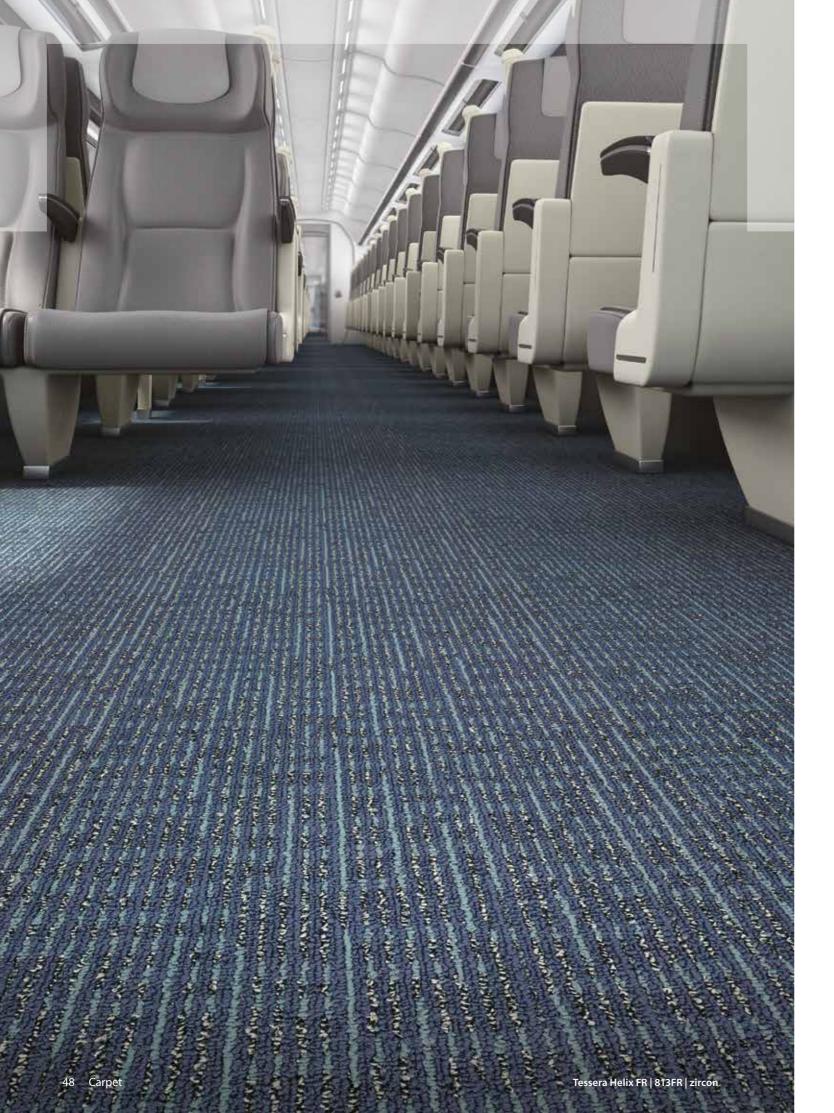
Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com

Full technical specifications are available on page 71.



243FR | cosmic ray LRV 2 240FR | wavelength LRV 2

Carpet 47



### tessera<sup>®</sup> helix FR

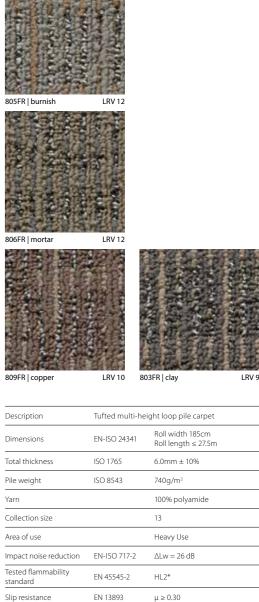
An understated linear design, combining rich texture and visual appeal. Tessera Helix FR is available in 13 colours.



810FR | carbon

LRV 5

TESSERA FR CARPET



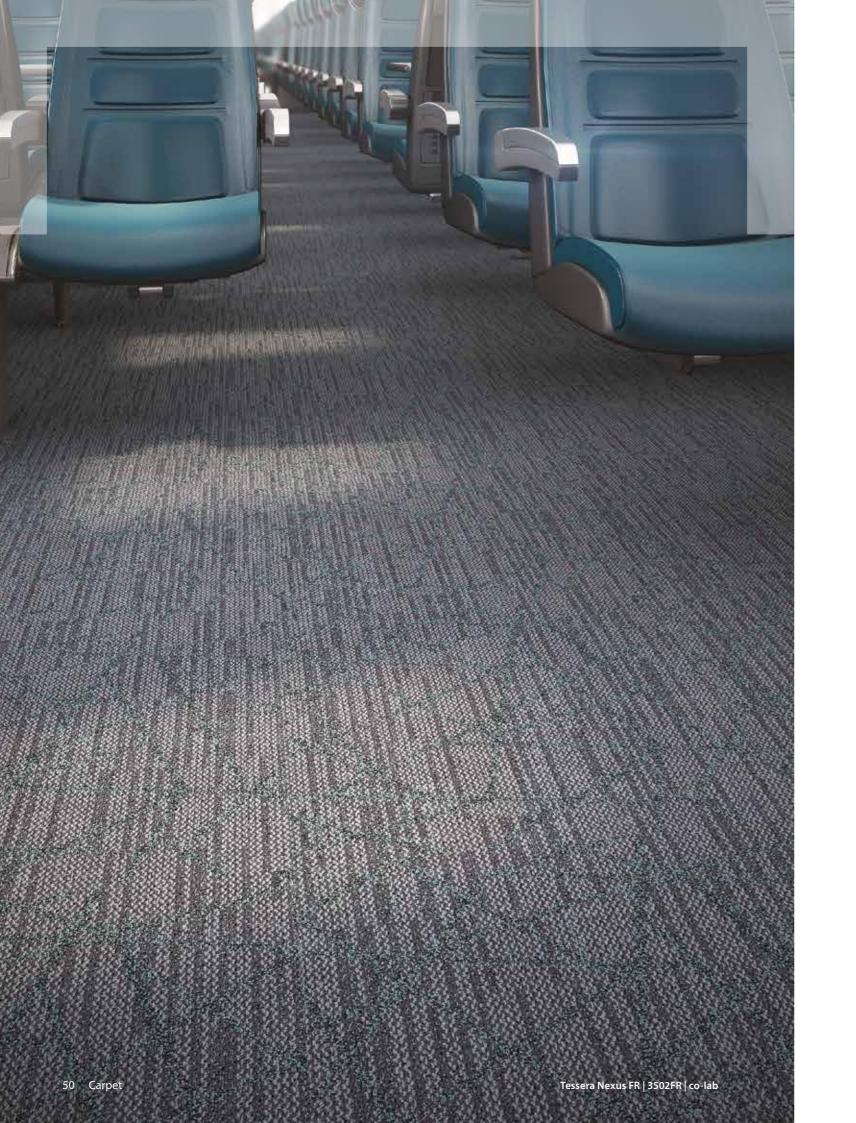
ISO 6356 < 2 kV Body voltage

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com

Full technical specifications are available on page 71.

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### tessera® nexus FR

Merging a metallic web overlay with a sophisticated striated ground, Tessera Nexus FR creates a network of connections in 9 contemporary colourways.



3508FR | groupchat



3505FR | refresh



Description	Tufted multi-height loop pile carpet		
Dimensions	EN-ISO 24341	Roll width 185cm Roll length ≤ 27.5m	
Total thickness	ISO 1765	5.4mm ± 10%	
Pile weight	ISO 8543	515g/m <sup>2</sup>	
Yarn		100% Invista Antron® Lumena polyamide 6.6	
Collection size		9	
Area of use		Heavy Use	
Impact noise reduction	EN-ISO 717-2	$\Delta Lw = 25 \text{ dB}$	
Tested flammability standard	EN 45545-2	HL2*	
Slip resistance	EN 13893	μ ≥ 0.30	
Body voltage	150 6356	< 2 kV	

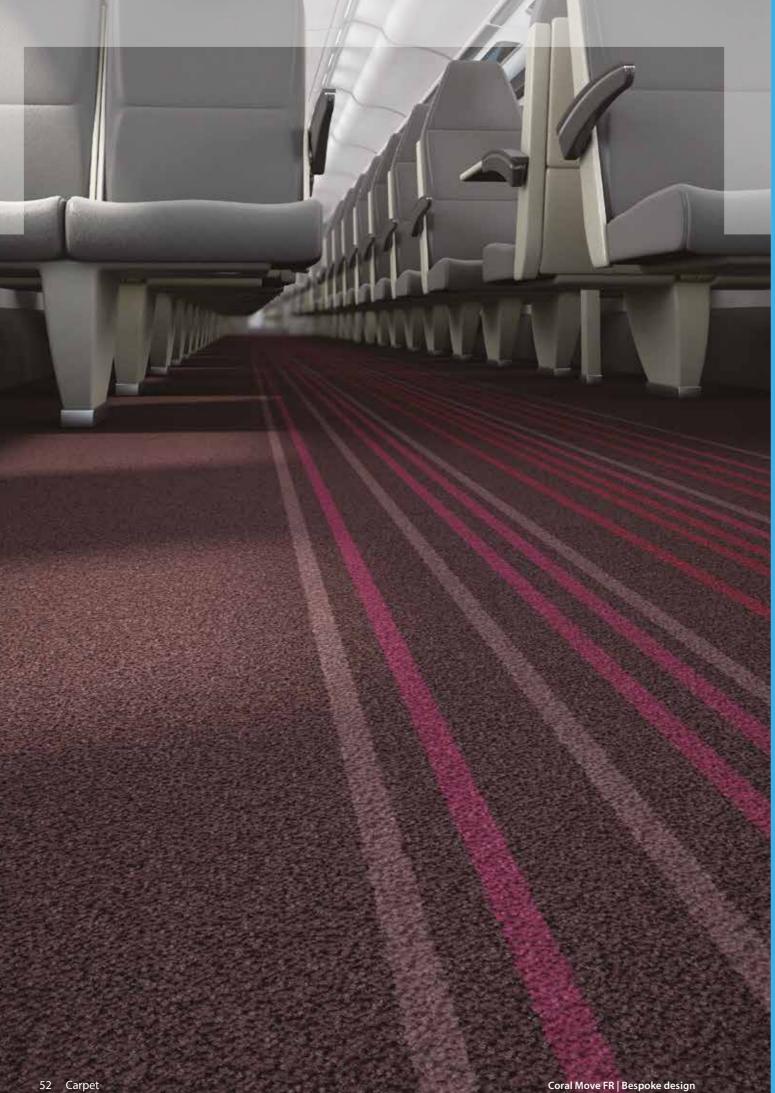
\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com

LRV 7



LRV 7



### coral<sup>®</sup> move FR

Designed specifically for rail interiors Coral Move FR is an exceptionally versatile, premium cut pile carpet solution offering extensive design possibilities and colourways to complement a wide range of interior design schemes.

Coral Move FR is a luxurious made-to-order floor covering, manufactured from 100% regenerated Econyl yarn, that offers the aesthetic styling, durability and longlasting appearance retention required for heavily

Each Coral Move FR carpet is bespoke and our dedicated design team will work with you to deliver the desired aesthetic (design and colour), on a project by project basis.

- Extensive customisation possibilities, including high definition digital printing (Coral Move Vision FR)
- Premium cut-pile carpet specification achieves luxurious ambience and underfoot comfort
- Durability and appearance retention due to 100% nylon construction
- 100% of Coral Move FR yarn is Econyl® regenerated solution dyed polyamide
- Natural latex backing from rapidly renewable source
- Carpet pile density delivers slip resistance and outstanding acoustic properties
- Ease of maintenance due to open cut pile construction
- Reaction to fire EN 45545-2: HL3
- Available with Pro-Fit backing for quicker installation

**Please ensure that 'FR' is** clearly noted on all orders.





### **BROADLOOM CARPET**

### coral<sup>®</sup> move FR

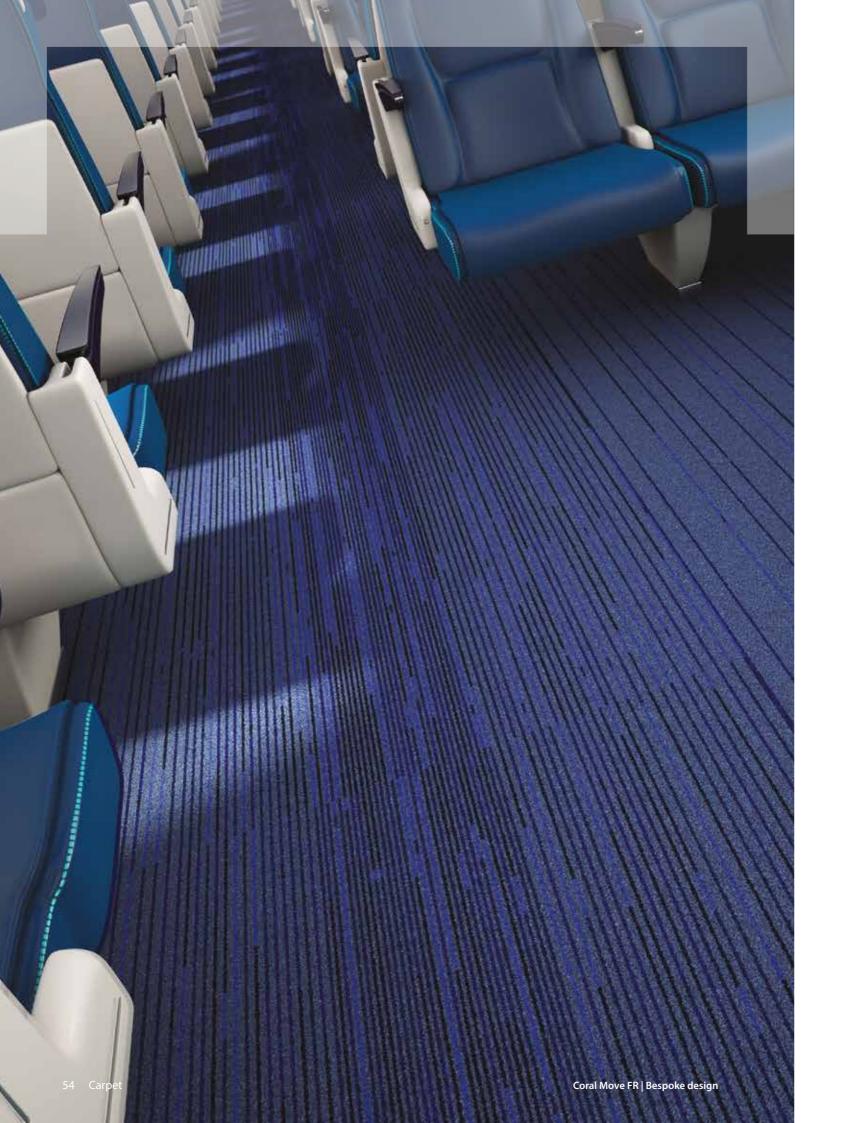
Luxurious cut pile carpet, manufactured to a bespoke tufted design specification, giving real design flexibility. Combining attractive and practical soil hiding designs along with an extensive colour palette.



### coral<sup>®</sup> move vision FR

Offering total design freedom, this luxurious cut pile carpet is digitally printed with styles, ranging from abstract designs with intricate colour combinations to realistic representations of natural materials





### coral<sup>®</sup> move FR

### **DESIGN FLEXIBILITY**

Coral Move FR carpet allows for numerous tufting design styles which can give very different overall aesthetics. Six different design styles are shown here, but these are only suggestions.

Each Coral Move FR carpet is bespoke and our dedicated design team will work with you to match carpet design and colour requirements on an individual project by project basis.

There are 140+ colourways in the standard yarn collection, but special colours can be matched to RAL/Pantone references as required.



### ECONYL® Made with 100% Regenerated Nylon

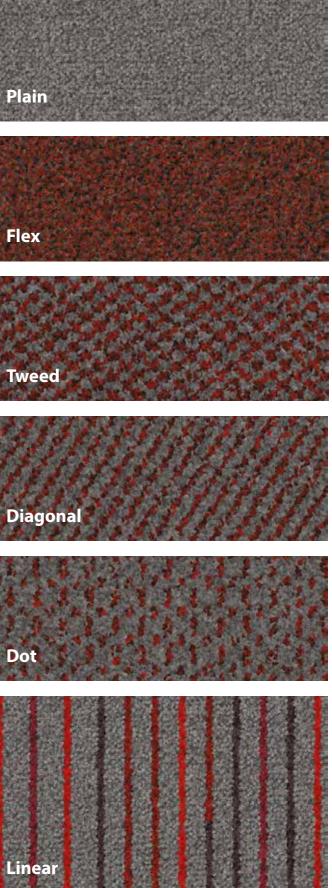
Description		Tufted cut pile carpet
Dimensions	EN-ISO 24341	Roll width 185cm Roll length ≤ 27.5m
Total thickness	ISO 1765	8.0mm ± 10%
Pile installation weight		750g/m <sup>2</sup>
Yarn		100% polyamide BCF ECONYL®
Area of use		Heavy Use
Impact noise reduction	EN-ISO 717-2	$\Delta Lw = \ge 28 \text{ dB}$
Tested flammability standard	EN 45545-2	HL3*
Slip resistance	EN 13893	µ ≥ 0.30
Body voltage	ISO 6356	< 2 kV
Thermal resistance	ISO 8302	0.108 m <sup>2</sup> .K/W

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com Full technical specifications are available on page 72.



#### Suggested design styles





### **coral**<sup>®</sup> move vision FR

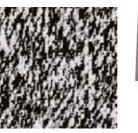
### **DESIGN FREEDOM**

Whilst offering the same technical characteristics as Coral Move FR, Coral Move Vision FR uses a digital printing process. This allows for far greater customisation possibilities in terms of design and colour.











The digital printing process makes non-linear type designs possible, is perfect for more complicated designs or when there are many different colourways within a design. Pantone and RAL colours can be matched.

You can work with our dedicated design team on an individual project basis to ensure that the resulting Coral Move Vision FR carpet meets your precise design and colour requirements.

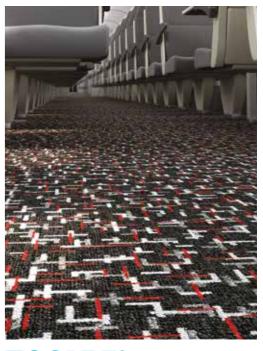














Description		Tufted cut pile carpet
Dimensions	EN-ISO 24341	Roll width 185cm Roll length ≤ 27.5m
Total thickness	ISO 1765	8.0mm ± 10%
Pile installation weight		750g/m²
Yarn		100% polyamide BCF ECONYL®
Area of use		Heavy Use
Impact noise reduction	EN-ISO 717-2	$\Delta Lw = 28 \text{ dB}$
Tested flammability standard	EN 45545-2	HL3*
Slip resistance	EN 13893	µ ≥ 0.30
Body voltage	ISO 6356	< 2 kV
Thermal resistance	ISO 8302	0.108 m <sup>2</sup> .K/W

\*EN45545-2 testing has been carried out on various different substrates. This is the highest achieved result. Please ask for a full overview of specific results on different substrates by emailing transport@forbo.com

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com

Full technical specifications are available on page 72.

### CORAL MOVE VISION FR - CUSTOM DESIGN SERVICE

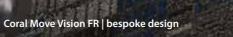
Create your own masterpiece using our custom design service alongside our digital printing technology. Our experienced designers can help at any stage in the design process, depending on what involvement you require.

If you are looking for design ideas, re-colouration of existing designs or help with the development of a unique design that works perfectly with your rail interior design scheme, then we have the resource to help.

### STEPS IN THE CUSTOM DESIGN PROCESS:



### CORAL MOVE VISION FR OFFERS REAL DESIGN FREEDOM



Coral Move Vision FR

CORAL MOVE FF



### fleet<sup>®</sup> FR

The robust, hard wearing properties of Fleet FR wall and ceiling covering, meets the demands of high traffic rail environments that require long lasting performance and ease of maintenance.

- Durable, high quality polyester fibres
- EN45545-2 (R1) : HL2\*
- Reduces ambient noise, making it ideal for use in places that require a tranquil atmosphere and a minimum of noise distraction – sound absorption 4000 Hz : αw = 0.25
- Lightweight at 550g/m<sup>2\*\*</sup>
- Self-adhesive backing allows for quick and easy installation, saving time and money
- Custom colouration can match NCS/RAL colours, to complement any design scheme

Please ensure that 'FR' is clearly noted on all orders.

\*(EN45545-2 testing has been carried out on a variety of different substrates. For details on all specific test results please email Forbo at transport@forbo.com \*\*This weight includes adhesive.

### WALL & CEILING COVERING



FLEET FR VALL/CEILING COVERING



### **fleet**<sup>®</sup> FR

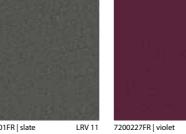
Fleet FR is available in the 8 colourways as shown below or can be manufactured in custom colourways to match any NCS/RAL reference.





7200282FR | light grey LRV 31 7200208FR | olive LRV 11 7200286FR | red

LRV 7





7200202FR | mercury

Full technical specifications are available on page 73.



LRV 20



LRV 6

Description		Wall and ceiling covering
Dimensions	ISO 24341	Roll width 200 cm Roll length 25 lm
Thickness (under 0.1 kPa)	NF EN 29073-2	3mm
Weight with adhesive	NF EN 29073-1	550g/m <sup>2</sup>
Composition	NF ISO 1833-11	Polyester fibres + PSA rubber based adhesive
Peeling strength	NF EN 1372	≥ 0.5 N/mm
Resistance to pilling (Lisson Test)	NF EN ISO 12951	3
Collection size		8
Impact noise reduction	NF EN ISO 717-2	$\Delta L_w = 17 \text{ dB}$
Fire test	EN 45545-2 (R1)	HL2*

\*EN45545-2 (R1) testing has been carried out on various different substrates. For details on all specific test results please email Forbo at transport@forbo.com

Please note: Digital representations may vary from actual product. Please order a physical sample to see the full effect by emailing: transport@forbo.com

### **PRO-FIT** – THE INNOVATIVE INSTALLATION SYSTEM

Pro-Fit is an adhesive free installation system, improving efficiencies in time, cost and operation throughout the life of the vehicle. It comprises an integral velour backing to the floor covering and a special fire retardant hook tape adhered to the sub-floor.

The Pro-Fit system is available for use with:

- Coral FR entrance systems (Classic FR/Brush FR/Welcome FR)
- Coral Move FR/Coral Move Vision FR
   broadloom carpet
- Tessera FR broadloom carpet (Nexus FR/Helix FR/Alignment FR)

Customers who use this system experience far shorter first installation times (normal adhesive installations require 24 hours drying time). For renewals the advantages are even greater as it is simply 'pull up the old and drop down the new floor covering' that is required. No glue removal, no difficult sanding, no drying time.

These advantages over traditional fully bonded adhesive systems mean cost savings for train operators as a result of:

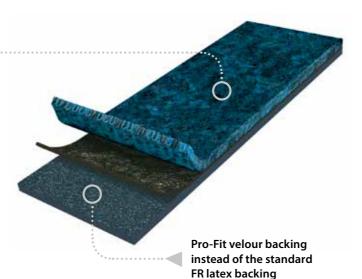
- Quicker and easier installation and replacement
- No need to wait for the adhesive to dry
- No waiting time before the carpet can be walked on
- Immediate use of the train after installation

Please ensure that 'FR Pro-Fit' is clearly noted on all orders.

For example 'Coral Classic 4751 FR Pro-Fit'. The Pro-Fit velour backing cannot be added to latex backed material after production.

Detailed Pro-Fit installation instructions are available on our website at: **www.forbo-flooring.com/transport** 











### **BESPOKE DESIGN SERVICE**

The floor covering is a crucial element of any rail interior design; it creates the first impression and sets the tone. Whether you are looking to recreate a logo or design feature, match that perfect colour for your interior or visualise an entire rail flooring design scheme, we have the knowledge and technology to help and guide you every step of the way.

Our design team can offer support, guidance and advice based on their experience of rail design providing step by step assistance though the creative process from initial brief to approved samples.





### coral<sup>®</sup> FR

Custom colourways are an option for each of the Coral FR entrance flooring system products.

### coral<sup>®</sup> logo FR

Inset logos can be designed to match your requirements.

### **flotex**<sup>®</sup> vision FR

Whether you are looking for a new colourway in an existing design or a bespoke design, our design team can help.

### marmoleum<sup>®</sup> FR<sup>2</sup> marmoleum<sup>®</sup> striato FR

Re-colour any of the existing Marmoleum FR<sup>2</sup>/ Striato FR designs.

### coral<sup>®</sup> move FR

Each Coral Move FR carpet is bespoke. Different tufting styles give very different overall aesthetics.

### **coral**<sup>®</sup> move vision FR

The digital printing process allows for extensive customisation possibilities in terms of design and colour.

### tessera<sup>®</sup> FR

Re-colour any of the Tessera FR designs to tie into your interior design colour scheme.

### fleet<sup>®</sup> FR

Custom colouration (matching to Pantone/RAL) is available for the wall and ceiling, Fleet FR product.

For all enquiries please contact your local **Transport Key Account Manager to find out** more or email: transport@forbo.com

### SERVICES

In addition to the breadth of our rail portfolio combined with the flexibility in creating custom design and colour solutions tailored for your project, we realise that service is equally important in ensuring optimal efficiencies in time and cost management.

Forbo offer a range of services for both new build and refurbishment projects that ensure maximum efficiencies from delivery to storage, from labelling to packaging and from installation to operation.



Cutting to size and shape – In order to save time and cost during installation, we are able to cut to specific roll lengths or to detailed floor plans, so that material can be dropped easily into place.

- Any geometry (including steps)
- *Highly accurate in-house cutting technology*
- Drawing plans can be imported for cutting e.g. DWG, DXF files



#### **BESPOKE** LABELING

**Bespoke labelling** – We offer a fully customized labelling service for all products tailored to your specifications, whether that be, part numbers, project references or barcodes for example. We'll agree with you what information is required and will then create something unique for your project.



**Packaging** – Whether you need all deliveries on a specific pallet size or type, specific boxes, crates, or custom wrapping, Forbo will make sure that the packaging is to your specification and satisfaction.



**Material scheduling** – Appreciating that the flooring specifications and requirements for each carriage or car-set can vary, we can help by grouping together all materials specific to your build program ensuring the right materials find the right location. For example, this could include, the entrance matting for the vestibule area along with the saloon floor covering and any accessories such as Pro-Fit tape, all pre-cut, labelled and packaged as a kit.



Just in time logistics – We understand that customers do not wish to be burdened with huge stocks of floor coverings for the duration of the project. Working to an agreed schedule of requirements Forbo will ensure that only the products required are delivered in accordance with your program.

Whatever your requirements are, we will work with you to ensure that the project runs smoothly and returns the maximum efficiencies in time and cost.

### TECHNICAL SPECIFICATIONS - CORAL FR

### **TECHNICAL SPECIFICATIONS -MARMOLEUM FR<sup>2</sup> & STRIATO FR**

**Technical specifications** 

°°€3 ≥0.30

°λ<sub>23</sub>

Slip resistance

Body voltage

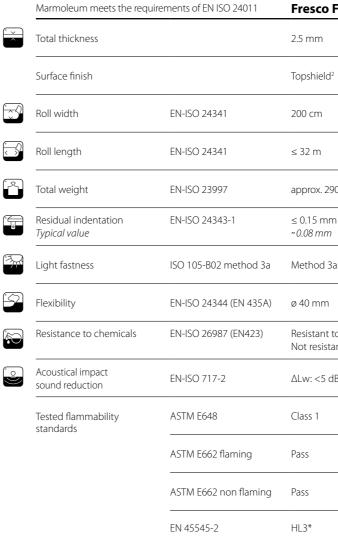
Thermal conductivity

	Technical sp Coral meets the r	ecifications equirements of EN 1307	Coral classic FR	Coral brush FR	Coral duo FR	Coral welcome FR
	Total thickness	ISO 1765	8.5 mm	9 mm	9 mm	8 mm
	Roll width	EN-ISO 24341	185 cm	185 cm	185 cm	190 cm
	Roll length	EN-ISO 24341	27.5 m	27.5 m	27.5 m	27.5 m
R	Total weight	ISO 8543	3400 g/m <sup>2</sup>	3400 g/m <sup>2</sup>	3000 g/m <sup>2</sup>	2200 g/m <sup>2</sup>
	Pile installation weight	ISO 8543	865 g/m <sup>2</sup>	920 g/m²	670 g/m <sup>2</sup>	780 g/m <sup>2</sup>
	Pile thickness	ISO 1766	6.0 mm	6.0 mm	6.0 mm	5.0 mm
	Pile material		100% polyamide-BCF solution dyed	100% regenerated Econyl polyamide	100% polyamide of which 66% is regenerated Econyl polyamide	100% regenerated Econyl polyamide
R	Light fastness	EN-ISO 105/B02	7-8	> 5	> 5	> 5
<u>γ</u> «109Ω	Electrical resistance	ISO 10965	> 10 <sup>9</sup> Ω	> 10 <sup>9</sup> Ω	> 10 <sup>8</sup> Ω	> 10 <sup>9</sup> Ω
	Impact noise reduction	EN-ISO 717-2	$\Delta Lw = approx. 31 dB$	$\Delta Lw = approx. 32 dB$	$\Delta Lw = approx. 29 dB$	$\Delta Lw = approx. 27 dB$
	Area of use		Heavy Use	Heavy Use	Heavy Use	Heavy Use
	Tested flammability	EN 45545-2	HL2*	HL3*	HL2*	HL3*
	standards	ASTM E.648 ASTM E.662	Class 1 Pass	Class 1 Pass	Class 1 Pass	
DS	Slip resistance	EN 13893	µ ≥ 0.30	µ ≥ 0.30	µ ≥ 0.30	µ ≥ 0.30
Z,	Body voltage	ISO 6356	< 2 kV	< 2 kV	< 2 kV	< 2 kV
	Thermal resistance	ISO 8302	0.13 m <sup>2</sup> .K/W	0.093 m <sup>2</sup> .K/W	0.140 m <sup>2</sup> .K/W	0.090 m <sup>2</sup> .K/W

\*EN45545-2 testing has been carried out on different substrates/adhesives. This is the highest achieving result. For a full overview of specific results on aluminium and plywood subfloors please ask.



Forbo Flooring Systems does its best to ensure that the contents of these technical documents are accurate at the time of publication. However for up to date technical specifications please refer to our website at: www.forbo-flooring.com/transport



EN 13893

EN 1815

EN 12524

\*EN45545-2 testing has been carried out on different substrates/adhesives. This is the highest achieving result. For a full overview of specific results on aluminium and plywood subfloors please ask.

Forbo Flooring Systems does its best to ensure that the contents of these technical documents are accurate at the time of publication. However for up to date technical specifications please refer to our website at: www.forbo-flooring.com/transport

Marmoleum FR <sup>2</sup> : Concrete FR <sup>2</sup> Fresco FR <sup>2</sup> /Real FR <sup>2</sup> /Vivace FR <sup>2</sup>	Marmoleum Striato FR
2.5 mm	2.5 mm
Topshield <sup>2</sup>	Topshield <sup>2</sup>
200 cm	200 cm
≤ 32 m	≤ 32 m
approx. 2900 g/m²	approx. 2900 g/m²
≤ 0.15 mm ~0.08 mm	≤ 0.15 mm ~ <i>0.08 mm</i>
Method 3a: blue scale minimum 6	Method 3a: blue scale minimum 6
ø 40 mm	ø 40 mm
Resistant to diluted acids, oils, fats and to the Not resistant to prolonged exposure to alkali	
ΔLw: <5 dB	ΔLw: <5 dB
Class 1	Class 1
Pass	Pass
Pass	Pass
HL3*	HL3*
µ ≥ 0.30	µ ≥ 0.30
$\leq 2 \text{ kV}$	≤ 2 kV
0.17 W/m·K	0.17 W/m·K



TECHNICAL SPECIFICATIONS

### TECHNICAL SPECIFICATIONS - FLOTEX FR

### TECHNICAL SPECIFICATIONS - TESSERA FR

<b>Technical specification</b> Flotex meets the requirements of		Flotex FR Flotex vision FR	
Total thickness	ISO 1765	3.3 mm	
Roll width	EN-ISO 24341	200 cm	
Roll length	EN-ISO 24341	30 m	
Total weight	ISO 8543	1225 g/m <sup>2</sup>	
Pile installation weight		250 g/m <sup>2</sup>	
Pile thickness	ISO 1766	approx. 2 mm	
Pile material		100% polyamide	
Dimensional stability	ISO 2551	≤ 0.20%	
Light fastness	EN-ISO 105/B02	$\ge 6$ (Colour FR) $\ge 5$ (Vision FR)	
Electrical resistance	ISO 10965	$\geq 10^{9}\Omega$	
Impact noise reduction	EN-ISO 717-2	$\Delta Lw \ge 22 dB$	
Area of use		Heavy Use	
Tested flammability standards	EN 45545-2	HL2*	
	ASTM E.648 ASTM E.662	Class 1 Pass	
Slip resistance	EN 13893	μ≥0.30	
Body voltage	ISO 6356	< 2 kV	
Thermal resistance	ISO 8307	0.041 m <sup>2</sup> .K/W	

\*EN45545-2 testing has been carried out on different substrates/adhesives. This is the highest achieving result. For a full overview of specific results on aluminium and plywood subfloors please ask.

Forbo Flooring Systems does its best to ensure that the contents of these technical documents are accurate at the time of publication. However for up to date technical specifications please refer to our website at: www.forbo-flooring.com/transport



Technical specification Tessera meets the requirements of the requ		Tessera nexus FR	Tessera helix FR	Tessera alignment Fl
Total thickness	ISO 1765	5.4 mm	6 mm	6 mm
Roll width	EN-ISO 24341	185 cm	185 cm	185 cm
Roll length	EN-ISO 24341	27.5 m	27.5 m	27.5 m
Total weight	ISO 8543	2400 g/m <sup>2</sup>	2500 g/m <sup>2</sup>	2500 g/m <sup>2</sup>
Pile installation weight		515 g/m <sup>2</sup>	740 g/m <sup>2</sup>	730 g/m <sup>2</sup>
Pile thickness	ISO 1766	3.2 mm	4 mm	4 mm
Pile material		100% polyamide	100% polyamide	100% polyamide
Light fastness	EN-ISO 105/B02	≥6	≥6	≥6
Electrical resistance	ISO 10965	$> 10^{\circ}\Omega$	> 10º Ω	> 10 <sup>9</sup> Ω
Impact noise reduction	EN-ISO 717-2	$\Delta Lw = 25 \text{ dB}$	$\Delta Lw = 26 \text{ dB}$	$\Delta Lw = 25 \text{ dB}$
Area of use		Heavy Use	Heavy Use	Heavy Use
Tested flammability standards	EN 45545-2	HL2*	HL2*	HL2*
	ASTM E.648 ASTM E.662	Class 1 Pass	Class 1 Pass	Class 1 Pass
Slip resistance	EN 13893	µ ≥ 0.30	µ ≥ 0.30	µ ≥ 0.30
Body voltage	ISO 6356	< 2 kV	< 2 kV	< 2 kV

\*EN45545-2 testing has been carried out on different substrates/adhesives. This is the highest achieving result. For a full overview of specific results on aluminium and plywood subfloors please ask.

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# TECHNICAL SPECIFICATIONS – CORAL MOVE FR & CORAL MOVE VISION FR

	<b>Technical specifications</b> Coral meets the requirements of EN 1	307	Coral move FR Coral Move Vision FR
	Total thickness	ISO 1765	8 mm
	Roll width	EN-ISO 24341	185 cm
	Roll length	EN-ISO 24341	27.5 m
R	Total weight	ISO 8543	3000 g/m <sup>2</sup>
	Pile installation weight		750 g/m <sup>2</sup>
	Pile thickness	ISO 1766	5.5 mm
	Pile material		100% polyamide BCF ECONYL®
	Light fastness	EN-ISO 105/B02	≥ 6
	Electrical resistance	ISO 10965	≥ 10°Ω
	Impact noise reduction	EN ISO 717-2	$\Delta Lw \ge 28 \text{ dB}$
	Area of use		Heavy Use
	Tested flammability standards	EN 45545-2	HL3*
S S S	Slip resistance	EN 13893	µ ≥ 0.30
Þ	Body voltage	ISO 6356	< 2 kV
	Thermal resistance	ISO 8302	0.108 m².K/W

\*EN45545-2 testing has been carried out on different substrates/adhesives. This is the highest achieving result. For a full overview of specific results on aluminium and plywood subfloors please ask.



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Technical specifications

		Fleet FR
Description		Wall and ceiling covering
Roll width	EN-ISO 24341	200 cm
Roll length	EN-ISO 24341	25 lm
Composition	NF ISO 1833-11	Polyester fibres + PSA rubber based adhesive
<sup>-</sup> hickness (under 0.1 kPa)	NF EN 29073-2	3 mm
Veight with adhesive	NF EN 29073-1	550 g/m <sup>2</sup>
Peeling strength	NF EN 1372	≥ 0.5 N/mm
Resistance to pilling Lisson test)	NF EN ISO 12951	3
Colour fastness		
Colour fastness to light	NF EN ISO 105-B02	≥6
Colour fastness to rubbing: dry	NF EN ISO 105-X12	≥4/5
Colour fastness to rubbing: wet	NF EN ISO 105-X12	≥4/5
Colour fastness to rubbing: organic solvent	NF EN ISO 105-D02	≥ 5
mpact noise reduction	EN ISO 717-2	$\Delta L_{w} = 17 \text{ dB}$
ound absorption at 4000 Hz	ISO 354	aw = 0.25
ire test	EN 45545-2 (R1)	HL2*

For details on all specific test results please email Forbo at transport@forbo.com

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### **INSTALLATION**, **CLEANING & MAINTENANCE**

#### Installation Guide

You can find our latest rail specific installation guide for the full portfolio of floor, wall and ceiling coverings on our website: www.forbo-flooring.com/transport

Alternatively you can scan the QR code to view and download the Rail installation guide pdf.



#### **Cleaning & Maintenance Guide**

You can find our latest rail specific cleaning and maintenance guide for the full portfolio of floor, wall and ceiling coverings on our website: www.forbo-flooring.com/transport

Alternatively you can scan the QR code to view and download the Rail cleaning and maintenance guide.



Any gueries regarding installation or cleaning and maintenance guidelines for the rail portfolio of floor and wall products please contact your local Key Account Manager or contact us:

Email: transport@forbo.com Tel: +44 (0)1773 744121



### **FURTHER INFORMATION**

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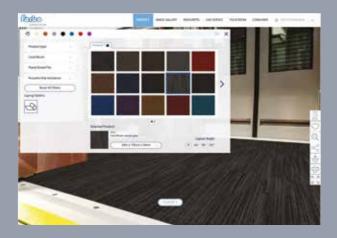


#### Sample service

transport@forbo.com. We aim to dispatch transport requests same day/next day whenever possible.

For more information about any of the products or services offered by Forbo Flooring Systems, contact us on:

Email: transport@forbo.com Website: www.forbo-flooring.com/rail Tel: +44 (0)1773 744121





### **TRANS**PRESS

#### **Coral Move FR - Customise Your Saloon Carpet**





### WE BELIEVE IN CREATING BETTER ENVIRONMENTS

From how they're made to how they perform, we make outstanding floors that are truly sustainable. That's because our floors are good for people, good for their applications and good for the environment. So, from the train that they're in, to the world outside, we're helping our customers work, live, travel and relax in better environments.

#### It's about the things you can't see

A Forbo floor is always beautiful and stylish to look at. A floor that's comfortable to live, work and play on. But looks aren't everything; often, it's the things you can't see that really matter. We believe true sustainability is about creating links of shared responsibilities and values between all stakeholders.

#### From how it's made, our footprint...

From how we run our factories to how we choose our ingredients, the way we make our floors is a big part of how we meet our mission to create better environments.

We reduce, reuse, recycle and renew whenever possible. We also make our flooring in clean, efficient factories, powered by 100% renewable electricity.

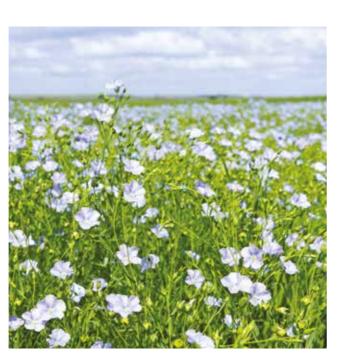
#### ... to how it performs, your footsteps...

We include the whole life of a floor when we think about its sustainability performance. Which means we make sure our floors start performing from the moment they're installed.

#### **Creating Better Environments**

We'll only keep Creating Better Environments if we keep improving and innovating our products and services.

So, while we're proud of our existing certifications, we'll always be working to achieve better results – for you and the environment.





#### **Coral FR**

Coral FR entrance flooring can stop up to 95% of dirt being walked into your rail vehicles. Entrance systems can reduce your cleaning bills by up to 65% thus saving you money, energy and chemical cleaners. They also reduce your environmental impact.

From old carpet fluff to abandoned fishing nets, many of our Coral FR collections are made from ECONYL® – a high quality yarn made from 100% regenerated polyamide.



We make Coral FR in a factory that runs entirely on green electricity and sends virtually zero waste to landfill.

#### **Flotex FR**

The unique design of Flotex FR means it releases twice as many allergens on cleaning than standard carpet. Flotex is proven to have a positive effect on the lives of allergy sufferers and is the only textile floor covering to receive the prestigious Allergy UK Seal of Approval<sup>™</sup>.

Our Flotex FR flooring has an impervious backing making it suitable for wet cleaning and it often just needs water and standard cleaning materials (without chemicals).



Recent research by Cleaning Research

International has shown that the cleanability and durability of flocked floor coverings are unsurpassed amongst textile floor coverings which, along with the allergy benefits makes them particularly suited to high-traffic spaces.

#### Marmoleum FR<sup>2</sup>

Marmoleum FR<sup>2</sup> is made from 71% natural raw materials, 29% of which are rapidly renewable and will grow back within ten years. It is also made with 44% recycled material content, to reduce the need for virgin raw materials.

At the end of its long life, Marmoleum FR<sup>2</sup> is 100% biodegradable under controlled conditions.



We finish Marmoleum FR<sup>2</sup> and Striato FR with Topshield<sup>2</sup>, which, together with its natural bacteriostatic properties means the floor is hygienic and needs less cleaning with less harmful chemicals.

#### Tessera FR

We're reducing the amount of virgin materials we use. For example, instead of throwing away yarn ends, we rewind them and tuft them into our Tessera carpet tiles.

All tufted Tessera carpets are manufactured using 100% renewable energy (electricity & biogas).

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 Forbo Flooring Systems' sales organisations worldwide have a certified Quality Management System in accordance with ISO 9001. All Forbo Flooring Systems' manufacturing operations have a certified Environmental Management System in accordance with ISO 14001.



#### What to do now?

For more information about any of the products and services offered by Forbo Flooring Systems, to request samples/ brochures or a visit then contact us:

Email: transport@forbo.com Website: www.forbo-flooring.com/rail Tel: +44 (0)1773 744121

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#### UK & all other countries

Forbo Flooring UK Limited High Holborn Road Ripley Derbyshire DE5 3NT UK T: +44 (0) 1773 744121 E-mail: transport@forbo.com www.forbo-flooring.com/rail 
 France

 Forbo Sarlino SAS

 63, rue Gosset

 BP 62717

 51055 Reims Cedex

 France

 T : +33 2 47 29 85 39

 www.forbo-flooring.fr

#### Germany

Forbo Flooring GmbH Steubenstraße 27 D-33100 Paderborn Deutschland T: +49 5251 1803-0 www.forbo-flooring.de

#### Spain

Forbo Pavimentos S.A. Pasaje Bofill 13-15 E-08013 Barçelona Spain T: +34 932 090 793 www.forbo-flooring.es

#### USA

Forbo Flooring NA Humboldt Industrial Park 8 Maplewood Drive PO Box 667 Hazleton, PA 18202 USA T: +1-800-842-7839 www.forboflooringna.com

