

altro

Designed for possibilities.
Made for people.



Rail: floors guide

Transforming spaces
in the global rail industry

altro.com

Introduction

Altro have been creating and manufacturing high quality transport flooring for almost 60 years. Driven to transform everyday spaces for the people who use them, design-led innovation is at the heart of everything we do. Working closely with the industry's leading rail builders and operators globally, we aim to create environments for passengers and staff which are inviting, safe and compliant.

Altro consider all aspects of the journey a vehicle floor takes throughout its lifetime; both in service and during manufacture and maintenance.

Partnering with manufacturers and operators, we provide solutions designed to enhance passenger experience and add efficiencies to assembly and maintenance.

Our collaborative approach allows customers to create rail interiors that are safe, durable, comfortable and visually appealing for passengers.

We share our customers' vision of making rail cars more appealing, convenient and environmentally-conscious setting to travel in. We will help you to deliver the on board experience that modern passengers demand.



Engineered for performance

We know that you expect the very best in engineering for every component of your rail car, flooring included. We're confident that each feature of our rail floors performs to the highest specification.

Slip-resistant

Our products contain a variety of aggregates, which are embedded into the flooring to provide excellent slip resistance to safeguard passenger footing and ensure they can move through a train from entrance vestibules and through carriages safely no matter what the outside weather conditions may be.

Durable

Trains incur extremely high levels of concentrated foot traffic, so hard-wearing durability is a necessity of any floor. Altro's highly resilient transport floors are designed to withstand the most demanding service regimes – a quality backed up by guarantees that cover the life expectancy of the vehicle.

Lightweight

Vinyl flooring is significantly lighter than alternative materials commonly used in passenger vehicles. The potential reduction in weight that can be achieved by selecting an Altro product can make a positive contribution to greater fuel economy and general wear.

Impermeable

If contaminants are brought on board a train, Altro transport floors continue to perform. The construction of our products, combined with heat welded installation techniques, makes them impervious to the ingress of water and dirt; protecting subfloors from damage and preventing the need for costly repairs.

Colour retentive

All Altro rail floors are tested to ensure UV stability. This ensures that areas exposed to greater levels of sunlight maintain their appearance over time. Our floors also support time-sensitive cleaning regimes to preserve the long-term visual appeal of vehicle interiors.



Did you know?

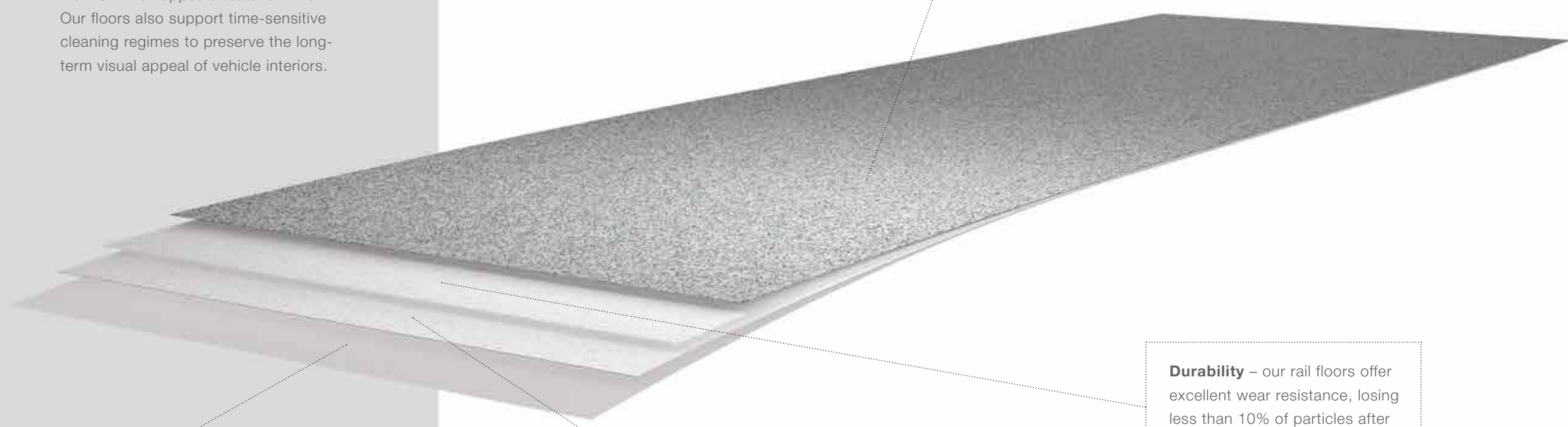
Altro Transflor Tungsten™ is compliant to EN 45545-2.

Slip resistance – all our rail floors achieve a PTV of at least ≥ 36 , meaning that your passengers will have a one in a million chance of a slip, guaranteed for the lifetime of the floor. Altro transport floors are engineered with aggregates throughout the thickness of the floor to ensure a sustained slip resistance.

Durability – our rail floors offer excellent wear resistance, losing less than 10% of particles after our vigorous laboratory tests.

Solutions – all Altro transport floors are available in our self-adhesive and pre-cut kit solutions.

Compliance – Altro rail floor fire, smoke and toxicity performance ratings are guaranteed on all common subfloors.



Compliance

No matter where in the world you are, we have a range to meet your country's regulations.

When specifying interior components we understand that compliance and safety are top priorities. Our rail products are designed to meet the required fire, smoke and toxicity standards for different vehicle classes and rail applications around the world. This is achieved without any compromise to the slip resistant qualities our floors are renowned for and without the need for supplementary treatments to protect the surface layer from wear or discolouration.

EN 45545-2

Altro Transflor Tungsten™ is compliant to EN 45545-2, making it ideal for those projects where PVC isn't the preferred option. Altro Transflor Tungsten™ has been specified in a wide range of application areas, from metros to destination stations, to even cable cars!

BS 6853

Altro Transflor Met is compliant to BS 6853 1b. This means that it's a great choice for above-ground services around the world, with its choice of finishes and the option to create an entirely bespoke design.



Altro Transflor Tungsten



Safety

Passengers using rail networks naturally expect to travel in comfort and safety. As the inventors of safety flooring, Altro create solutions that directly address the costly risks presented by potential slips, trips and falls. Our products are designed to help protect against the effects that external contaminants, such as water, ice, dust and even spillages, and general surface wear can commonly have on passenger safety.

Exposure to contaminants is unavoidable for any vehicle with passengers boarding from different climates and environments. To combat this, Altro flooring contains a variety of aggregates which create additional surface friction to safeguard passenger footing.

Maintaining contact

The presence of surface contaminants – in even the smallest amounts – can reduce contact between the floor and the sole of passengers' shoes. When subjected to the downward pressure of passengers' feet, the aggregates in Altro floors are able to penetrate surface contaminants to maintain the contact between the floor and shoe.

Sustained performance

At peak times, passengers will often be standing while the train is in motion, making effective slip-resistance essential. Many alternative materials depend on grooved surfaces to provide this, however, these are prone to wear and can require regular maintenance to ensure performance. The natural resilience of the mineral aggregates used in Altro rail floors actually enhances durability and provides slip resistance for the life of the product.

Design possibilities

Create an impression

We know that passengers expect to feel as comfortable and safe as they would in their own personal transport – so first impressions count. We'll work with you to create an interior that looks as good as it performs.

Creative freedom

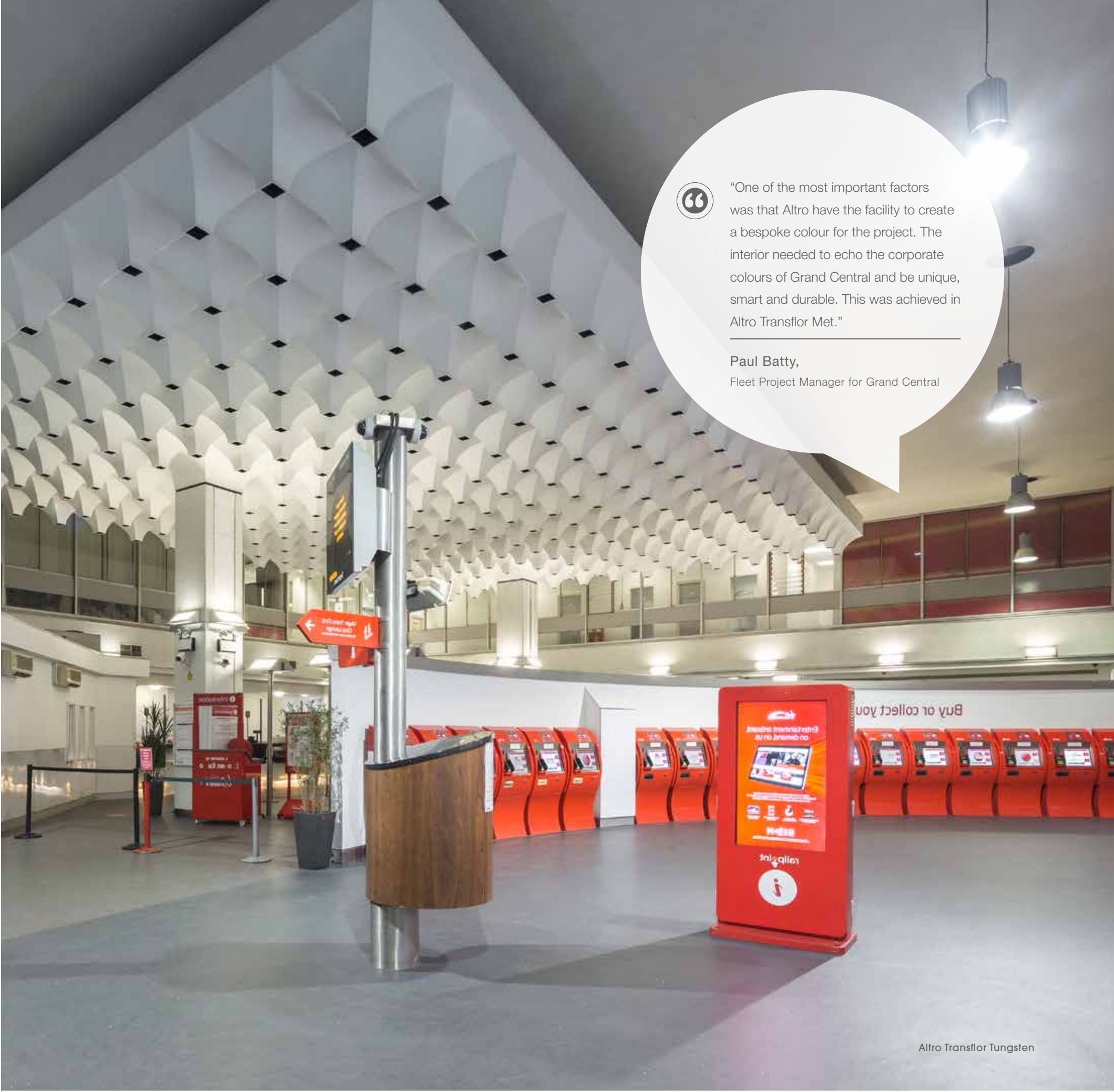
Each range of Altro rail flooring has been developed with the insight of independent vehicle interior designers to better meet the needs of builders and operators alike. Product ranges offer thoughtful colour palettes to suit various vehicle types for maximum choice and appeal. Designs integrate practicality, supporting cleaning regimes for high foot traffic areas, as well as giving a broad range of colour options. And if you want to achieve something different, we have the ability to create colours and designs bespoke,* opening up a world of possibilities.

*Conditions apply, please speak to one of our consultants for more information.



Did you know?

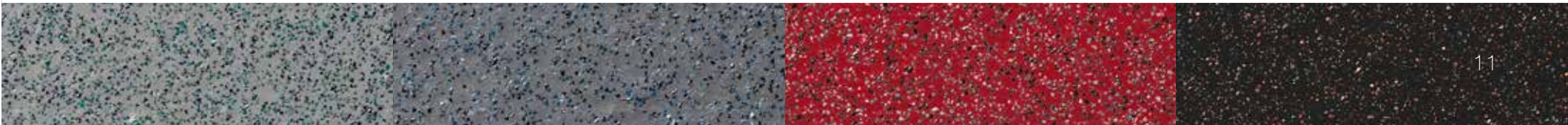
Our space visualiser lets you place any of our products in a vehicle environment to help you make the perfect choice.



“One of the most important factors was that Altro have the facility to create a bespoke colour for the project. The interior needed to echo the corporate colours of Grand Central and be unique, smart and durable. This was achieved in Altro Transflor Met.”

Paul Batty,
Fleet Project Manager for Grand Central

Altro Transflor Tungsten



Vehicular floor plan

To address the broad range of application areas commonly found on trains, Altro have created a variety of products and solutions that can be flexibly used in a variety of different spaces. Considering all aspects of installation, appearance, performance and maintenance, we can support OEMs and operators to achieve the best results for their particular requirements.

Check how your favourite product would look with our 3D Space visualiser

altro.co.uk/space-visualiser

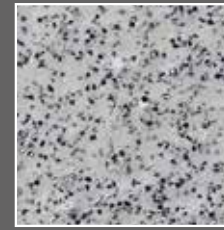


- 1. Vestibule
Altro Transflor Tungsten™ Breeze LRV 18
- 2. Main carriage
Altro Transflor Tungsten Breeze LRV 18
- 3. Buffet car customer area
Altro Transflor Tungsten Breeze LRV 18
- 4. Toilet
Altro Transflor Met™ Storm LRV 15

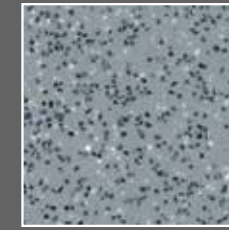


Altro Transflor Tungsten™

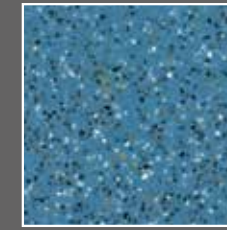
An acrylic, HL-2 compliant solution for all applications.



Whirlwind
TUN20910
WR79 / A1M191 / LRV 38



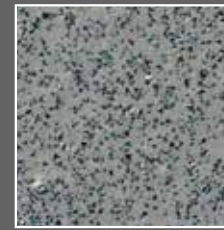
Fog
TUN203001
WR81 / A1M81 / LRV 27



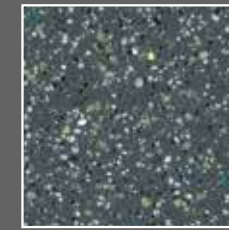
Azure
TUN203007
WR249 / A1M249 / LRV 15



Sleet
TUN20907
WR231 / A1M73 / LRV 10



Gust
TUN20908
WR81 / A1M81 / LRV 23



Storm
TUN203009
WR82 / A1M82 / LRV 16



Breeze
TUN20909
WR86 / A1M86 / LRV 18



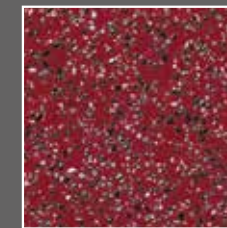
Midnight
TUN203005
WR72 / A1M72 / LRV 11



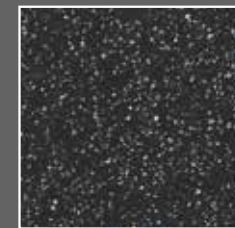
Supercell
TUN20912
WR473 / A1M308 / LRV 15



Arcus
TUN20906
WR101 / A1M72 / LRV 11



Sprite
TUN20911
WR248 / A1M238 / LRV 11



Vortex
TUN20905
WR277 / A1M100 / LRV 6



Firestorm
TUN20904
WR100 / A1M100 / LRV 5

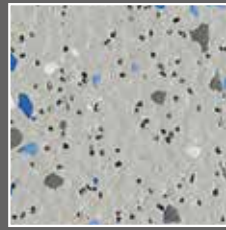


LRV = Light Reflectance Value
A1M = Mastix
WR = Weld rod

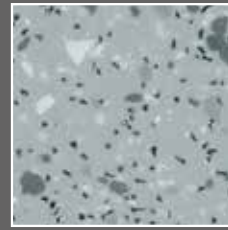


Altro Transflor Met™

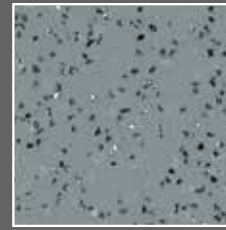
A versatile solution with a proven record of more than a decade.



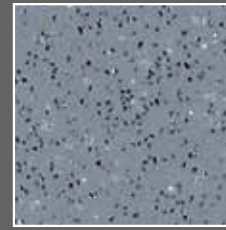
Cloud
MET2504
WR79 / A1M191 / LRV 43



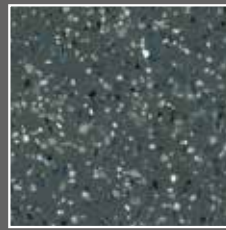
Civic
MET2579
WR04 / A1M85 / LRV 35



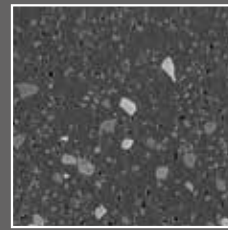
Pewter Grey
MET2539
WR81 / A1M81 / LRV 25



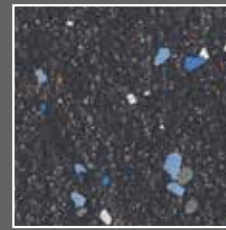
Grampian
MET2584
WR84 / A1M84 / LRV 23



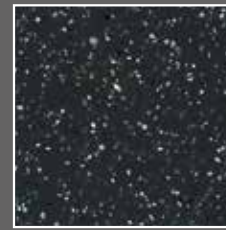
Storm
MET25903
WR82 / A1M82 / LRV 15



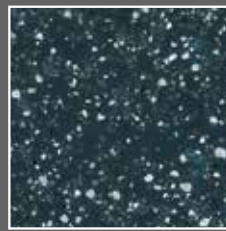
Fossil
MET2567
WR232 / A1M82 / LRV 12



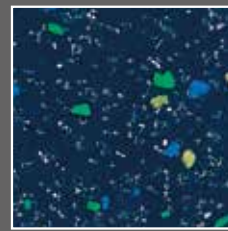
Shadow
MET2505
WR101 / A1M72 / LRV 10



Black
MET25892
WR100 / A1M100 / LRV 7

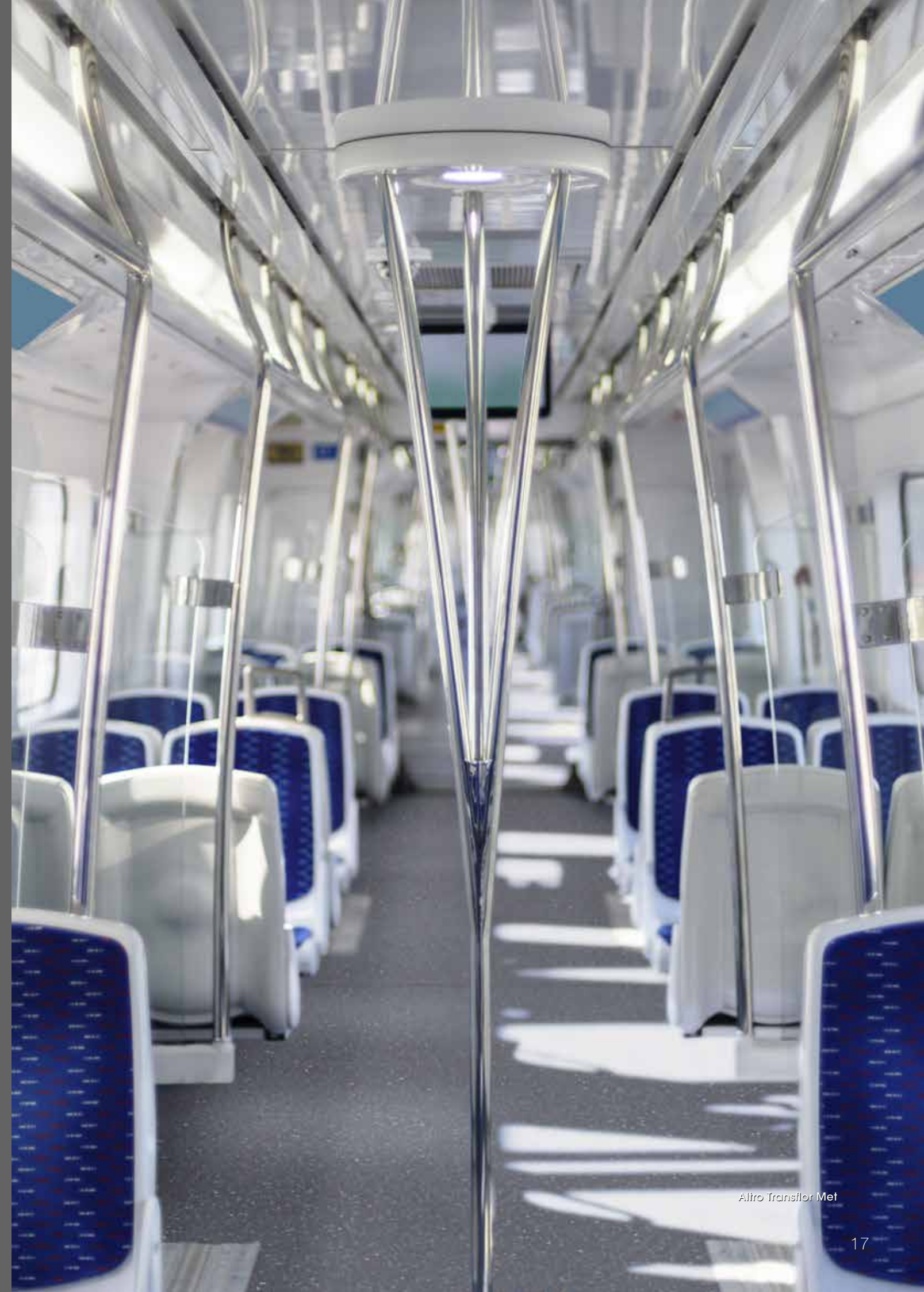


Midnight
MET25421
WR72 / A1M72 / LRV 9



Quasar Blue
MET2532
WR73 / A1M73 / LRV 7

i LRV = Light Reflectance Value
A1M = Mastic
WR = Weld rod



Altro Transflor Met

Technical table

Flooring type	EN 13845 ASTM F1303
Slip resistance	BAM PTV DIN 51130 EN 13845 EN 13893 ASTM D2047
Thickness	EN ISO 24346
Wear layer	EN ISO 24340
Flexibility	EN ISO 24344 ASTM F1303
Weight	EN ISO 23997
Roll dimensions	EN ISO 24341
Light fastness	EN ISO 105-B02 ASTM F1515
Wear resistance	EN 13845 ASTM C501
Indentation	EN ISO 24343-1 ASTM F970
Fire performance	EN 45545-2 BS 6853 DIN 5510 ASTM E648 ASTM E662 NFPA 130
Chemical resistance*	EN ISO 26987
Castor chair abrasion	EN 425
Electrical behaviours	EN 1815
Sound insulation	ISO 140-8

*Caution ketone / aromatic solvents. Please contact Altro for further technical advice regarding staining and chemical resistance

Altro Transflor Tungsten	Altro Transflor Met
Safety flooring	Safety flooring
Extremely slip resistant ≥ 40 R11 ESf DS ≥ 0.6	Very slip resistant ≥ 36 R10
2 mm / 0.08"	2.5 mm / 0.10"
2 mm / 0.08"	2.5 mm / 0.10"
Pass	Pass
2.7 kg/m² / 4.98lb/sy	3.2 kg/m² / 5.87lb/sy
2 m x 20 m - 40 m² 6'7" x 65'7"	2 m x 20 m - 40 m² 6'7" x 65'7"
≥ 6	≥ 6
≤ 10% particles lost over 50,000 cycles	≤ 10% particles lost over 50,000 cycles
≤ 0.10 mm	≤ 0.10 mm
HL2 Category Ia SF3 / FED ≤ 1 Class A Ds (1.5) ≤ 100 Ds (4) ≤ 200 Pass	Category Ib SF3 Class 1 < 450 DMC
Good	Good
Pass	Pass
≤ 2 kV Antistatic	≤ 2 kV Antistatic
ca. 4 dB	ca. 5 dB

Kit and logo solutions

Pre-cut flooring kits

Our pre-cut flooring kits allow you to minimise installation time and waste, reducing interior assembly and maintenance time. Using a floorplan of the intended application area, we use our in-house technology to prepare your order to the exact dimensions required before delivering convenient pre-cut pieces, saving you time and effort. Especially useful for those tricky confined areas with turns, twists and undulations, Altro flooring kits can be easily laid and welded to provide the most direct route to installation success.

Logos and signage

The accuracy of our cutting technology also enables us to offer the production of intricate detailing that can be inlaid directly into the floor. From universal signage and wayfinding solutions through to exact recreations of your company logo, precision-cut icons and sign designs will save you time and make your rail installations stand out.



Logo designs are cut for desired requirements.



Sections can be moved easily into place.



Once affixed the flooring is ready for installation.



“Altro flooring is easy to use because it can be provided to us in pre-cut kits, all the ancillary items like the adhesives are easily available and everything is always delivered on time. Altro’s kit-cutting service has always met all of our expectations, so it’s brilliant.”

Steve Warren,
Head of Procurement at Chrysalis Rail

Self-adhesive solutions

Installation advantages

Designed specifically to remove the need for manual adhesive application and curing times, Altro self-adhesive flooring provides further time-saving possibilities. The pressure-sensitive backing is available for all our rail flooring products and offers enhanced efficiencies without compromising performance. Once positioned and bonded, our self-adhesive flooring can be welded and walked on immediately, allowing interior assembly and refurbishment to continue without delay. The solution works with all commonly used subfloors, providing consistent results every time. It can also be used with pre-cut kits to achieve even greater efficiencies. Altro is the only manufacturer with the capability to offer both solutions in-house for consistent quality control.

Clean and lightweight

The benefits of self-adhesive flooring are not only limited to time savings. The intuitive system is easy to use, requires no specialist tools, and by removing the need for adhesive mixing and application, reduces mess. Better still, the eradication of manual adhesive processes reduces VOC emissions to ensure a cleaner interior air quality for your installation team. Meanwhile, the uniform application of adhesive applied to the backing results in an adhesive weight saving of 60% per m² compared to the recommended applications of polyurethane and contact adhesives.

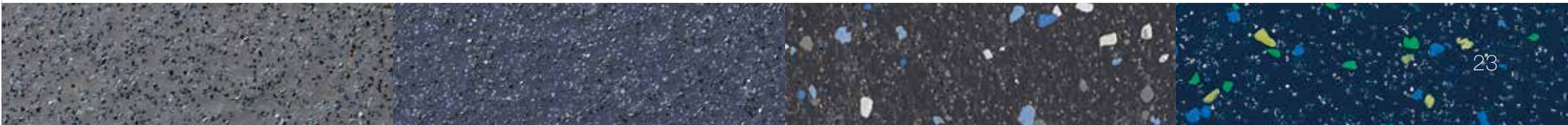


Did you know?

Altro self-adhesive solutions perform consistently across all common subfloor variants.



All Altro rail floors are available in a self-adhesive format





Expert advice ensures optimum installations

Technical support

Installation advice

To gain the best possible performance from your Altro flooring, it's paramount that it's installed correctly. Our highly-skilled technical services team can offer free expert advice to help ensure fitters know how to achieve the best possible results, not only over the phone, but in our dedicated training school. Visit our website to find out more.

🌐 www.altro.com

Continued support

When you invest in Altro flooring for your project, you enter into a partnership that we take seriously. We're available to advise and instruct on technical areas to provide guidance and facilitate product longevity. Whether you have a situation with a subfloor, a question on cleaning or you're wondering about a weld, get in touch – we're here to help.



Did you know?

Altro offer a wide range of weld rods in different colours and profiles to help you achieve the best possible finish.

Cleaning and maintenance

Save time

Altro appreciate that cleanliness is integral to maintaining a welcoming interior, so cleanability is at the forefront of our considerations when developing products. By producing all our rail products with Altro Easyclean™ technology we aim to assist as effectively as possible, giving our floors maximum protection against stains, dirt retention, and facilitating easier cleaning.

Maintain appearance

Cleaning regimes are further complemented by the random scatter patterns of flooring aggregates. Aside from enhancing slip resistance, our aggregates also distract the eye to break up the appearance of common dirt deposits. This ultimately means that standard daily cleaning regimes are sufficient to ensure the floor retains its appearance between incremental maintenance deep cleans. For the best results on rail floors, Altro recommends the use of AltroClean 44™ or a similar alkaline cleaner.

Want to combine the pattern complexity of carpet with the durability and ease of cleaning of vinyl? Ask us about making your floor a custom design with our Altro Transflor Figura™ patterns – using our slip resistant aggregates to create stunning patterns, looking great while drawing the eye away from any dirt particles and avoiding any odours.



Altro Transflor Tungsten

Accessories

Adhesives and weld rods

To help achieve an optimum installation, Altro can supply or recommend a comprehensive range of adhesives to ensure a long-lasting, high performing bond is achieved. Alternatively, you can select your preferred flooring in a self-adhesive format (see page 22).

Our extensive range of weld rods mean that areas of the floor can be joined with water tight seals. Available in an array of colours, these not only look great, but protect the sub-floor from the ingress of dirt and water.

Tools and trims

A range of tools are also available to aid fitters with the installation process. We can suggest the right instruments to suit any project. And with the flooring fitted and welded to perfection, we can also offer a broad selection of nosings and trims, to create a truly professional finish.

- 1. AltroFix 19Plus - 1.5kg, 3kg, 6kg
1.5kg - Coverage 6-7m²
3kg - Coverage 12-14m²
6kg - Coverage 24-28m²
- 2. AltroClean 44 - 1 litre or 5 litres
- 3. Altro Transflor weld rod 50m coil, weld rods are available to match or contrast with your chosen floor product
- 4. i. Router handles
ii. Router blades (pack of 8)
- 5. Cable cutting slide
- 6. Spatula
- 7. Weld nozzles: coving and high speed available
- 8. Groove blades - u shape (pack of 10)
- 9. High speed weld gun 110v or 220v
- 10. Dolphin knives
 - i. Hooked heavy duty blades (box of 100)
 - ii. Concave heavy duty blades (box of 100)

Please consult your sales representative for more information.



Recommended tools and accessories

Sustainability

Hundreds of thousands of people travel by train every day as a more environmentally friendly option than driving, so we believe that we should make every effort to help make train travel as sustainable as possible. We believe that fitting vehicles with sustainably-conscious components shows a demonstrable commitment to the environment.

Recycling

Our commitment to sustainability has also enabled us to become the first manufacturer to recycle traditional safety flooring in-house. Altro flooring even contains recycled particulates including post-consumer recycled glass, which would otherwise be destined for landfill.

At Altro, sustainability drives the choices we make. It starts with the environmentally friendly raw materials we choose to go into our products which enable us to produce orthophthalate-free vinyl floors containing bio-plasticisers.

Why choose Altro

- high performance durability to protect your vehicles
- fire and toxicity compliant flooring solutions
- intelligently engineered products to keep your passengers safe
- creative freedom to enhance passenger experience
- innovative solutions to support installation and maintenance
- dedicated service and technical support



Did you know?

Since 2014 we've achieved 0% waste-to-landfill.



“Altro’s textured, slip resistant design provides safety to passengers and remains easy to clean. My experience has shown that using Altro Transflor safety flooring is an effective way to help contribute to the reduction of slip, trip and fall accidents.”

Sue Stewart,
Transportation industry safety consultant, US.

Altro's in-house recycling facility

Samples

If colour choice is critical, please
request a sample of the material

☎ 01462 707600

✉ samples@altro.co.uk



Altro Limited, Works Road, Letchworth Garden City, Hertfordshire SG6 1NW, UK

☎ 01462 707600 ✉ enquiries@altro.com



Altro, Designed for possibilities. Made for people, Altro Transflor Met and Altro Transflor Tungsten are trademarks of Altro Limited.

Content correct at time of going to print. Altro reserves the right to change any detail. © Copyright Altro 2018

altro.com

RAIL UK 09/18