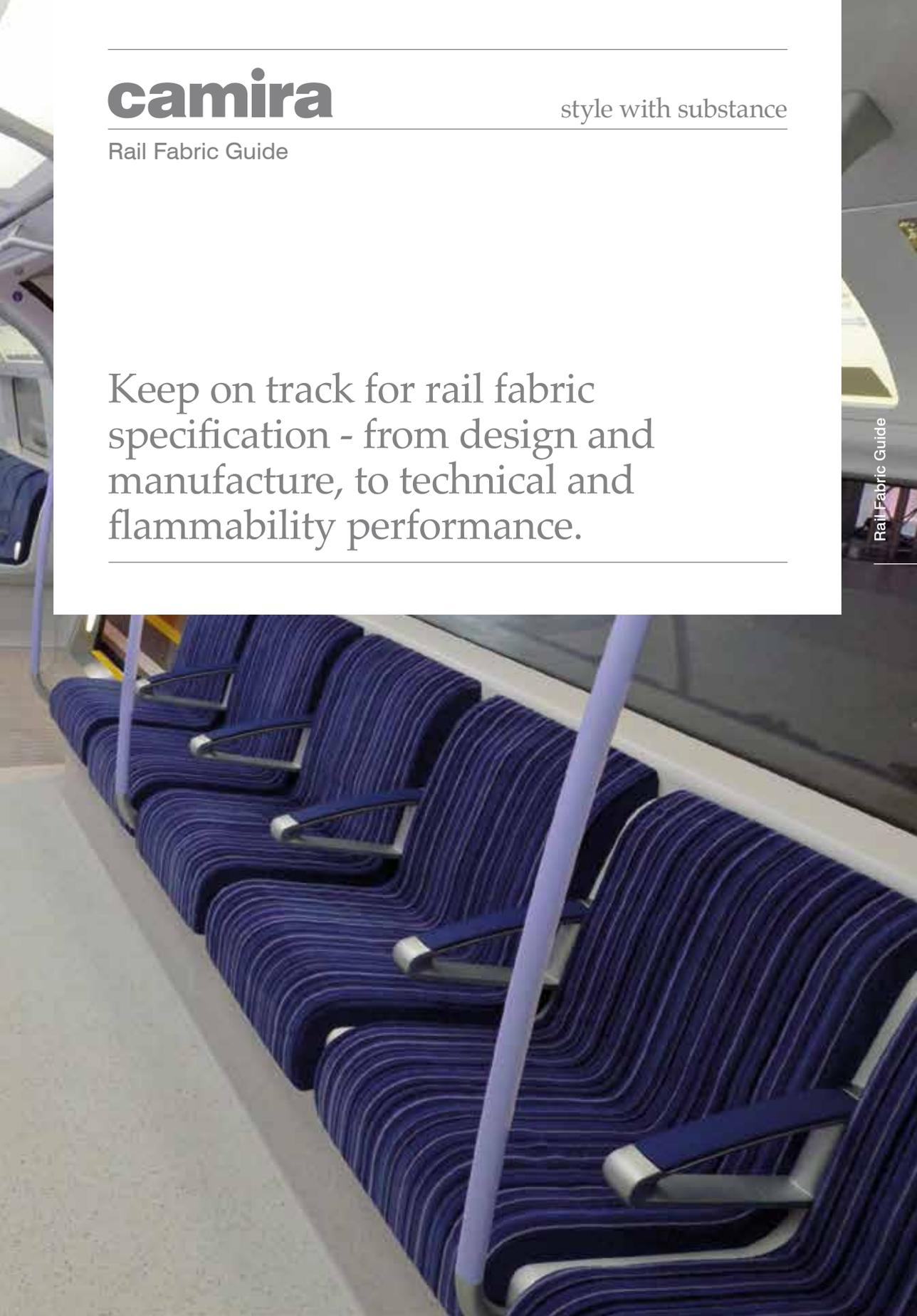

camira

style with substance

Rail Fabric Guide

Keep on track for rail fabric specification - from design and manufacture, to technical and flammability performance.





Firm foundations

With origins dating back to the early 1800's, history and heritage form the backbone of a British textile mill that introduced moquette fabrics to the world.

Founded in the heart of the UK's textile region, John Holdsworth's Mill & Co started weaving moquette fabrics for transport almost 200 years ago. The company carved out a niche providing fabrics for bus, coach and rail interiors worldwide. Camira purchased the Holdsworth brand in 2007 signalling our intent for further growth, investment and global development. Product offerings broadened, enabling customers to source all their transport interior fabric requirements from a single supplier.

We now go to market as Camira, aiming to be the natural choice for fabric solutions worldwide.

Individual designs (just for you)

Striking or unique fabric designs, especially using your own branding, can add personality and flair to a rail carriage interior.

We've been associated with many high profile contracts where the fabric has become instantly recognisable as an iconic part of the branded interior. Think London Underground, Thameslink, First Great Western, Belgian Rail, Swiss Rail and Queensland Rail to name but a few.

Our in-house design studio works closely with professional design houses and rail operators to create the most appropriate fabric solutions not only in terms of colour and appearance, but also in meeting specific technical requirements, most notably flammability performance.

Design capability:

- Technically and artistically talented design team available to accept your brief
- Life-like CAD simulations can be produced using the latest textile design software
- Small production samples of bespoke colour-woven designs can be produced for both moquette and flat-woven fabrics
- Capability to match and create custom-made colours in our own yarn dyeing facility
- Technical advice available throughout every stage of the design process





Plenty to choose from

From high performance flat-wovens through to traditional wool moquettes and leather... the sky's the limit when it comes to choosing the right fabric for your interior.

Traditional 83-17% wool, nylon moquette has been the rail industry standard for over 100 years. Its inherent durability elongates the lifespan of a moquette fabric, and the capability to weave different constructions gives a variety of surface effects. Flat-wovens (durable and lightweight) and leathers can provide that extra level of sophistication for carriage interiors. Leather carries with it an air of luxury and our premium quality hides are exquisitely soft and offer a low maintenance alternative.

Fabric options:

- Moquette - derived from the French word for carpet - is a woven pile fabric in which cut or un-cut threads form a short dense cut or loop pile
- Flat-woven - a two dimensional woven fabric that has no pile loops
- Leather - an elegant, high end, durable alternative to woven fabric
- Vinyl - an easy maintenance faux leather in a more affordable price range
- Trims - trim fabrics can be used for curtains, bulk-heads, luggage racks, side walls, anti-macassars and piping detail

Under one roof

Every step of the manufacturing process is carried out at our own production facilities, from yarn dyeing to weaving and final inspection of woven fabric.

We operate 500,000ft² of manufacturing in the UK and in Lithuania. Our capability extends from yarn spinning and yarn dyeing, through to warping, weaving, finishing and distributing, giving us intimate control of the entire process.

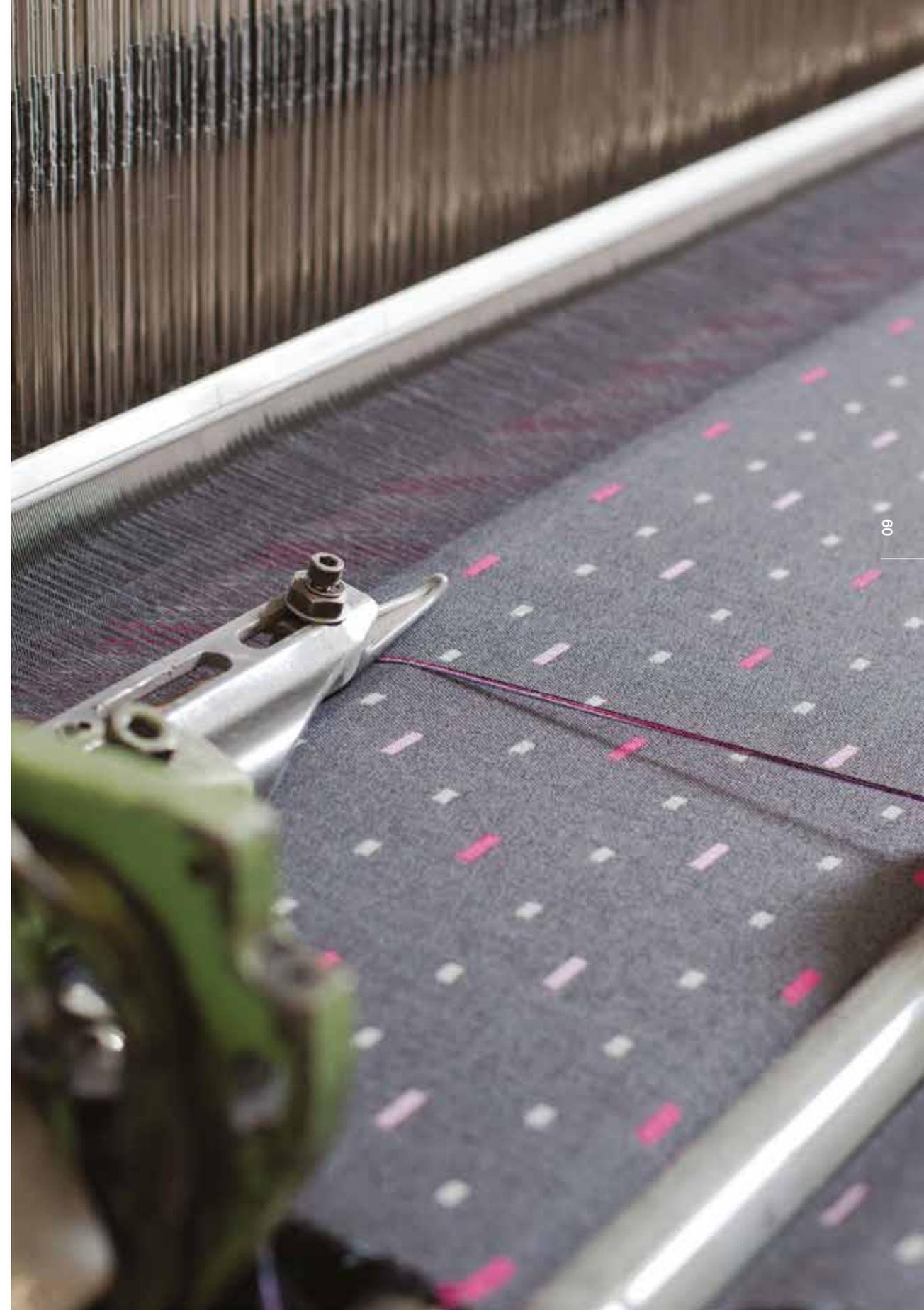
But we do so much more than create fabric. Our cut and sew facility allows us to deliver cut to size fabric components using CNC cutting, apply embroidery and embossing details to fabrics and carry out ultrasonic welding.

Manufacturing capability:

- Loop pile - the yarn is woven in a 'looped pile' creating looped tufts
- Cut pile - the yarn is woven in a 'looped pile' but then the surface of the loops are cut creating individual tufts
- Cut and un-cut (wire-woven) - some yarns remain looped and some are cut offering an alternative look and texture
- Plain weave flat-cloth fabrics woven on a dobby loom
- Patterned flat-cloth fabrics woven on a jacquard loom

Added value extras:

- Specific flame retardant treatments to enable fabrics to comply with all international rail standards. Stain repellent and anti-microbial treatments available
- Oversize cutting machines allow us to cut large quantities of fabric to customer specific sizes
- Seat covers and component parts can be sewn to specific sizes by our team of highly skilled machinists
- Corporate branding and specific designs can be applied to textiles in the form of embroidery, embossing and de-bossing





Flammability compliance

Safety of the travelling public in the unlikely event of a fire is paramount. Our fabrics must comply with various international standards before they can be used in a rail carriage.

Formulated in 1987 on behalf of British Rail the BR252 flammability standard formalised the testing of rail carriage interior fabrics in terms of physical performance as well as their flammability properties. There is now a myriad of international fire tests.

Our fabrics are compliant to:

- BS 6853: 1999 - code of practice for fire precautions in the design and construction of passenger carrying trains based on the fabric's location in the train.
- NF F 16-101 - This test analyses fire behaviour of material regarding its reaction to fire, opacity of smoke and toxicity of gases emitted.
- UIC 564-2: App 5 - Test method for determining the fire-resistance of coated and uncoated textiles. The test measures after flame, size of the damaged area and release of burning particles.
- DIN 5510 part 2 - Defines the parameters of combustibility, smoke development, dripping and toxicity.
- EN 45545-2 Railway applications - This test defines the requirements for components dependent on end use and hazard category applied to the vehicle. Testing involves heat release, smoke opacity and toxicity.
- NFPA 130 Standard for Fixed Guideway Transit and Passenger Railway Systems - This standard is predominately used in North America and involves the use of FAR 25.853 (vertical flame test) and ASTM E 662 (smoke opacity test).
- AS 1530 - Simultaneous determination of ignitability, flame propagation, heat release and smoke release using a radiant heat source.
- GOST 12.1.044.89 - Occupational safety standards system, where flame spread, smoke density and toxicity are measured. An environmental test is also included.



Fabric care & maintenance

To extend the lifetime of your fabric it needs to be looked after. Neglect is the most common cause of the premature breakdown of any upholstery fabric.

Inadequate removal of dirt and dust which settles on the surface of the upholstery will eventually penetrate the structure of the fabric. As the user sits on the seat, the abrasants work like sandpaper, wearing away and breaking fibres in the fabric, eventually causing a hole. Similarly, liquid spills, if left in-situ, can dry into a brittle layer causing hardening of fibres and aggravation of the issues outlined above. To avoid these issues, cleaning should be carried out as often as possible.

Removing stains:

- Mop up excess liquid with absorbent white tissue or a clean cloth
- Treat with one of three cleaning liquids: dry cleaning fluid, upholstery shampoo or clean water
- Always work inwards from the edge of the stain to prevent spreading
- Use a small amount of cleaning fluid at a time, blotting between applications. Continue until the stain has gone
- If the stain can't be removed, seek expert advice from our technical department



Year Guarantee

All rail fabrics are supported by a 5 year guarantee of wearability

Spot & stain removal

Use this simple guide to determine how specific stains should be treated.

When attacking stains use the relevant treatments stated in the key, applying small quantities of liquid and blotting well with clean tissues after each application. Work carefully to remove the stain from the outside towards the centre and allow to dry. Remember to vacuum upholstery on a regular basis to keep it looking fresh.

Stain	Order of treatment	Key of treatments
Beer	1	1. Branded upholstery shampoo solution
Beverages	3,1	2. Branded agents for removing greasy stains
Blood	4,1	3. Clean warm water
Burn / Scorch Mark	10, 9	4. Cold water
Butter	2,1	5. Chewing gum remover
Chewing Gum	5	6. Surgical alcohol
Chocolate	1, 2	7. Nail polish remover
Cream	1, 2	8. Branded absorbent powders
Egg	1	9. Bleach (dilute to 1% in cold water)
Felt tip pen	3, 1, 6	10. Scrape lightly with a coin
Fruit Juice	3, 1	
Gravy and Sauces	3, 1	
Ink (fountain pen)	3, 1	
Ink (ball point)	6, 1	
Lipstick	2, 1	
Milk	3, 1	
Nail Polish	7, 2	
Oil and Grease	2, 1	
Salad Dressing	1, 2	
Urine	1	
Vomit	3, 1	
Wine	8, 3	





Get in touch

Now you've learnt a little about railway fabrics, keep up the momentum. With a network of global contacts, we'll be happy to help.

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