

DECKSHIELD

RAPIDE ED

The best investment for your exposed decks

Specification | Manufacture | Installation

THE BEST PERFORMANCE FOR EXTERNAL DECKS

Catering for the diverse needs of architects and construction professionals for new builds and refurbishments of external decks, exposed areas, ramps, turning circles, hammerheads & service decks, our world leading Deckshield Rapide ED systems offer superior durability, abrasion resistance, exceptional crack bridging, reliable adhesion and fast curing, with the ability to open to traffic in as little as one hour after installation.

These systems have all been designed to overcome top deck challenges and provide designers and developers with a variety of options in order to tailor the decks to their site's specific financial, operational and aesthetic needs. For example, the Deckshield Rapide ED3 fleece free system offers an extremely high performance for robust exposed deck systems, delivering consistency according to EN1504/2, classified OS11a according to DIN-V18026, with crack bridging performances A5 and B4.2, both tested at -20°C and a Reaction to Fire class B_{fl} S1.

The combination of the strong, fast-drying and consistent performance of the PUMA technology makes it an ideal choice for those willing to fast-track their projects and have quick access to site.

As we continue to innovate our time-proven systems, we now offer these high-performance coatings with fleece-free, full fleece or partially fleeced systems extending the range of solutions in the Deckshield Rapide ED category.



Standard Colours*



Traffic Grey B
RAL 7043



Dusty Grey
RAL 7037



Grass Green
RAL 6010



Traffic Blue
RAL 5017



Traffic Purple
RAL 4006

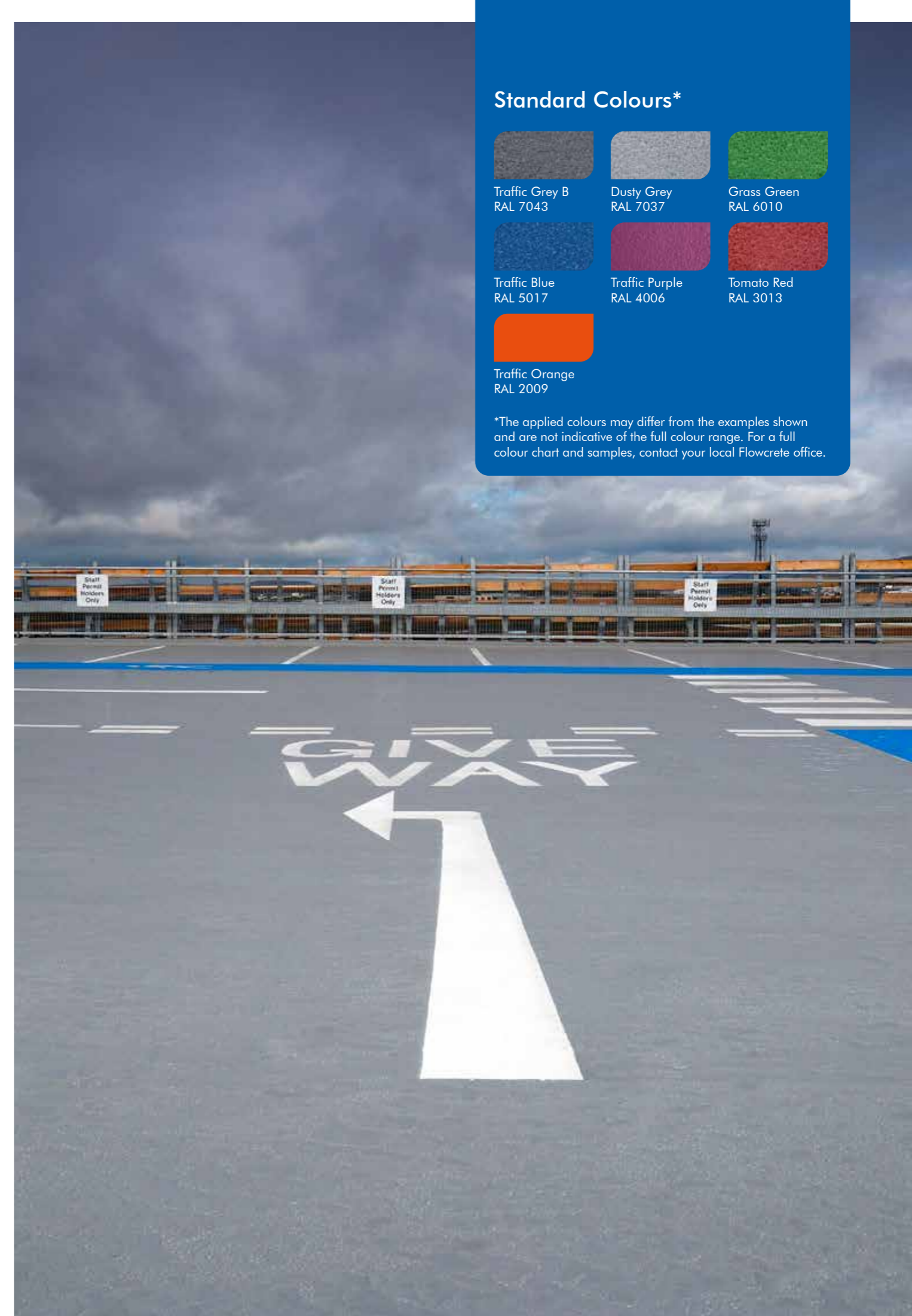


Tomato Red
RAL 3013



Traffic Orange
RAL 2009

*The applied colours may differ from the examples shown and are not indicative of the full colour range. For a full colour chart and samples, contact your local Flowcrete office.



DECKSHIELD RAPIDE ED3, THE POWER OF PUMA TECHNOLOGY WITH FLEECE FREE ADVANTAGES

The Deckshield Rapide ED range is designed to provide superior deck coating properties at every point in an exposed area. Much of this stems from the innovative Polyurethane modified methyl methacrylate (PUMA) based formulation of the systems, which provides a number of advantages over traditional resin or bituminous systems.

Car parking decks have to cope with the constant passage of heavy vehicles, structural movement, exposure to the elements and exposure to automotive chemicals, all whilst protecting the vulnerable concrete from being damaged by water, de-icing salts and other contaminants.

Not only is every deck different, but project requirements are increasingly demanding, this is why we provide a wide range of solutions with different performances, designed to deliver the perfect solution for any exposed deck.

With fleece-free PUMA technology, the Deckshield Rapide ED3 system can be used to fast-track projects that require large areas to be installed in a single day. With no waiting time

between layers, thanks to the 5 times faster curing time, and sheer robustness of the system compared to standard coatings, up to 500 m² can be laid in a working day.

Deckshield Rapide ED3 is part of the protection and repair systems of concrete structures and it has been evaluated according to the EN1504-2:2005 Part 2: surface protection systems for concrete and DIN V 18026:2006 (German classification norm for surface protection) - OS11a, the superior class in the standard classification, and additional crack bridging performance with static crack bridging class A5 and dynamic crack bridging class B4.2, both tested at -20°C. Additionally, the system achieves a Reaction to Fire class B_{fl}S1. It is also Static A5, Dynamic B 4.2 at -20 °C.



Saving Time

PUMA technology with NO fleece enables application in the shortest possible time as the installation of the fleece is saved. It can be installed within one working day.



Saving Money:

The simpler the system the less resources are required. The cost of the fleece is saved by up to 20%.



Saving Risk:

PUMA technology and fleece free guarantees maximum performance of the system reducing the risk of failure. Furthermore EN 1504/2 and OS11a, the Deckshield Rapide ED3 has additional performance: High dynamic crack bridging (Class B 4.2 at -20 °C); high static crack bridging (Class A5 at -20 °C); Reaction to Fire (Class BflS1).

Choose fleece free Deckshield Rapide ED3 when your installation deadline is a determining factor and you need to look for a fast and reliable solution that guarantees maximum performance in exposed areas, without putting your investment at risk.

COMMON CAR PARK CHALLENGES

One of the biggest concerns with external decks is weathering, which means that they are vulnerable to weather variations and inclement weather, receiving direct sun exposure and the effects of rain, suffering accelerated wear and tear, together with the effects of road traffic.

Without the right solutions underfoot, car parks are likely to fall foul of a long list of challenges which could lead to cracked, unsightly and unclean deck surfaces – or worse – compromised concrete slabs and an unsafe structure.

Thanks to the tried-and-tested solutions in our specialist Deckshield Rapide ED range, car park operators can rest assured that their facility is protected from all of the below challenges for the long term.

Moisture & Water Ingress

To fully protect a deck coating and its underlying structure, it's important to guard against liquids seeping into the concrete while simultaneously stopping moisture from inside the concrete rising up into the floor.

Chemicals

Car park floors will have to withstand a barrage of highly corrosive chemical substances on a daily basis. This is because liquids such as petrol, diesel, engine oils, coolant, screen wash, battery acid, brake fluid and de-icing salts could all end up on the floor.

If the coating is unable to resist these chemicals then they will quickly start to eat into the floor, undermine the finish and penetrate the concrete.

Certified Systems

The best way to protect your investments is to be sure that all the product performance offered by the manufacturer is evaluated by Notified Body testing according to the requirements of the standard or the type of application proposed.

Crack Bridging

Cracking in a car park's floor usually happens because of the way that external decks are constructed. Being large structures with as few supports as possible (in order to maximise parking space), combined with the inevitable movement of heavy vehicles, it is normal for each level to undergo a lot of flex and movement.

For this reason, deck coating solutions with crack bridging properties should be applied. This means that the floor is elastic enough to maintain a seamless finish while the concrete structure is undulating and moving.

Concrete Slab Movement

Car parks are constructed with large clear spans with a minimum number of supporting columns in order to achieve the maximum number of vehicle parking spaces. This type of construction, when subjected to cyclical traffic flow, inevitably leads to the structure flexing and moving.

The floor coating will also experience these issues and needs to be able to flex with the movement of the cars and the underlying concrete slab without splitting apart. Too rigid and the floor will crack when subjected to the above forces, too thin or weak and the grinding punishment of the cars will wear away at the floor.

UV Exposure

External decks are exposed to the elements all year round, this means that all the building materials have to be able to withstand wind, rain and sun 24/7. This is most acute on the top levels and external decks, which have no cover at all.

UV resistant coatings that stretch with the concrete are imperative in order to avoid problems ranging from discolouration to the concrete breaking up and flaking away in the sun.

Slip Resistance

Minimising the risk of slips and trips is very important in a car park, as there could be rainwater, spilled automotive fluids or slippery dropped substances on the floor. To make sure that the site's users are kept safe, a textured anti-slip coating should be applied to enhance traction underfoot.

Fire Protection

In order to satisfy the various standards applicable to building materials, car park floorings must also comply with certain reaction to fire criteria to prevent the spread of fire.

Mechanical Abrasion

It's an obvious point, but cars are heavy! Even when parked, they'll be exerting a lot of pressure into the coating. Added to this is the potential for damaging physical impacts from the site's users or from staff dropping equipment on the floor.

If the abrasion or impacts start to chip away at the floor then not only will it make the finish look unappealing and be much harder to clean but it could become the start of a significant failure across the coating.

Tyre Squeal

Textured surfaces are ideal for both pedestrians and cars, as the extra grippy flooring not only makes it safer to drive on, but it also reduces the likelihood of unpleasant tyre squeals.

This grip is created by using a trafficable deck coating that has been textured using aluminium oxide or bauxite aggregates. The small bumps and ridges that this creates increases grip while reducing the contact area between the tyre and the floor. It's particularly important to consider how much texture is required in the areas where cars are most likely to turn tightly, such as the ramps, as this is where tyre squeals are most likely to occur.

DECKSHIELD RAPIDE ED EXPLAINED...

10 PRODUCTS FOR 6 DECKSHIELD RAPIDE ED SYSTEMS

Deckshield Rapide ED systems, with the latest PUMA technology, are rapidly expanding to provide solutions to extreme situations and are highly recommended for use on exterior decks and exposed areas in a wide range of situations.

The combination of different formulations offers a wide range of colours and finishes, allowing, for example, the degree of slip resistance to be adapted to each situation, or to define the waterproofing membrane, with or without fleece, or even

the mechanical and chemical performance.

However, due to the chemical nature of PUMA technology, it is advisable to respect the composition of the systems and avoid applying a finish with a different chemical composition.

System Components

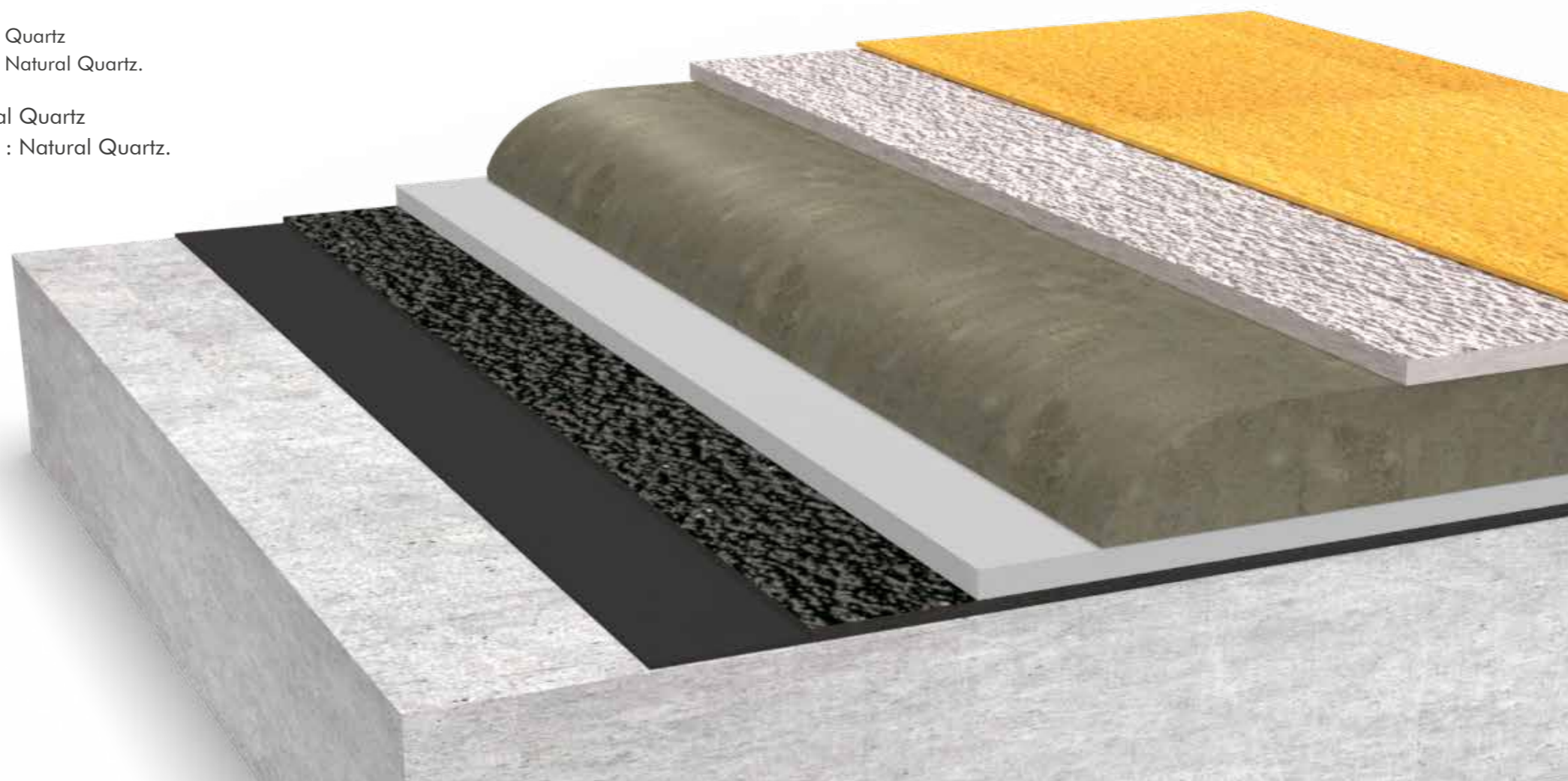
Deckshield MMA/PUMA products

- 1 Deckshield Standard Primer. A 2-component low viscosity methyl methacrylate (MMA) based primer designed for concrete, metal and ceramic substrates.
- 2 Deckshield Rapide Membrane. A 2-component, medium viscosity, urethane-modified, pre-formulated 100% solids membrane based on acrylic monomers.
- 3 Deckshield Flexible Binder. A 2-component, clear, medium viscosity methyl methacrylate (MMA) based binder for Deckshield Rapide systems and Flowfast floor coatings.
- 4 Deckshield Rapide Topcoat (colours). A 2-component medium viscosity methyl methacrylate (MMA) based coloured coating.
- 5 Flowfast Catalyst. An almost odourless, free flowing, white powder consisting of stabilised 50% dibenzoyl peroxide.
- 6 Flowfast SNL Filler: Filler to incorporate into Deckshield and Flowfast systems.

Aggregates and fleece

- 7 Deckshield Fleece: Synthetic fleece for reinforcement.
- 8 Flowfast HD Filler: Aggregates to broadcast for high abrasion performance.
- 9 Dorsilit Natural Quartz
0.6 – 1.2 mm : Natural Quartz.
- 10 Dorsilit Natural Quartz
0.3 – 0.8 mm : Natural Quartz.

Deckshield Rapide ED systems, with latest PUMA technology, are highly recommended for use on exterior decks and exposed areas in a wide range of situations.



SOLUTIONS FOR EXTERNAL DECKS

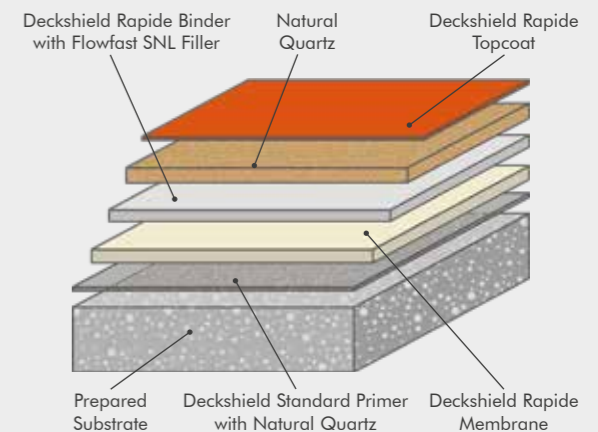
Deckshield Rapide ED systems suitable for a car park's exposed deck include six variations.

In order to meet all the needs generated in the field of external decks and exposed areas, the Deckshield Rapide ED family offers a wide range of systems, each one of them with the specifications and performance for each of the required uses.

All these systems are characterised by superior durability and abrasion resistance, exceptional crack bridging, tenacious adhesion and fast curing. They can be opened to traffic hours after installation. Deckshield Rapide ED systems, with PUMA technology, can be applied in temperatures as low as -20 °C.

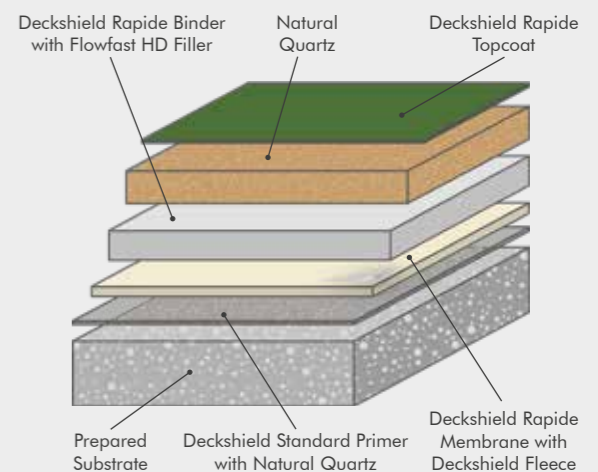
Deckshield Rapide ED3

- A flexible top deck waterproofing system that offers superior elastomeric crack bridging properties
- Provides dynamic crack bridging up to 2.5 mm



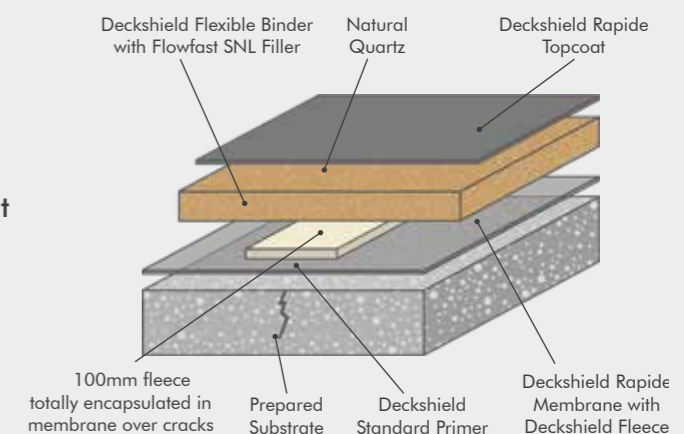
Deckshield Rapide EDF

- A fleece reinforced deck system providing the highest level of protection for use above occupied spaces
- Provides dynamic crack bridging up to 2.5 mm



Deckshield Rapide EDP

- A partially fleece reinforced deck system optimally engineered for the refurbishment of existing decks
- Provides dynamic crack bridging up to 2.5 mm



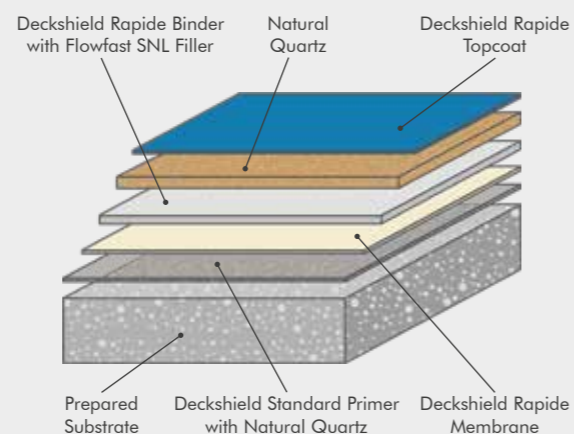
Products included in these systems for heavier wear areas

For drive aisles and turning points:
 Deckshield Rapide ED3-HD 7 mm (nominal)
 Deckshield Rapide EDF-HD 7.5 mm (nominal)

For single entry/exit points and ramps
 Deckshield Rapide ED3-Ramp 7 mm (nominal)
 Deckshield Rapide EDF-Ramp 7.5 mm (nominal)
 Deckshield Rapide EDP-HD 6 mm (nominal)

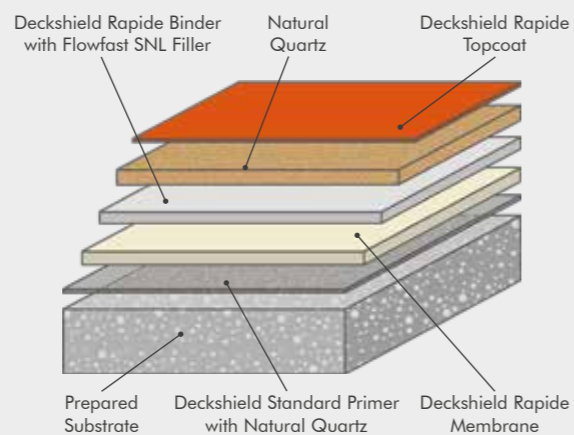
Deckshield Rapide ED1

- The standard option that provides all the functionalities required for a multi-storey car park's floor
- Provides dynamic crack bridging up to 0.3 mm (1 mm when banded)



Deckshield Rapide ED2

- The enhanced performance of ED2 means that banding is not normally required, significantly reducing labour and time to install
- Provides dynamic crack bridging up to 0.6 mm



DECKSHIELD RAPIDE ED, PUMA TECHNOLOGY AT YOUR FINGERTIPS

The Deckshield Rapide ED range is designed to provide superior deck coating properties at every point in an exposed area. Much of this stems from the innovative Polyurethane

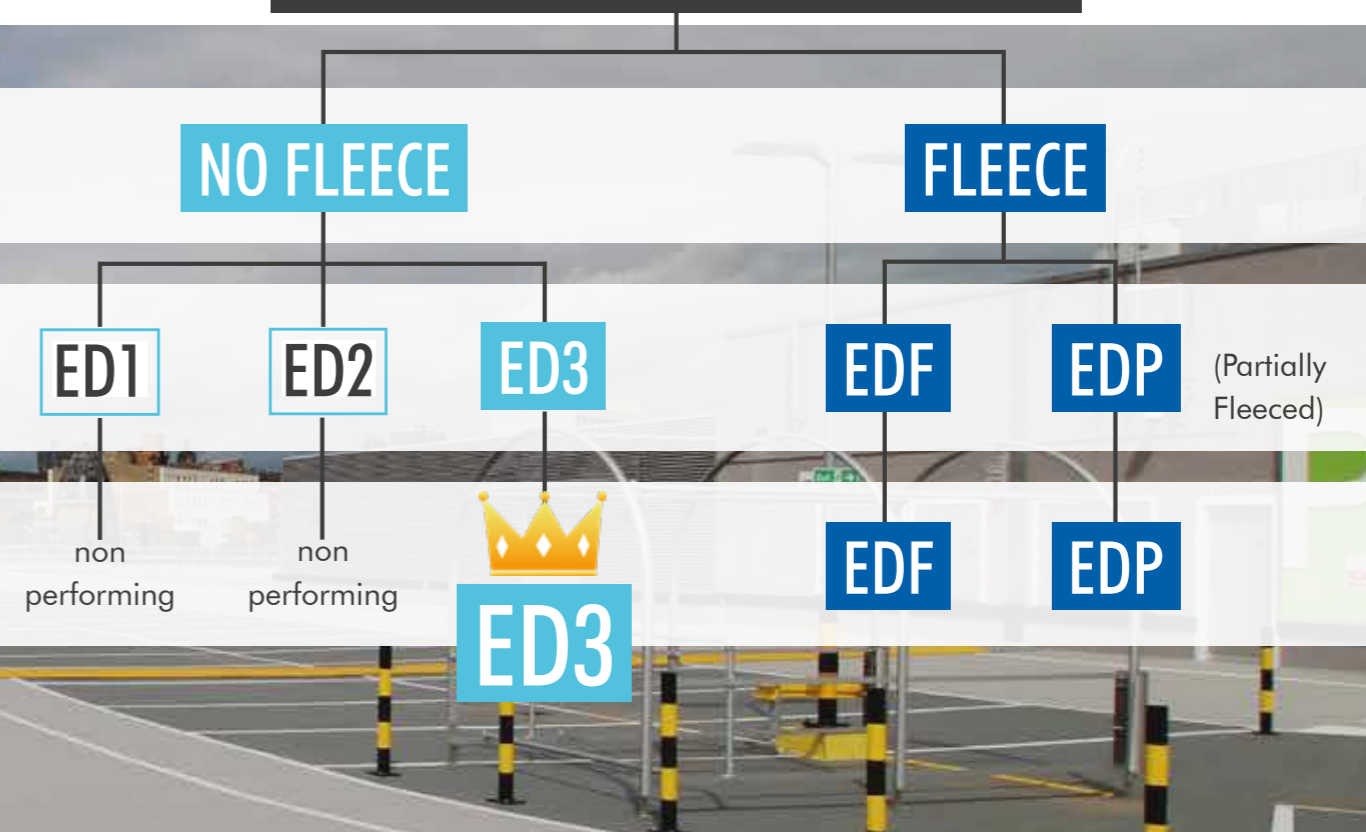
modified methyl methacrylate (PUMA) based formulation of the systems, which provides a number of advantages over traditional resin or cementitious systems.

DECKSHIELD RAPIDE ED

FLEECE NEEDED WITHIN MEMBRANE

SYSTEM OS11_A AND B_{FL S₁}

TOP PERFORMANCE: A5 AND B4.2 AT -20°C



Regulatory outlook

The European Standards EN 1504 is a systematic approach to repairing concrete structures. The Part 2 of EN 1504 provides specifications for surface protection products / systems for concrete, and especially in the case of car park restoration.

This waterproofing protection standard is based on the German equivalent Rili DAfStb. That German standard was the most complete and complex standard for such applications; in fact, it was the only standard that tested and categorised car park decking membranes.

Why Crack-bridging?

Trafficable surface protection systems are required wherever the risk of cracking arises. They are also indispensable where existing cracks show significant width variation due to temperature and load changes. The two-layer OS11a system offers a higher degree of wear resistance compared to the OS11b single-layer system. The soft floating layer provides the crack-bridging function, while the wear layer absorbs the mechanical stress caused by traffic. The final coat of sealant improves deck cleanability and improves the bind.

In addition to the test done for OS11a, crack bridging tests are carried out above the regular limits. For example, the test may look at a wider crack and a lower temperature to what may exist naturally. Both systems, Deckshield Rapide ED3 and Deckshield Rapide EDF achieve Class A5 and Class B 4.2 performance ratings, respectively in Static and Dynamic tests, at the temperature of -20 °C.

Last but not the least, the Deckshield Rapide ED3 offers the great advantage of being a fleece free system. Fleece is usually used to reinforce the flexible membrane at very low temperature. But the installation of fleece may generate an extra hurdle on a real jobsite. Having a fully liquid applied system with Deckshield Rapide ED3 offers the dual advantage of high performance and ease of installation.

KEY BENEFITS

Deckshield Rapide ED offers the latest in PUMA technology, with a full range of systems including fleece free or full fleece and is perfect for external decks and exposed areas.

Tested and certified to OS11a and EN 1504-2, Deckshield Rapide ED has a fast-track installation which allows for full traffic and chemical cure within 3 hours. 100% UV stable, this system protects against diesel, fuel, antifreeze, hydraulic fluid, chlorides and battery acid.

	ED1	ED2	ED3
	Best for...	Best for...	Best for...
CRACK BRIDGING PROPERTIES EN 1062-7:2004 Method A – C.2 @ -20°C	Class A4 >1.25 mm	Class A4 >1.25 mm	Class A5 > 2.5 mm (Waterproofing Layer) Class A3 > 0.5 mm (Wearing Layer)
EN 1062-7:2004 Method B – B.3.2 @ -20°C	No cracks	No cracks	No cracks
SLIP RESISTANCE EN 13036-4:2011	Class III: >55 Wet Test	Class III: >55 Wet Test	Class III: >55 Wet Test
REACTION TO FIRE EN 13501-1	C _{fi} -s ₁	C _{fi} -s ₁	B _{fi} -s ₁
BOND STRENGTH Measurement of Bond Strength by Pull-off EN 1542:1999	2.3 N/mm ²	2.0 N/mm ²	2.0 N/mm ²
WATER VAPOUR TRANSMISSION Diffusion-equivalent Air Layer Thickness (Sd) EN ISO 7783:2012	Class III: Sd >50 m	Class III: Sd >50 m	Class III: Sd >50 m
CARBON DIOXIDE PERMEABILITY Diffusion-equivalent Air Layer Thickness (Sd) EN 1062-6:2003	>50 m	>50 m	>50 m
ABRASION RESISTANCE Taber Test EN ISO 5470-1:1999	Weight loss 799 mg	Weight loss 863 mg	Weight loss 604 mg
IMPACT RESISTANCE EN ISO 6272-1:2012	Class III: 24.5 Nm	Class III: 24.5 Nm	Class III: 24.5 Nm

	EDF	EDP
	Best for...	Best for...
CRACK BRIDGING PROPERTIES EN 1062-7:2004 Method A – C.2 @ -20°C	Class A5 >2.5 mm	Class A1 >0.1
EN 1062-7:2004 Method B – B.3.2 @ -20°C	No cracks	NA
SLIP RESISTANCE EN 13036-4:2011	Class III: >55 Wet Test	Class III: >55 Wet Test
REACTION TO FIRE EN 13501-1	C _{fi} -s ₁	C _{fi} -s ₁
BOND STRENGTH Measurement of Bond Strength by Pull-off EN 1542:1999	2.3 N/mm ²	1.9 N/mm ²
WATER VAPOUR TRANSMISSION Diffusion-equivalent Air Layer Thickness (Sd) EN ISO 7783:2012	Class III: Sd >50 m	NA
CARBON DIOXIDE PERMEABILITY Diffusion-equivalent Air Layer Thickness (Sd) EN 1062-6:2003	>50 m	NA
ABRASION RESISTANCE Taber Test EN ISO 5470-1:1999	Weight loss 574 mg	Weight loss 675 mg
IMPACT RESISTANCE EN ISO 6272-1:2012	Class III: 24.5 Nm	NA



Project Reference

Client	Manchester Airport Group
Completed	2020
Systems	Deckshield Rapide ED & Deckshield ID
Quantity	125,000m ²
Country	United Kingdom
Architect	Aecom

The upper deck of MSCP at the Manchester Airport Terminal was coated with Deckshield Rapide ED1.

Over 100,000 m² of Deckshield ID to intermediate decks and 25,000 m² to Deckshield Rapide ED1 installed to top deck of MSCP. Band reinforcement at crucial selected points by main contractor. Installation was mainly during Covid lockdown by 4M Floors UK Ltd, so had some challenges. Combated high moisture issues on site. Main contractor was Galliford Try.



Project Reference

Client	ABP
Completed	2020
Systems	Deckshield Rapide ED
Quantity	11,000m ²
Country	United Kingdom

Waterproofing of Car Storage Facility. New concrete topping on existing pc planks with severe movement at some locations which were fleece banded to reinforce.

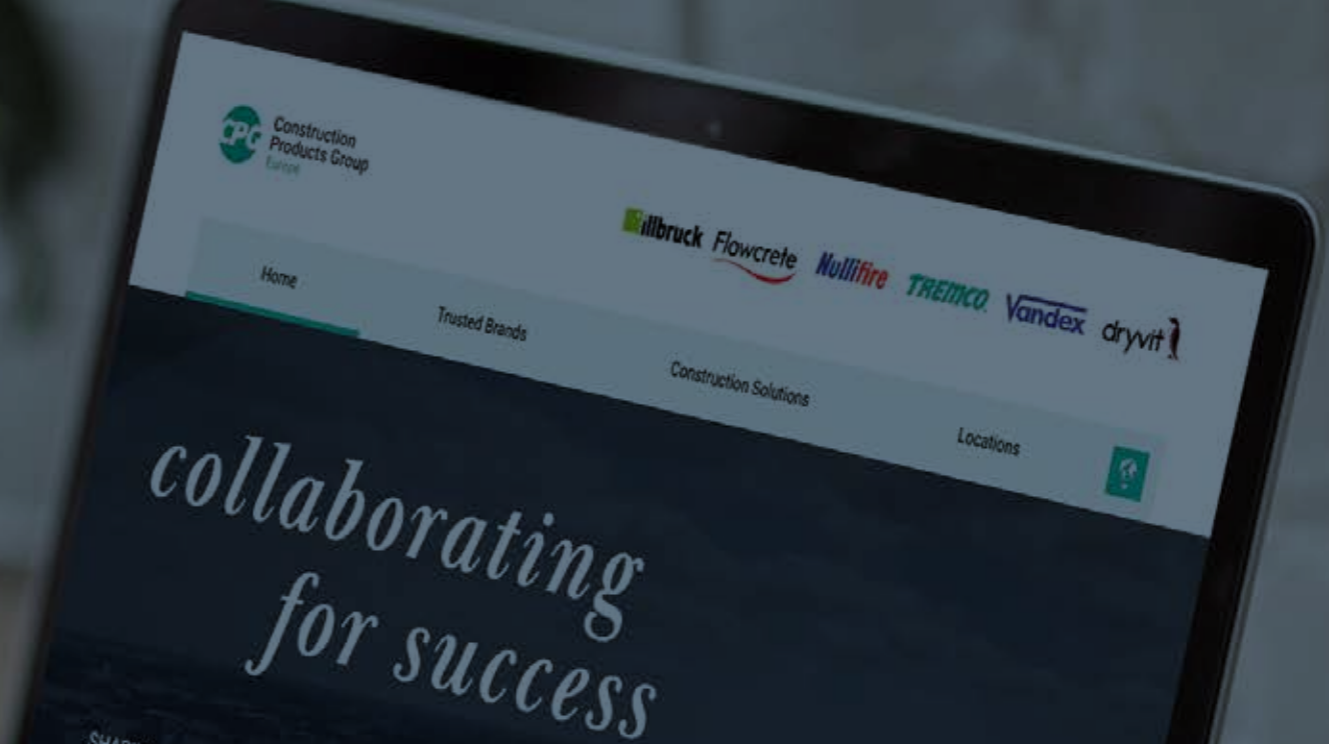
ABP operate 8 car storage facilities at Southampton Docks, which handle over 1,000,000 car movements per year with approximately 2/3 of these being exported. Cars are stored before being loaded onto ships, or are off-loaded from ships awaiting onward transportation by rail.

The Flowcrete applicator installed 11,000m² of Deckshield Rapide EDF system to provide a durable and robust waterproofing system to the exposed roof deck. As part of the works approximately 11,000 LM of joint detailing was carried out, comprising either a single layer of reinforcement, or in the case of plank-ends a double layer of fleece reinforcement was installed to accommodate the high movement experienced at these locations.





Construction Products Group
Europe



CPG Europe manufactures high performance building materials in order to solve the complex challenges faced by today's construction industry. It is the home for multiple European construction product brands, including illbruck, Flowcrete, Nullifire, Tremco, Vandex and Dryvit. With over 1,400 employees across Europe, we are committed to shaping a world where buildings and structures save energy, last longer and exceed sustainability benchmarks.

From joint sealing, bonding and insulation through to passive fire protection, flooring, waterproofing and roofing solutions – the product brands housed within CPG Europe cover a wide array of different construction needs. Combined with the wealth of expertise, services and support we provide a truly unique offer – to make our customers more successful time after time.

CPG Europe is part of RPM International Inc. – one of the world's leading construction products companies for both the industrial and consumer segments.

Europe's leading construction products brands...



CPG Europe's Core Values



Collaboration



Honesty & Integrity



Respect



Engagement



Sustainable

Delivering World-Class Construction Product Solutions.

The product brands housed within CPG Europe cover a wide array of different construction needs and provide a wealth of complex services, support and systems that are rarely found together under one roof.



Intumescent Coatings,
Fire Stopping



Potable & Waste Water Industry, Balconies and Podia, Terraces, Basements & Foundations



Window Insulation, Façade Construction, Exterior Insulation & EIFS, Structural & Inplant Glazing



Seamless Resin Flooring, Subfloor Preparation, Car Parking Structures



Liquid Applied Systems, Felt Systems, Vegetated Roofing



Tremco CPC UK Ltd
Coupland Road, Hindley Green
Wigan
WN2 4HT UK

+44 (0) 1942 251400
sales@cpgeurope.com
www.cpg-europe.com



www.flowcrete.co.uk



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



uk@flowcrete.com



allthingflooring.com



youtube.com/flowcretetv



[/company/flowcrete](https://company/flowcrete)