



Production Areas



Laboratories



Clean Rooms



Packaging Zones



Chemical Storage Areas



Plant Rooms and Maintenance

## TRANSFORMING pharmaceutical environments



Floorzone Solutions for the Pharmaceutical Sector

# WELCOME TO FLOWCRETE - for the world at your feet

Flowcrete's commitment to exceptional design, technical support and advisory services, from initial enquiry through to installation, is at the heart of our business philosophy. Our global success is driven by our commitment to excellence; excellence in products, excellence in service and excellence in people.

With manufacturing plants across Europe, the Americas, Asia, India and Africa, a global commercial sales support team and the backing of a major multinational manufacturing group, Flowcrete is well placed as the world's leading performance flooring designer and manufacturer to serve clients in their local markets.

Our fully trained and monitored global network of approved flooring contractors ensures that your project is in safe hands with Flowcrete.



## TRANSFORMING pharmaceutical environments

The pharmaceutical industry demands surroundings that are as state-of-the-art as its innovations. From research and development laboratories through to production and packaging facilities, the full pharmaceutical environment requires ground-level solutions that meet the demands of such facilities.

Flowcrete has built up over 35 years of experience delivering first class flooring solutions for a host of international pharmaceutical clients such as GlaxoSmithKline, Roche, Lonza Pharmaceuticals, Merck Sharpe Dohme, AstraZeneca and many more.

Now, Flowcrete has developed its **Floorzone** concept to cater for all areas of the specialist pharmaceutical sector - offering a comprehensive mix of innovative resin floor and wall coating materials, under one single responsibility package, to meet the diverse needs of pharmaceutical environments.

What's more, Flowcrete's **Floorzone** concept has been designed with sustainability in mind so that it not only performs in your environment but is also kind to our planet.



GlaxoSmithKline, Belgium.



# DELIVERING - performance flooring

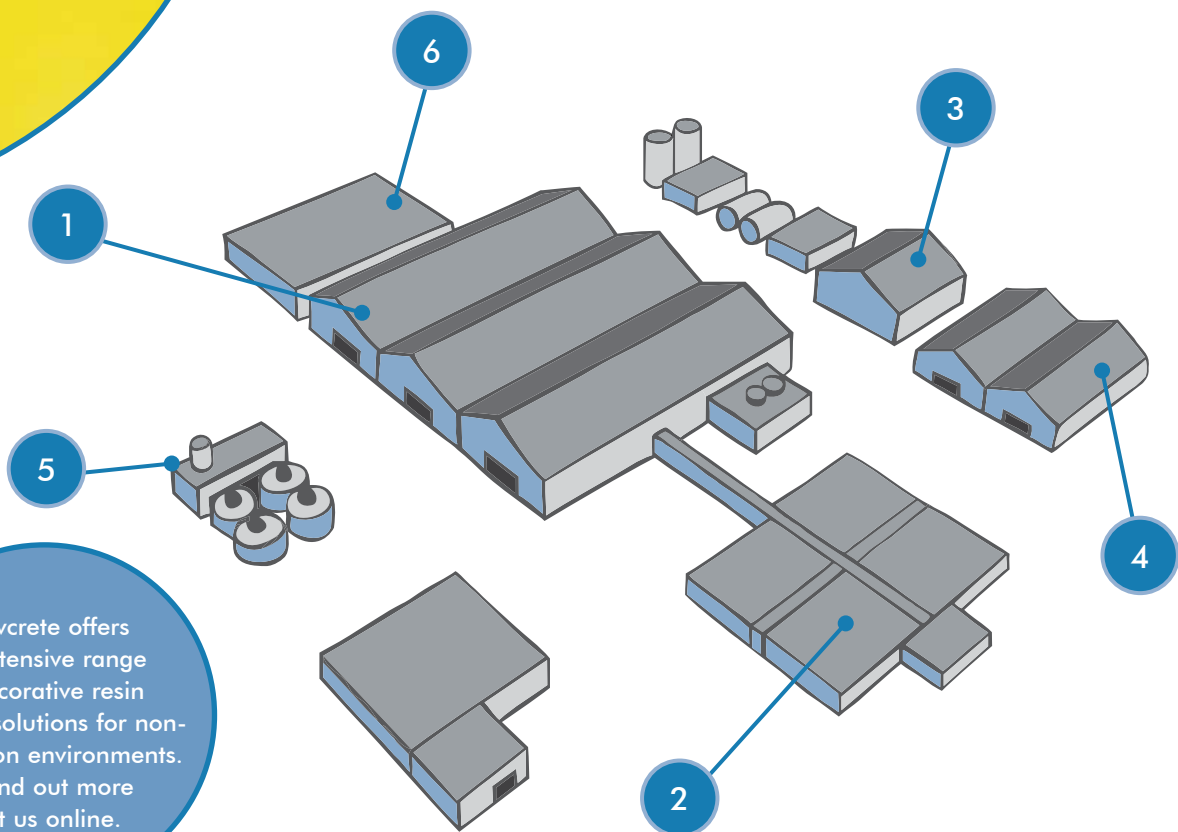
**What kind of flooring system?** That's the big question faced by clients in the pharmaceutical sector looking to satisfy a number of performance requirements and service conditions.

In warehousing and packaging environments, as well as service areas and corridors, medium duty floor finishes can offer a cost-effective solution underfoot that not only perform well on surfaces subject to high levels of traffic, but also benefit from the inherent antibacterial properties of a seamless finish.

In research and production environments such as laboratories and manufacturing plants where cleanliness and hygiene are paramount, more durable systems are required. These systems are often thicker, tougher and come with additional protection such as chemical resistant seal coats, antimicrobial additives and a made to order anti-slip profile.



## TRANSFORMING pharmaceutical environments



Flowcrete offers an extensive range of decorative resin flooring solutions for non-production environments. To find out more visit us online.

Medilife, Belgium.



1

## Production Areas

In order to meet the high performance demands of production areas, flooring must be durable, hard-wearing and deliver impressive scratch and impact resistance. What's more, the sterile nature of these pharmaceutical production environments require a flooring solution that is hygienic and resists the build-up of bacteria.

- Flowfresh HF •Flowshield SL/Quartz •Mondéco TZ •Peran STB

K-Rith Centre, South Africa.



2

## Laboratories

Subject to stringent hygiene requirements, laboratories demand a seamless floor finish that eliminates the cracks and crevices that harbour bacteria. Our range of flooring also includes solutions with antimicrobial additives to stop the spread of bacteria on contact. What's more, antistatic and chemical resistant properties are essential to maintain the integrity of the floor.

- Flowshield ESD/Quartz •Mondéco TZ •Peran STB

Henogen, Belgium.



3

## Clean Rooms

From the ground up, clean rooms require solutions that contribute towards meeting strict health and safety guidelines as well as hygiene requirements. Bacteria that could harm pharmaceutical developments can be transported on the feet of technicians; a problem that can be minimised by using a flooring solution that includes a silver-ion additive to kill 99.9% of bacteria on the surface of the floor.

- Flowfresh MF •Flowshield SL •Mondéco TZ •Peran STB

Becton Dickinson, UK.



4

## Packaging Zones

In heavy duty areas such as packaging facilities, which are potentially operating on a 24 hour basis, a hard-wearing, durable solution that withstands heavy foot and vehicular traffic whilst maintaining health and safety requirements is required underfoot. Demarcation can also be included to clearly denote various operational areas to improve efficiency and workflow.

- Flowfresh MF •Flowshield SL/Quartz •Peran STB

CMT Logistics, Singapore.



5

## Chemical Storage Areas

Storage areas in pharmaceutical environments are likely to be subject to regular chemical attacks, meaning that a floor finish with superior resistance to a variety of chemicals is vital. A well-maintained seamless finish will ensure that these areas deliver a safe environment for transporting, storing and retrieving chemicals for pharmaceutical developments.

- Flowfresh HF •Flowshield CR •Flowchem VE •Isocrete K-Screed

Cambrex, Belgium.



6

## Plant Rooms and Maintenance

Plant rooms play an important role in keeping operations moving. Flowcrete offers a number of industrial floor coatings and systems suitable for use in maintenance areas. These systems are able to meet a host of performance criteria including high mechanical, chemical and impact resistance, as well as being easily cleaned and maintained.

- Flowcoat SF41 •Flowseal EPW •Isocrete K-Screed

# The FLOORZ

## Flowfresh

The Flowfresh range includes medium to heavy duty polyurethane resin floor screeds best suited to use in a wide variety of demanding industrial environments. Containing Polygiene®, a silver-based antimicrobial agent, Flowfresh delivers antimicrobial surface protection, which remains active for the life of the floor.

## Flowfast Quartz / Terroso

The Flowfast system is a joint-free and wear resistant quartz flooring system best suited to use in medium to heavy duty environments where a durable finish is required. Available in a blend of colours and designs, Flowfast has been designed to enable fast track installation and therefore significantly reduces client downtime.

## Flowshield SL

Flowshield SL is a hygienic self smoothing resin floor finish that is ideally suited to dry processing areas where the floor is subject to medium-heavy foot and vehicular traffic. Typical environments where Flowshield SL is applied include laboratories, clean rooms and packaging environments.

## Flowshield Quartz

Flowshield Quartz is a seamless and self smoothing epoxy floor coating that delivers a colourful and decorative speckled finish. Both easy to clean and maintain, Flowshield Quartz is a dust free and environmentally friendly flooring system that offers good all round resistance in medium duty areas.

Henogen, Belgium.

Cream

Blue T750 / Dali

Yellow

Light Blue

# ONE Solution

Cambrex, Belgium.

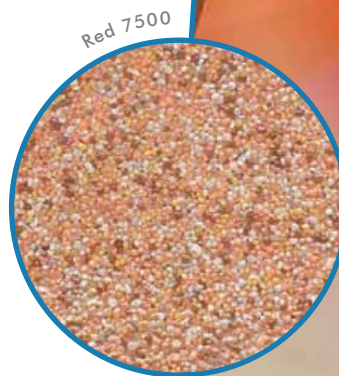
## Flowseal EPW (Floor / Wall Sealer)

Flowseal EPW is a water-based, hygienic floor / wall sealer with a coloured gloss finish, best suited for use in dry process areas, kitchens, light industrial areas, store rooms and areas of pedestrian and light wheeled traffic. Flowseal EPW can be applied to damp substrates and is vapour permeable.



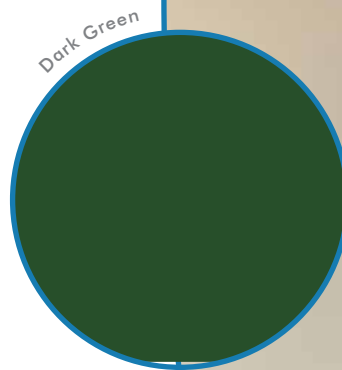
## Peran STB

Peran STB is a hard wearing, decorative resin floor topping made up of colour stable quartz granules encapsulated in a clear resin binder. Peran STB is available with a matt finish and is ideal for use in kitchens and wet or dry processing areas where the floor is subject to heavy traffic, impact and chemical spills.



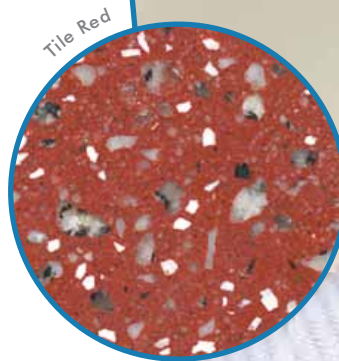
## Flowshield ESD

Flowshield ESD is a dissipative floor finish that has excellent antistatic properties, making it suitable for use in powder processing environments. Its high abrasion and wear resistance stand up to the stresses and strains of medium-heavy duty foot and wheeled traffic.



## Mondéco TZ

Mondéco TZ is a seamless, heavy duty polyurethane resin terrazzo, best suited to aggressive areas subject to hot fluid spillage, chemical attack and heavy foot or wheeled traffic. With the added benefit of Polygiene®, Mondéco TZ can offer the ultimate in performance hygiene flooring.


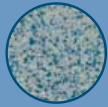
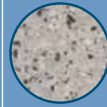
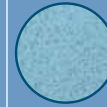
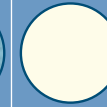
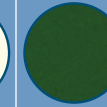
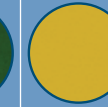
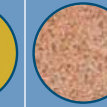
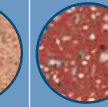
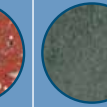


or the Pharmaceutical Sector

# PRODUCT -

# technical information

The figures provided in the table below are typical properties of our specialist flooring systems achieved in controlled laboratory tests that were conducted at 20°C and at 50% relative humidity. For full system technical data, please contact your local Flowcrete office or alternatively visit us online.

System Thickness	Flowfresh	Flowfast Quartz	Flowfast Terrosso	Flowshield Quartz	Flowseal EPW	Flowshield ESD	Flowshield SL	Peran STB	Mondéco TZ	Isocrete K-Screed
<b>Flooring System:</b>	6–9mm	Dependant on Specification	Dependant on Specification	2–3mm	0.20mm Dry Film Thickness (2 coats)	Dependant on Specification	2–3 mm	2–3 mm	7mm	3–30mm
Impact Resistance (ISO 6272)	1kg >1.8m 2kg >1.5m	1kg >1.8m 2kg >1.5m	1kg >1.8m 2kg >1.5m	-	-	-	-	-	1kg >1.8m 2kg >1.5m	-
Abrasion Resistance (BS 8204-2)	Class AR2	Class AR1	Class AR2	Class AR2	Class AR3	Class AR2	Class AR2	Class AR2	Class AR2	Class AR3
Temperature Resistance	Up to 120°C	Up to 70°C	Up to 50°C	Up to 60°C	Up to 60°C	Up to 60°C	Up to 60°C	Up to 60°C	Up to 120°C	Up to 70°C
Permeability (Nil-Karsten Test)	Impermeable	Impermeable	Impermeable	Impermeable	20g/m <sup>2</sup> /mm/24hr	Impermeable	Impermeable	Impermeable	Impermeable	Impermeable
Bond Strength (Primed Concrete)	>1.5 MPa	>1.5 MPa	>1.5 MPa	>1.5 MPa	>1.5 MPa	>1.5 MPa	>1.5 MPa	>1.5 MPa	>1.5 MPa	>1.5 MPa
Compressive Strength (BS 6319)	>50 N/mm <sup>2</sup>	60 N/mm <sup>2</sup>	>40 N/mm <sup>2</sup>	60 N/mm <sup>2</sup>	-	60 N/mm <sup>2</sup>	>60 N/mm <sup>2</sup>	60 N/mm <sup>2</sup>	>55 N/mm <sup>2</sup>	>28 N/mm <sup>2</sup>
Flexural Strength (BS 6319)	20 N/mm <sup>2</sup>	20 N/mm <sup>2</sup>	-	40 N/mm <sup>2</sup>	-	40 N/mm <sup>2</sup>	>40 N/mm <sup>2</sup>	15 N/mm <sup>2</sup>	>20 N/mm <sup>2</sup>	>7 N/mm <sup>2</sup>
Tensile Strength (BS 6319)	10 N/mm <sup>2</sup>	15 N/mm <sup>2</sup>	-	15 N/mm <sup>2</sup>	-	25 N/mm <sup>2</sup>	>25 N/mm <sup>2</sup>	10 N/mm <sup>2</sup>	>8 N/mm <sup>2</sup>	-
FeRFA Type (BS 8204-6)	8	6	4	5	1	5	1		8	1
Slip Resistance* (BS 7976-2)	Dry >40	Dry >40	Dry >40	Dry 67	Dry >40	Dry 67	Dry 67	Dry >40	Dry >40	Dry >60
Speed of Cure** (per layer)	Traffic: 48hr Chem: 7days	Traffic: 2hr Chem: 2hr	Traffic: 1hr Chem: 1hr	Traffic: 1hr Chem: 1hr	Traffic: 24hr Chem: 7days	Traffic: 48hr Chem: 7days	Traffic: 48hr Chem: 7days	Traffic: 48hr Chem: 7days	Traffic: 48hr Chem: 7days	Traffic: 8hr Chem: 7days
Fire Resistance (EN 13501-1)	BFL-S1	CFL-S1	Class 2 (Indicative)	BFL-S1	BFL-S1	BFL-S1	Class 2 (Indicative)	CFL-S1	BFL-S1	-
Product Sample:										
	Cream	Blue 7750	Dali	Light Blue	Off White	Dark Green	Yellow	Red 7500	Tile Red	K-Screed

\*The slipperiness of flooring materials can change significantly due to the installation process, after short periods of use, due to inappropriate maintenance or longer term wear. To meet slip resistance value requirements for wet conditions, textured systems are recommended. Please contact a technical advisor at your local Flowcrete office for further details and specifications.

\*\*Figures shown at 20°C. For speed of cure at 10°C and 30°C, please contact your local Flowcrete office.



# SPECIALIST - flooring features

There are a number of factors affecting the performance of pharmaceutical environments, which left untouched, can have a negative impact on the bottom line. Flowcrete floors offer the following characteristics - helping to improve productivity from the ground upwards:

## Hygiene

Hygiene and sanitation is one of the most pressing issues facing pharmaceutical environments. Flowcrete manufactures seamless floor and wall coatings that eliminate the cracks and crevices prone to harbouring dirt and dust as well as polyurethane coatings containing a natural silver-based antimicrobial additive that destroys bacteria on the surface of the floor.

- Flowfresh MF
- Mondéco TZ



## Slip Resistance

Slip resistant floor coatings go a considerable way to reducing the slips, trips and falls that can occur in wet processing environments. Flowcrete offers a number of positively textured resin coating systems that can often be adjusted to suit slip resistance requirements and can be laid to falls to ensure any water or liquid spillages can flow better to drains.

- Flowfresh HF / RT
- Flowfast Quartz



## Temperature Resistance

The climate found in laboratories and testing areas can vary from intense heat to extreme cold. Flowcrete's specialist floor systems have been specially formulated for use in areas subjected to a wide range of temperatures and offer sufficient durability and thickness to withstand demanding hot water cleaning processes.

- Flowfresh HF / RT
- Mondéco TZ



## Chemical Resistance

Flooring in laboratories can be subject to a wide range of corrosive and potentially degrading solvents, acids and chemicals in both its daily operations and cleaning processes. Flowcrete flooring materials offer excellent resistance and durability against a wide spectrum of substances commonly associated with the medical industry.

- Flowshield Quartz
- Peran STB



## Fast Track Installation

The downtime involved in both new build or refurbishment works can have an impact on the bottom line for pharmaceutical facilities. Flowcrete floors have been designed to accommodate fast track installation and can often be applied overnight and/or onto surface dry concrete. Our specialist MMA flooring range can deliver cure times of just two hours to keep downtime to a minimum.

- Flowfast Quartz
- Flowfast Terrosso



## Antistatic

Aggressive solvents used in rigorous clean down processes need to be stored securely away from any electrostatic charge that could result in ignition or even explosion. Antistatic floor coating systems from Flowcrete can help to expel any undesirable electrostatic charge from the locality of such environments as well as offer suitable corrosion protection on the surface of the floor.

- Flowfresh ESD MF
- Peran ESD STB
- Flowshield ESD



# FOCUS ON - the Floorzone

An expert insight into flooring for the pharmaceutical industry...



It is vital for pharmaceutical innovations that laboratory, research & development and production environments are free from germs and bacteria that could interfere with advancements. Our range of hygienic flooring solutions can include Polygiene®, a silver-ion additive that kills bacteria on contact.

Our resin and seamless terrazzo flooring systems are the ideal platform for clean rooms, processing lines and R&D laboratories. Combined with added chemical and electrostatic resistance – our seamless surfaces are well suited to sterile processing environments.

Choosing fit for purpose, quality fixtures and fittings is key to complying with rigorous hygiene standards - particularly when it comes to floors and walls - both of which can act as a vital line of defence in the fight against bacteria and germs.

Flowcrete offers a variety of speciality resin-based coating systems, including epoxies, polyurethanes, acrylics and methyl methacrylates (MMAs), which can be applied to provide a protective barrier against these contaminants.

With the **Floorzone** package, pharmaceutical sector clients can select from a wide range of systems all tailored to deliver the durability and performance characteristics required to meet a whole range of service, application and aesthetic conditions.

## ENVIRONMENTAL - protection



The Flowcrete Group is committed to developing our operations in a sustainable manner and has a holistic approach to producing environmentally friendly flooring materials and using our planet's resources responsibly. Significant point enhancements can be obtained under the **LEED®** (U.S. Green Building Council) programme by utilising Flowcrete products. Our Floorzone concept has been designed with sustainability in mind and offers a number of key environmental benefits.



To find out more, visit [www.flowcrete.in](http://www.flowcrete.in)

TRANSFORMING PHARMACEUTICAL ENVIRONMENTS -

# case studies



## Mylan Laboratories, India.

Flowcrete India has played a part in a major refurbishment project for Mylan Laboratories at the company's state-of-the-art facility in Aurangabad located within the Maharashtra district of India.

Having evaluated a number of specialist floor coating materials for the 3,000m<sup>2</sup> warehouse, Flowcrete India's smooth polyurethane resin system, Flowfresh MF, was selected to cover the entire area.

Flowfresh MF is a chemical resistant, antimicrobially-treated polyurethane screed, designed for use in industrial areas subject to medium-duty foot and vehicular traffic.



## Lonza Pharmaceuticals, Singapore.

Having previously used the product in their USA plant, 8,000m<sup>2</sup> of Flowfast Terrosso has been installed in production areas, clean rooms, laboratories and corridors at the new build Lonza Pharmaceuticals headquarters, located in the Tuas Industrial Park, Singapore.

Flowfast is ready to use just two hours after application – making light work of transforming environments at ground level. The project at Lonza is the first application of Flowfast in Singapore.

The client has used this type of floor in their USA plant, and has chosen it for speed of installation, combined with the abrasion and scratch resistance, as well as aesthetics.



## Abbott Healthcare India.

One of India's largest pharmaceutical plants enhanced its site by installing a hygienic resin coating over its aging concrete floor.

The warehouse floor of Abbott Healthcare's state-of-the-art, Baddi based manufacturing facility was deteriorating, with continuous trolley movement causing considerable dusting. The impacts of the trolley wheels were also breaking the floor movement joints and damaging the substrate.

To rectify the dusting, 3,000m<sup>2</sup> of Flowfresh MF from Flowcrete India was installed in a 3mm thick system and 2,000m<sup>2</sup> of Flowfresh Coating was applied under the warehouse stacker, all within a four week period. Due to the inherent strength and resilience of Flowfresh it created a protective, seamless barrier to stop further damage to the concrete substrate.



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\*Partner Company

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