

Specialty Polymer Flooring Systems for:

## PHARMACEUTICAL FACILITIES

- Production Plants
- Laboratories & Clean Rooms
- Chemical Storage Areas
- Process Areas



# Welcome to FlowResin

A critical consideration in the design and construction of pharmaceutical facilities is the flooring used to protect the different operational areas found within. Pharmaceutical brands require floor and wall systems that meet strict hygiene and safety protocols in line with Current Good Manufacturing Practices (CGMPs).

Whether found in production suites, assembly lines or research and development laboratories, flooring materials must offer a wealth of performance characteristics including excellent abrasion, chemical and impact resistance, the ability to withstand extreme temperature swings and provide an easily cleaned, smooth and hygienic finish.

floor and wall systems designed to cater for all areas within pharmaceutical facilities.

## Application Suitability



Production Plants



Assembly Lines



Laboratories



Chemical Storage Areas



Packaging & Warehousing



Corridors & Stairwells



Maintenance & Storage



Gowning Rooms & Airlocks



Rest Rooms & Administrative Areas



Multi-Story Parking Facilities

For the application suitability of each system, look out for the check mark symbol throughout the brochure.

Flowfresh materials contain Polygiene®, a silver ion antimicrobial additive designed to offer enhanced hygiene underfoot.

## Polygiene® Effectiveness



Salmonella Typhi	100%
MRSA	100%
Enterococcus Faecalis	100%
E-coli	100%
Staphylococcus Aureus	100%
Listeria	100%
Streptococcus Pyogenes	100%
C.difficile	100%
Pseudomonas Aeruginosa	100%
Proteus Vulgaris	100%
Campila Bacta	100%

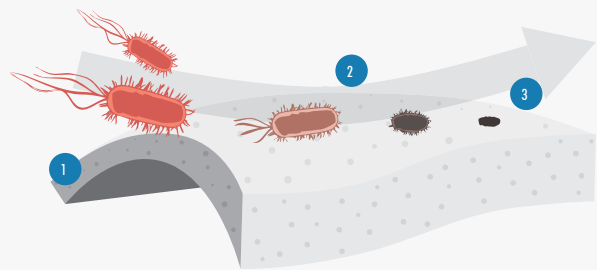
## CGMP Compliant Epoxy, Polyurethane & MMA Flooring

Pharmaceutical production facilities require smooth floors, walls and ceilings that reduce the risk of contamination or bacteria build-up while at the same time ensure a safe, non-slip profile underfoot.

Polymer flooring systems, including epoxy, polyurethane and MMA systems, ensure a non-porous, smooth and seamless surface where there is nowhere for bacteria or mold spores to grow.

HACCP International certified and ISO 22196 compliant cementitious urethane flooring materials offer enhanced protection with the inclusion with the inclusion of Polygiene®, a silver-ion antimicrobial agent, designed to protect the surface caused by microbial growth.

### How Does Polygiene® Work?



- 1 The silver ions are homogeneously distributed throughout the floor.
- 2 The silver ions migrate to the surface.
- 3 They protect the surface from degradation caused by microbial growth.



# Flowfast Flakes (120 mils)

An eye-catching, wear resistant and fast cure MMA flooring system with a decorative flake finish. Flowfast Flakes consists of vibrant vinyl flakes in clear resin and delivers a fully trafficable surface just 60 minutes from application. The system is also available in epoxy - [Peran Floor Flakes](#).

- ✓ PRODUCTION AREAS , ASSEMBLY LINES, GOWNING ROOMS & AIRLOCKS, CORRIDORS & STAIRWELLS



## Standard Colors:



### TEMPERATURE RESISTANCE:

Continuous Exposure: Up to 160°F

### SLIP RESISTANCE (WITH ALUMINIUM OXIDE):

BS 7976-2 Dry: 63  
Wet: 56

### ABRASION RESISTANCE:

ASTM D 4060, CS17 Wheel, 1,000 Cycles 0.085 g loss



# Flowfresh SRQ (1/4" - 5/16")

A slurry-broadcast and HACCP International certified antimicrobial treated cementitious urethane floor system. Flowfresh SRQ provides a positively textured and vibrantly colored floor finish, which is resistant to thermal shock and moisture vapor transmission. A variety of top coats are available to achieve different levels of chemical resistance.

- ✓ PRODUCTION AREAS , ASSEMBLY LINES

## Standard Colors:



### TEMPERATURE RESISTANCE\*:

Continuous Exposure: 180°F  
Intermittent Spills: 210°F

### COEFFICIENT OF THERMAL EXPANSION:

ASTM C 531 1.5 x 10<sup>-5</sup>in/in/°F

### ABRASION RESISTANCE:

ASTM D 4060, CS17 Wheel, 1,000 Cycles 0.05 g loss

\*Temperature resistance values shown apply when using Flowcoat CR as the topcoat.

The applied colors may differ from the examples shown. For a full technical profile, color chart and samples, contact your local Key Resin Company office.



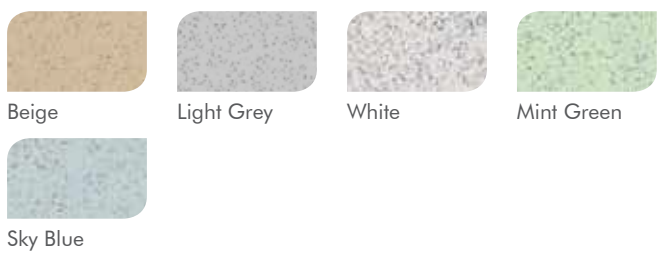
FlowResin materials are resistant to a wide range of aggressive chemicals and temperatures up to 350°F.

## Flowshield Quartz (1/8")

A high-build, self-leveling and pigmented epoxy floor system with a decorative, hygienic quartz bead finish. Flowshield Quartz is suited to environments that experience medium to high levels of traffic and aggressive cleaning regimes.

- ✓ LABORATORIES, GOWNING ROOMS & AIRLOCKS

### Standard Colors:



<b>TEMPERATURE RESISTANCE:</b>	
Continuous Exposure:	Up to 140°F
<b>SLIP RESISTANCE:</b>	
PTV BS 7976-2 (Using TRRL Rubber Slider)	Dry: 78 Wet: 14
<b>ABRASION RESISTANCE:</b>	
ASTM D 4060, CS17 Wheel, 1,000 Cycles	0.075 g loss

FlowResin materials offer a seamless, smooth finish that is easily cleaned and does not allow the collection of dust in line with GMP regulations.

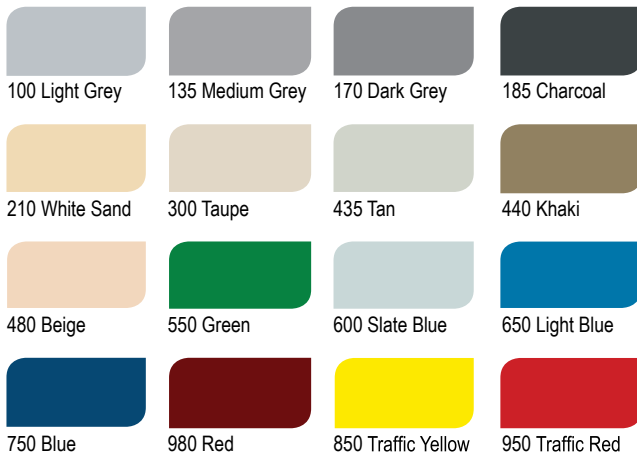


## Flowgard WW (6 - 8 mils)

A high performance, non-porous and pigmented epoxy resin coating for use on walls and ceilings with an optional fiberglass reinforced lining available. Flowgard WW is suitable for use in medium to heavy duty process areas.

WALLS & CEILINGS

### Standard Colors:



#### TEMPERATURE RESISTANCE:

Continuous Exposure: Up to 140°F

#### ABRASION RESISTANCE:

ASTM D 4060, CS17 Wheel, 1,000 Cycles 0.015 g loss

#### VAPOR PERMEABILITY:

ASTM E 96:90 20 g/m<sup>2</sup>/mm/24 hrs

The applied colors may differ from the examples shown. For a full technical profile, color chart and samples, contact your local Key Resin Company office.

## Peran STB Broadcast (120 mils)

A decorative, hard wearing, double broadcast epoxy floor system containing colorful quartz aggregates. Peran STB Broadcast delivers a durable surface suited to wet and dry processing areas.

PRODUCTION AREAS, MAINTENANCE & STORAGE AREAS



### Standard Colors:



Spring Glen



Grey Mist



Rococo



Blueberry Ice



Kitchen Red



Shell

#### TEMPERATURE RESISTANCE:

Continuous Exposure:	Up to 140°F
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#### SLIP RESISTANCE:

PTV BS 7976-2 (Using TRRL Rubber Slider)	Dry: 60 Wet: Dependent on specification
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#### ABRASION RESISTANCE:

ASTM D 4060, CS17 Wheel, 1,000 Cycles	0.070 g loss
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## Peran STB (1/4")

A decorative, hard wearing epoxy flooring system containing colorful and durable quartz aggregates. Peran STB delivers a durable surface suited to wet and dry areas and offers an anti-slip finish to meet slip resistance requirements.

PRODUCTION AREAS, MAINTENANCE & STORAGE AREAS

### Standard Colors:



Spring Glen



Grey Mist



Rococo



Blueberry Ice



Kitchen Red



Shell

#### TEMPERATURE RESISTANCE:

Continuous Exposure:	Up to 140°F
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#### SLIP RESISTANCE:

PTV BS 7976-2 (Using TRRL Rubber Slider)	Dry: 60 Wet: Dependent on specification
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#### ABRASION RESISTANCE:

ASTM D 4060, CS17 Wheel, 1,000 Cycles	0.070 g loss
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## Flowcoat CR (28 - 30 mils)

A 100% solids, high performance and highly chemical resistant epoxy floor coating system. Flowcoat CR offers enhanced protection against the most common acids, alkalis, caustic soda, salt solutions, oils, fats and sanitizers.

CHEMICAL STORAGE AREAS

### TEMPERATURE RESISTANCE:

Continuous Exposure:	Up to 160°F
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### SLIP RESISTANCE:

PTV BS 7976-2 (Using TRRL Rubber Slider)	Dry: 60 Wet: Dependent on specification
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### ABRASION RESISTANCE:

ASTM D 4060, CS17 Wheel, 1,000 Cycles	0.06 g loss
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### Standard Colors:



Light Grey



Medium Grey



Dark Grey



Brick Red

## Flowchem VE (40 - 125 mils)

A horizontal and vertical roller applied vinyl ester coating range with excellent chemical resistance to a wide range of highly concentrated and aggressive solvents including CIP liquids. Flowchem VE RC & Flowchem VE BC offer corrosion protection for concrete walls, floors, curbs, equipment bases, trenches and drains, subject to medium to heavy traffic conditions respectively. The system is also available with glass fiber reinforcement for areas of secondary containment - [Flowchem VE GL](#)

CHEMICAL STORAGE AREAS

### Standard Colors:



Grey



Red



### TEMPERATURE RESISTANCE:

Continuous Exposure:	320°F
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Intermittent Spills:	350°F
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### FLEXURAL MODULUS OF ELASTICITY:

ASTM C 790	RC - $10.9 \times 10^5$ psi BC - $15.3 \times 10^5$ psi GL - $15.6 \times 10^5$ psi
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### BARCOL HARDNESS:

ASTM D 2583	>35
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# Flowfast Industrial (200 mils)



A hard wearing, chemical resistant and fast cure MMA flooring system with a matte colored finish. Flowfast Industrial is a thick-set, durable and slip resistant flooring system that delivers a fully trafficable surface just 60 minutes from application.

✓ ASSEMBLY LINES, CORRIDORS & STAIRWELLS

## Standard Colors:

100 Light Grey	135 Medium Grey	170 Dark Grey	185 Charcoal
210 White Sand	300 Taupe	435 Tan	440 Khaki
480 Beige	550 Green	600 Slate Blue	650 Light Blue
750 Blue	980 Red	850 Traffic Yellow	950 Traffic Red



### TEMPERATURE RESISTANCE:

Continuous Exposure: Up to 160°F

### SLIP RESISTANCE:

BS 7976-2  
Dry: 80  
Wet: 60

### ABRASION RESISTANCE:

ASTM D 4060, CS17  
Wheel, 1,000 Cycles  
0.080 g loss



## Chemical Resistance Data\*

	Epoxy	PU	MMA	VE
Potassium Hydroxide	☹️	☹️	☹️	☹️☹️
Phosphoric Acid	☹️	☹️	☹️	☹️☹️
Citric Acid	☹️	☹️	☹️	☹️☹️
Hydrogen Peroxide	☹️	☹️	☹️	☹️☹️
Acetic Acid				☹️☹️
Sodium Hydroxide	☹️	☹️	☹️	☹️☹️
Ethylene Glycol	☹️	☹️	☹️	☹️☹️
Nitric Acid	☹️	☹️	☹️	☹️☹️
Hydrochloric Acid				☹️☹️
Boric Acid	☹️	☹️		☹️☹️
Sodium Chloride	☹️	☹️	☹️	☹️
Methyl Ethyl Ketone				☹️☹️
Acetone				☹️☹️
Benzene		☹️		☹️☹️
Deionized Water	☹️	☹️	☹️	☹️
Hydrofluoric Acid				☹️

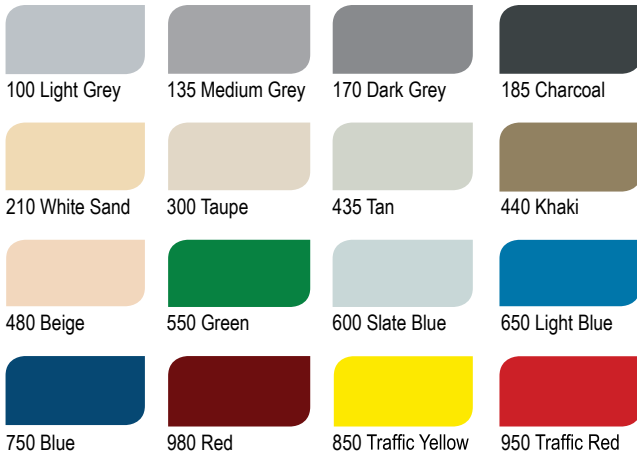
\*Full chemical resistance data available on [www.flowcreteamerica.com](http://www.flowcreteamerica.com)

# Flowtex (3/16" - 1/4")

A trowel applied epoxy floor mortar, with excellent durability, abrasion resistance and ease of application. Flowtex offers excellent abrasion, wear, scratch and chemical resistance to deliver a robust surface for use in heavy-duty processing environments.

PACKAGING AREAS, LOADING DOCKS & WAREHOUSING

## Standard Colors:



### TEMPERATURE RESISTANCE:

Continuous Exposure:	140°F
Intermittent Spills:	200°F

### FLEXURAL MODULES OF ELASTICITY:

ASTM D 790	2.01 x 10 <sup>6</sup> psi
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### SLIP RESISTANCE:

PTV BS 7976-2 (Using TRRL Rubber Slider)	Dry: 70 Wet: Dependent on specification
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FlowResin also manufactures a range of wall coatings and coving mortars to provide a hygienic transition between the floor and wall.



## Flowcoat HTS (25 mils)

A durable polyurethane floor coating system characterized by high abrasion and chemical resistance. Flowcoat HTS is a high-solids, low odor and UV light stable flooring system designed for areas subject to sustained traffic.

PACKAGING AREAS

### Standard Colors:



### TEMPERATURE RESISTANCE:

Continuous Exposure: Up to 160°F

### SLIP RESISTANCE:

PTV BS 7976-2 (Using TRRL Rubber Slider) Dry: 70  
Wet: Dependent on specification

### ABRASION RESISTANCE:

ASTM D 4060, CS17 Wheel, 1,000 Cycles 0.010 g loss

## Deckshield ID (40 mils)

A flexible polyurethane deck coating system for use on intermediate decks of multi-story parking structures. Deckshield ID enhances multi-story parking environments and ensures safety underfoot with enhanced traction. The system is also available in MMA - [Deckshield Rapide ID](#).

PARKING STRUCTURES

### Standard Colors:



### FIRE RESISTANCE:

BS 476-3 Designated EXT.FAA

### SLIP RESISTANCE (WITH ALUMINIUM OXIDE):

BS 7976-2 Dry: 92  
Wet: 46

### ABRASION RESISTANCE:

ASTM D 4070, CS17 Wheel, 1,000 Cycles 0.050 g loss

# FlowResin

for the world at your feet™

An industry leader in seamless resin flooring, FlowResin provides much more than just a surface to walk on. Clients choose our seamless resin flooring systems for their appearance and wide array of performance advantages:

- ✓ Antimicrobial
- ✓ Chemical Resistant
- ✓ Easily Cleaned Surface
- ✓ Impact Resistance
- ✓ Low Temperature
- ✓ Slip Resistant
- ✓ Thermal Shock Resistant
- ✓ Anti-static
- ✓ Corrosion Protection
- ✓ Fast Cure
- ✓ Low Odor
- ✓ Moisture Tolerant
- ✓ Stain Resistant
- ✓ Wear Resistant

Key Resin Company manufactures FlowResin commercial and industrial systems in Batavia, Ohio and Phoenix, Arizona with convenient warehouse locations throughout the country. We proudly serve expanding business opportunities across the continent including the USA, Canada, Latin America and the Caribbean.

Let's talk about your next project and the best solution for 'the world at your feet'



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