Flowcrete

for the world at your feet

TIPS & CONSIDERATIONS FOR AVOIDING FLOOR FAILURE IN BREWERIES

www.flowcrete.in

Getting the brewery design right is vital to creating a facility that will safely and consistently produce large quantities of high quality beer. If the equipment or building materials are not up to the task then the facility won't be able to properly function and the beer that comes off the conveyor belt may be impaired because of it.

An important part of any brewery is the floor underfoot, as it has to maintain a clean and safe surface despite the corrosive ingredients, heavy equipment, frequent cleaning, impacts and wear that it will inevitably be exposed to. If the floor is not able to survive this abuse then it will crack and fail, slowing down operations as staff have to navigate potential trip hazards and making the brewery vulnerable to contaminant build up that could spoil the beer.

Flowcrete India offers specialist epoxy and polyurethane coating systems for all areas of breweries.

STORAGE AREAS
Flowcoat SF41 | Flowcoat HTS

REFRIGERATED STORAGE AREAS
Flowcoat SF41 | Flowcoat HTS

FERMENTATION ROOMS
Flowfresh HF | Flowfresh SL | Flowfresh SR

RESTROOMS
Peran STB Broadcast | Peran STB
Peran Floor Flakes | Flowtallics

TASTING ROOMS / BAR
Flowtallics | Peran STB | Peran Floor Flakes

DELIVERY AREAS
Deckshield ED | Deckshield ED Rapide

FOYERS / ENTRANCES
Flowtallics | Peran STB | Peran Floor Flakes

This guide has been designed to offer practical advice on floor failure avoidance as well as to provide surface recommendations and the reasons to choose Flowcrete floors for clients working in the beverage industry.

→ TYPICAL REASONS FOR FLOOR FAILURE

→ TALK TO THE EXPERTS

REASON #1

HIGH IMPACT RESISTANCE

The floor should have the mechanical strength to withstand continuous impacts from kegs, barrels, pallets, forklift trucks and dropped tools as well as being capable of carrying the compressive load from the site's extremely heavy equipment.


ALAMO
PILSNER

REASON #2

ANTI-SLIP RESISTANCE

Breweries are inherently slippery places, prone to wet surfaces and standing water. To minimise the risk of slips and trips in wet areas the floor needs to have an anti-slip texture that enhances traction underfoot. This can easily be done with resin finishes by broadcasting anti-slip aggregates into the coating.

Slips and **trips** account for an average of

20%

of reported injuries.

An estimated 391,000 people die each year, world wide, due to falls.

Slips and trips in the workplace result in an average of

21 SICK DAYS

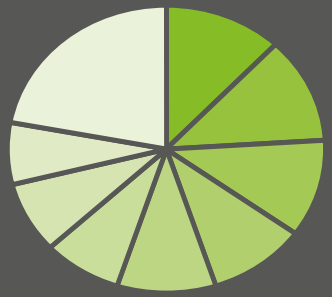
Of all reported injuries from slips, trips and falls in 2003-2004,

63% involve fractures.

Slips, trips and falls injury claims cost an average of

$16,500

There are just eight industries that make up **78%** of all injury claims resulting from slips, trips and falls.



- MANUFACTURING (12%)
- MEDICAL (12%)
- CONSTRUCTION (11%)
- RETAIL (10%)
- TRANSPORT & STORAGE (10%)
- PROPERTY (8%)
- ACCOMMODATION (8%)
- EDUCATION (7%)
- ALL OTHER INDUSTRIES (22%)

In the United States, slips, trips & falls account for

11% OF HOSPITAL BED DAYS

REASON #3

THERMAL SHOCK RESISTANCE

Excellent resistance to rapid and extreme temperature shifts is also vital, as the floor will likely be exposed to factors such as steam cleaning and hot production
by-products.

WHAT IS THERMAL SHOCK?

All flooring material expands and contracts with changes in temperatures. Only when this occurs at a rate significantly different than the concrete substrate, does it lead to delamination, cracking and other deterioration.

Thermal shock resistant flooring and coatings expand and contract at a rate very similar to the concrete slab below, helping to ensure that your seamless, hygienic industrial floor functions exactly as it should.

REASON #4

ABRASION RESISTANCE

Asides from forceful physical impacts, the floor needs to minimise abrasions and wear from a number of sources, including hose ends, foot traffic and heavily laden trolleys.

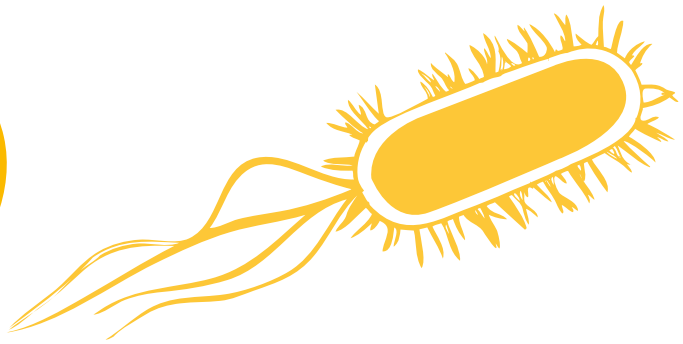
REASON #5

ANTIBACTERIAL BENEFIT

The Flowfresh range of HACCP International certified, polyurethane floors incorporates the Polygiene® antibacterial agent, which creates a finish able to eliminate up to 99.9% of bacteria in contact with it. This property means that brewery operators can rest assured that the floor is as clean & hygienic as possible!

DID YOU KNOW?

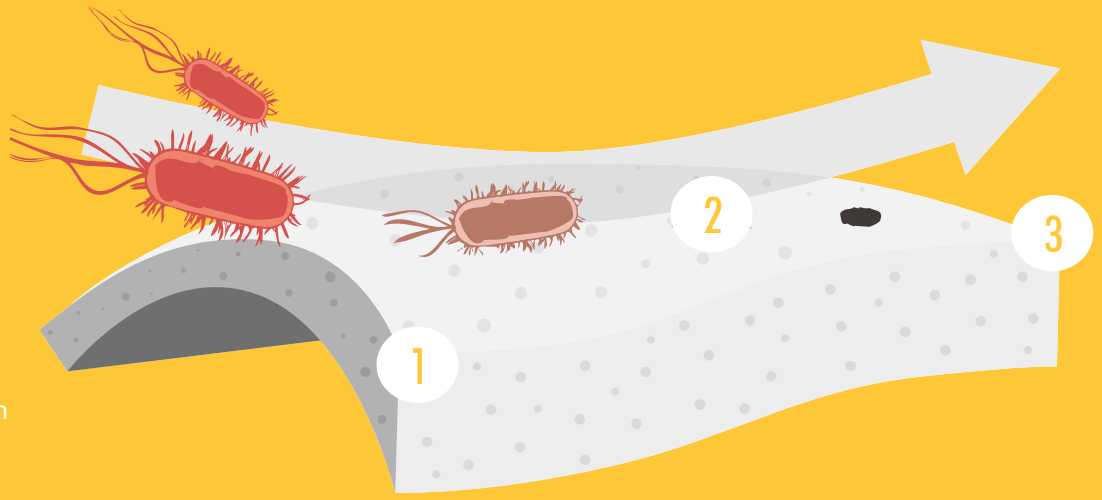
Bacteria multiply by splitting into halves every twenty minutes, meaning that in just three hours one bacterium will become about 1020!



POLYGIENE®

Antimicrobial Additive

1. The silver ions are homogenously distributed throughout the floor.
2. The silver ions migrate to the surface of the floor.
3. The silver ions inhibits the formation of bacteria on the surface by penetrating the cell membrane.



REASON #6

HYGIENIC PROPERTIES

Floors in breweries must be food safe to discourage the growth of harmful microorganisms. If the floor is not easy to clean then spillages can be left unaddressed and can develop into stains that permanenantly damage the coating, leading to a higher chance of the finish inadvertently promoting bacteria build up. Additionally, if the surface is uneven then waste water can pond and stagnate, setting the scene for a serious contamination incident!

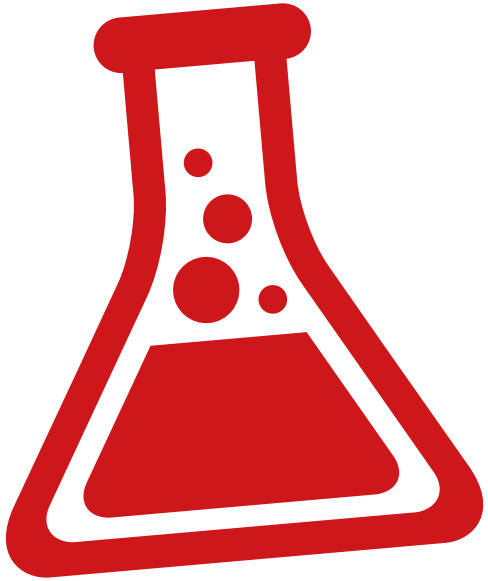
To avoid this scenario, the finish needs to be seamless, impervious and easy to clean.

DRAINAGE

Laying the coating to a fall and putting stainless steel drainage at the lowest point of the floor it makes it very simple to keep the floor area free from grime, dirt and standing water.

REASON #7

CHEMICAL RESISTANCE



Yeast, alcohol, malts, enzymes, brewing sugars and harsh cleaning chemicals could all erode the finish over time. The areas where any corrosive ingredients, acids and alkaline chemicals are situated need to have floors suitably tailored to withstand prolonged exposure to the substances identified as being in use in that area of the facility.

It is not just the sanitising agents and disinfectants used to clean the floor that need to be considered, as the products employed to clean the equipment can easily spill or drop onto the floor.

CHEMICAL RESISTANCE OF RESIN FLOORING

Chemical Substance	Cementitious Polyurethane	Epoxy	MMA
Hydrochloric Acid	•	○	•
Sulphuric Acid	•	○	•
Citric Acid	•	•	○
Oleic Acid	•	-	-
Acetic Acid	•	-	•
Lactic Acid	•	○	•
Ethanol	•	•	-
Methanol	•	-	-

Chemical Substance	Cementitious Polyurethane	Epoxy	MMA
Sugar Syrups	•	•	-
Caustic Soda	•	•	•
Blood	•	•	•
Oil Ingredients	•	•	•
Detergents	•	•	•
Beer	•	•	•
Wine	•	○	○
Whiskey	•	○	○

• High Resistance ○ Limited Resistance - No Resistance

Chemical Resistance of Resin Flooring Comparison Chart: Flowcrete Group Ltd, 2013.

TALK TO THE EXPERTS

This guide has been produced to give an overview of the resin choices available and factors to consider when specifying a resin flooring system within the hygienic design of a brewery.

Flowcrete has been successfully manufacturing and supplying flooring material to the food industry for over 30 years, securing high profile installations at Unilever, Kraft, Coca-Cola, Nestlé, Cargill, PepsiCo and Cadbury among other blue-chip food manufacturers and agribusiness brands.

Flowcrete's Flowfresh range has been specially formulated for this industry and can play a critical role in preventing microbiological build-up or contamination. Based on cementitious urethane chemistry, Flowfresh also incorporates Polygiene® – a silver ion based antimicrobial additive, which not only reduces surface bacteria by up to 99.9% but continues to remain active for the lifetime of the product.

Detailed recommendations and advice is available from our network of regional technical and sales representatives.

DID YOU FIND THIS EBOOK USEFUL?
GET MORE FROM FLOWCRETE...


www.flowcrete.in


blog.flowcrete.com


@flowcreteindia


"Flowcrete Group Ltd"


news.cision.com/flowcrete

youtube.com/flowcretetv


slideshare.net/flowcrete


india@flowcrete.com