

WHITEPAPER



TAKING THE HEADACHE OUT OF FLOORING SPECIFICATION FOR FACILITIES MANAGERS



An overview of the use
of Methyl Methacrylate
flooring within industrial and
commercial facilities.

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Taking the Headache Out of Flooring Specification for Facilities Managers



Flowcrete recognises the important role that facilities managers play within both commercial and industrial organisations as well as the constant challenges that they face handling the day-to-day operational demands of multi-purpose, multi-unit buildings. A key area of the facilities management role concerns the on-going cleaning and maintenance programme implemented within a facility. However, much of this programme can be facilitated at specification stage by selecting specialist materials that can positively assist with insitu care regimes.

Flowcrete is pleased to work alongside facilities management professionals to develop innovative and effective building protection solutions, in areas such as floor care in order to deliver materials that offer demonstrable commercial and sustainable benefits.

In order to alleviate the stress when selecting a suitable floor covering in either new-build facilities or when replacing or refurbishing an existing floor finish, Flowcrete has compiled the following whitepaper, which addresses a variety of considerations throughout the floor specification process.

Installation Downtime

Replacing a worn, failing or damaged hard flooring surface can take days or even weeks to reach a sufficient cure in manufacturing or heavy duty processing facilities to bear pressures from heavyweight equipment or machinery. Likewise, in commercial settings,

time spent waiting for flooring to reach full chemical cure means no footfall and therefore no money at the tills.

Faced with impending downtime and associated loss of revenue, it can be tempting to put off refurbishing an existing surface or

alternatively specify inadequate materials on new build projects that may result in a reduced operational downtime but do not meet the service criteria of the facility itself.

High speed flooring solutions that have been formulated to accelerate resin cure time can assist in minimising operational downtime for the client.

One of the fastest-cure resin-based solutions available is methyl methacrylate (MMA) flooring. MMA flooring systems are designed based on modified acrylic resins and can be applied on old or new concrete as well as asphalt, tiles, metal or wood. This means that there is no need to remove the existing floor covering in refurbishment situations as MMA systems can be used to simply floor over the existing material, saving a considerable amount of time.

On top of this, the material contains an accelerating catalyst that speeds up the rate of cure, resulting in almost immediate delivery of the area (1–2 hours) enabling full return to service or access to follow-on trades. There are options for reducing total downtime, in some cases almost to zero, but none of them are free.

Organisations must determine whether these options are worth the cost given the financial impact of downtime. Put differently, each organisation needs to decide what losses it is willing to accept and find a solution to avoid this worst case.

Average downtime costs vary considerably across industries and also vary significantly dependent on the scale of the business. For a medium sized business, the exact hourly cost may be lower, but the impact on the business much greater.

Downtime in Manufacturing Facilities

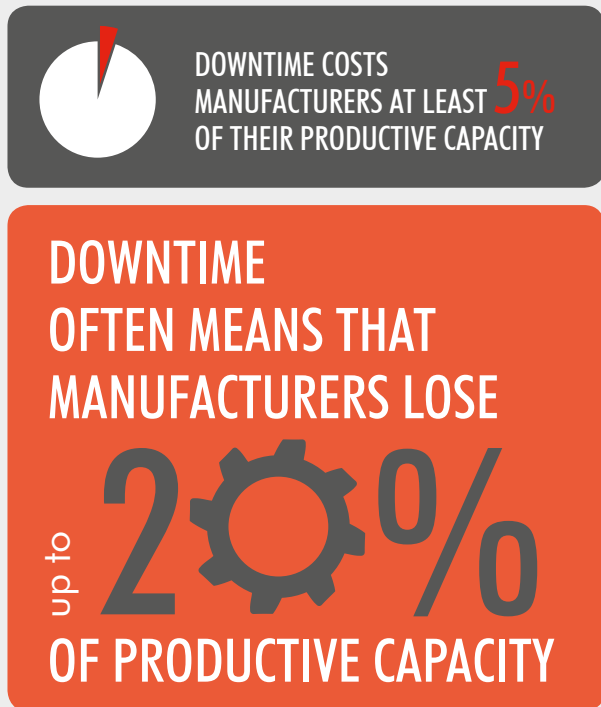


FIGURE 1: Downtime in Manufacturing Facilities, Flowcrete Group Ltd, 2013.

Cost of downtime is increased particularly for certain manufacturing businesses including food and pharmaceutical brands that must destroy all of their goods in progress.

Health & Safety Hazards

Thousands of slip and trip accidents occur each year in the workplace. Most often, these result in musculoskeletal injuries, cuts, bruises, fractures and dislocations. However, sometimes more serious disabling injuries can occur.

The cost of such slip and trip accidents to employers is vast. Not just financial losses, employers can also suffer product, plant or equipment damage, production delays and significant damage to the company's reputation in the most serious cases.

The cost of these accidents is also felt from a wider perspective, taking a significant toll on local health services and at times social security if victims are signed off for long periods of time.

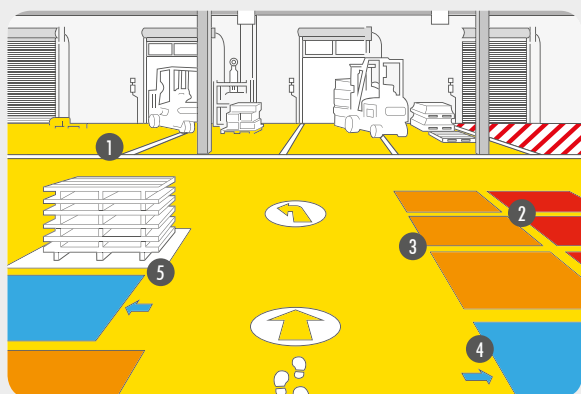


TIP:
Industrial facilities can minimise downtime with a fast-cure floor finish.

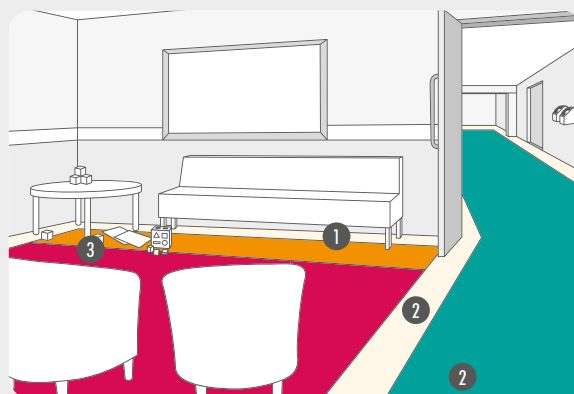
There are many things that can be done to reduce slip and trip hazards, including the careful selection of floor covering materials to increase slip resistance.

MMA flooring systems have an adjustable anti-slip profile that can be tailored to suit the specific needs of a working environment. Textured quartz beads provide additional traction underfoot in harder environments or those subject to wet service conditions.

Industrial and Commercial Zoning



- 1 Walkways, traffic lanes & work cells
- 2 Defects and scrap product areas
- 3 Product inspection zones
- 4 Materials and components areas
- 5 Equipment areas



- 1 Waiting areas
- 2 Walkways and corridors
- 3 Children's play area

Chemical Exposure

Flooring surfaces can endure some of the most punishing processes in any environment subject to a wide range of aggressive materials including leaning or sterilising preparations, to oils and fuels, to food products or derivatives, to natural or synthetic fats and oils, to highly aggressive acids, alkalis and solvents.

In order to protect the concrete substrate and the structure of the building as well as prevent any contamination to the ground below, it is important to ask which of these corrosive and erosive materials the floor may come into contact with whilst in service.

Is there an effective chemical spillage response plan in place? Does your existing floor demonstrate suitable resistance to prolonged or infrequent chemical attack from the solvents or products found in your environment.



TIP:

Attractive flaked MMA flooring can transform facilities on the fast track.

MMA flooring exhibits good resistance to a wide range of substances and chemicals including most organic and mineral acids, alkalis, salt solutions, natural oils and fats, disinfectants and cleansers as well as caustic soda.

The material is not susceptible to staining or discolouration, making it an ideal choice for supermarkets and grocery stores where spillages are commonplace.

Dirt Accumulation

One square metre of commercial carpeting captures almost 500g of dirt per week, which can cost as much as USD 600 to remove. During times of inclement weather, the amount of accumulated dirt can more than double, representing a costly headache for facilities managers.

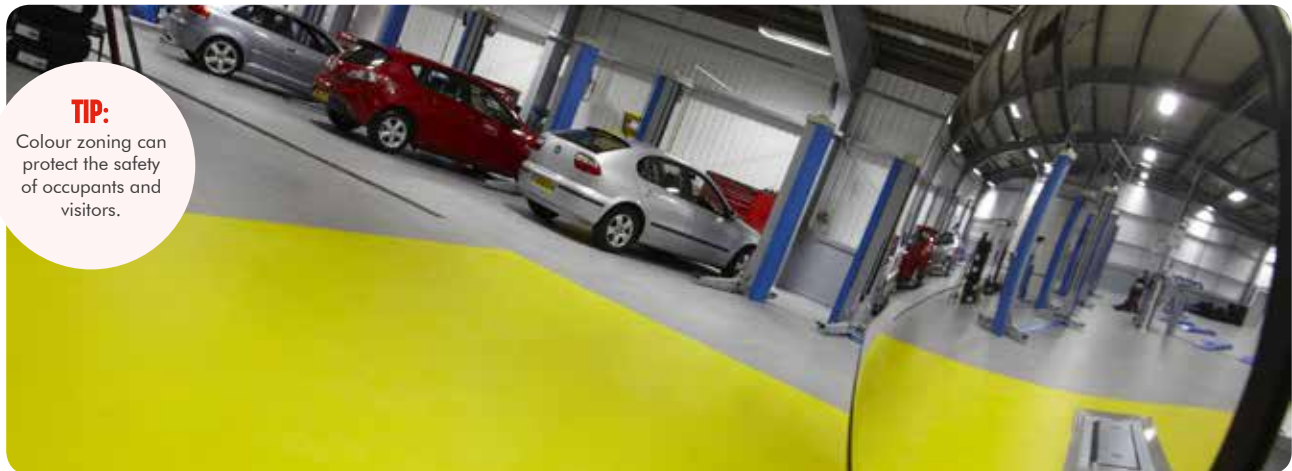
Hard flooring surfaces are less prone to accumulating dirt; offering a seamless, non-porous surface in which dirt, soil and rainwater can be easily wiped away.

MMA systems are laid in situ to deliver a seamless finish that is impermeable to liquids and will not suffer from pinholes, which can harbour dirt and spores. MMA resins are UV resistant and will not become brittle with age as is the case with tiles.

With MMA resins, we are also able to colour-match to neighbouring floor and wall interiors, which is virtually impossible when using tiles due to batch variances.

An MMA surface can be easily cleaned with a damp mop with no requirement for labour intensive and costly steam cleaning methods.

In turn, this ensures low long-term lifecycle costs to the client through a reduced maintenance and care programme.

**TIP:**

Colour zoning can protect the safety of occupants and visitors.

Appearance, Zoning & Signage

Colour, design and pattern can have a positive impact on the operational management of both commercial and industrial venues. Colour zoning and navigational signage can also contribute to the interior design of a facility, whilst also protecting the safety of occupants and visitors by designating specialist areas or walkways.

Thinking about the perfect environment for interaction, motivation and productivity, unique floor plans can be developed to create multifunctional spaces. It's all based on an intriguing floor plan using unusual shapes and curves that guide users through a building or facility - revealing a variety of individual zones used for different operations.

Zoning plans can also be used in more industrial settings or manufacturing environments to highlight areas of risk based on a full hazard assessment to determine potential contamination sources or safety threats.

Hard coatings such as MMA flooring solutions will help a floor to maintain its visual appearance longer than soft-flooring alternatives - enhancing the image and perception of the facility. The flexibility of the material allows for virtually any pattern, design or colour to be achieved on the surface of the floor.

Cleaning & Maintenance

Daily floor maintenance keeps floors looking their best, but it requires the proper tools, training, and schedule. Facilities Managers should partner with a supplier that can provide appropriate cleaning tools—including microfiber, dust, and wet mops—to help make daily cleaning effective and easier.

Floors should be vacuumed and/or mopped at least once per day, if not more, to remove dirt. Implement a daily cleaning schedule to help employees stay on track, and provide a visual representation to show employees which chemicals and equipment are required for each task to prevent cross-contamination.

Using the correct amount of product is also important to maintain floor appearance. Using too much chemical on hard floors can leave a dull appearance and causes floors to become slippery when wet.

Using too little chemical ineffectively cleans the floors and leaves dirt visible to guests and employees. Investing in a chemical dispensing system can assure proper mix ratios, reduce solution mixing time, and enhance safety by limiting employee and customer exposure to concentrated chemicals.

Hard Floor Coverings: Lifecycle Cost Comparison Diagram

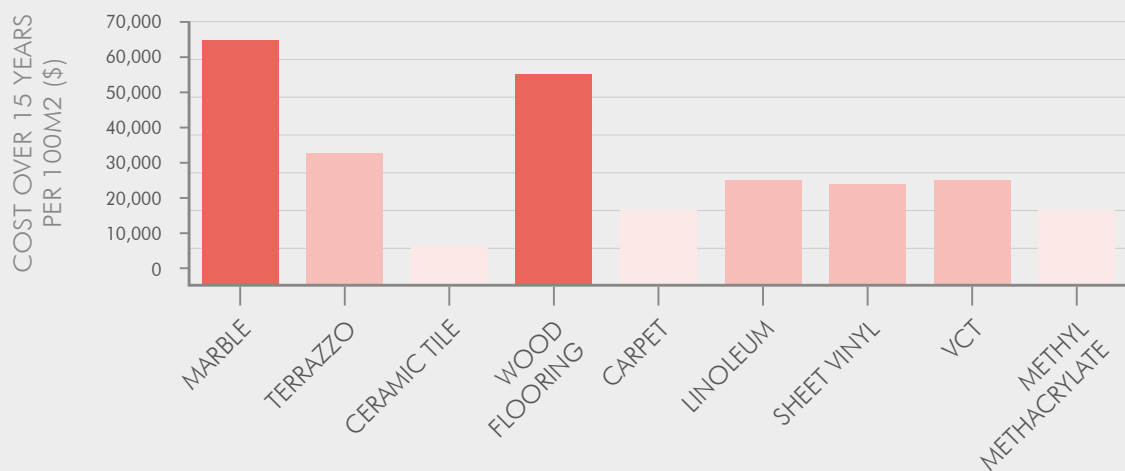


FIGURE 4: Hard Floor Coverings: Lifecycle Cost Comparison Diagram, Flowcrete Group Ltd, 2013.

While daily maintenance helps extend the life of flooring, floors will still wear out sooner or later without a long-term maintenance strategy.

Deep cleaning can dramatically extend the life of flooring and is an essential component of a successful floor maintenance program. It removes dirt; breaks down build-up; and extracts contaminants from grout, tile, and carpeted areas.

An efficient cleaning methodology successfully integrates temperature, agitation, chemicals, time, and extraction to achieve an unparalleled level of clean.

A comprehensive floor maintenance program that includes protection, maintenance, and deep cleaning helps facilities preserve their flooring investment and provide a safe and satisfying atmosphere.

Life Cycle Costs

Because of its visual importance and the sheer amount of product needed, replacing floors can be an expensive task. Costs include

removing old floors, any necessary repair work or priming work, installing new materials as well as any lost revenue due to business disruptions or costs associated with moving and storing equipment, machinery and any stock inventory.

On top of this, by the time a floor is due to be installed towards the end of the construction project, overspending at earlier stages or budget cuts can often lead to cutting costs on flooring even further. This can have disastrous results, leading to inadequate surface protection and the early onset of floor failure.

Life-cycle costing is a process that can help facilities executives understand exactly what a floor will cost over its lifetime and ensure that a product chosen will meet the needs of a facility.

Not only looking at the material and installation cost at the point of purchase, lifecycle costs take into consideration on-going cleaning and maintenance requirements, any factored upkeep and also end-of-life costs when the process begins again.

Life-cycle cost gives facilities executives a big picture view of the flooring options being considered and can safeguard against reducing budget at initial purchase when considering the significant savings that can be ascertained over time.

A major benefit of MMA flooring is that end of life MMA floors can be easily and quickly refurbished with another MMA floor finish.

In these instances each additional MMA layer chemically fuses to the previous layer creating a monolithic system that will not delaminate.

This unique technology allows for rapid, permanent upgrades and repairs at a fraction of the cost of replacing the floor with an alternative floor covering and with very little preparation required.

MMA flooring solutions are hardier, more robust and offer heightened performance characteristics to competitor tiles, sheet vinyl or industrial carpet systems, offering an enhanced durability and as result an enhanced service life.

This guide has been produced to provide an overview of the use of Methyl Methacrylate flooring within industrial and commercial facilities.

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

For more information on Flowcrete's specialist flooring solutions, get in touch with the team today...



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