

What to Consider When Choosing a Resin Flooring in the Food Industry



Factors influencing the selection of a flooring system include:

- Type and degree of traffic.
- Temperatures to which flooring will be exposed.
- Nature and duration of any chemical contact with the floor.
- Wet or dry service conditions.
- Slip resistance requirements.
- Ease of cleaning (including hygiene requirements).
- Moisture content of the substrate.
- Time available for application and cure of the flooring.
- Prevailing site conditions at time of installation.
- Cost.

The most appropriate flooring for any situation will depend upon the particular conditions to which it will be subjected, and the choice should be made in discussions between all the interested parties, including client, designer, contractor and John Lord.

Choosing the right resin flooring specification in the Food Industry – Top Ten Tips

1. Durability

In very general terms, the service life will be proportional to the applied thickness of the resin flooring system. However many operational factors will directly affect the performance including the severity of trafficking (wheel type and loading), the frequency and efficiency of cleaning, mechanical handling abuse and impact etc. In most Food Industry facilities there will be a variety of situations for each of which a different type of resin flooring will be most appropriate. Conversely there will be areas where some types are completely inappropriate.

2. Surface Smoothness and Slip Resistance

As a general rule, the smoother and less porous a floor surface, the easier it is to keep clean. However, whilst resin based flooring can be formulated to produce smooth, non-porous surfaces with excellent slip resistance under dry conditions, the surface may have to be textured if it is to have adequate slip resistance under contaminated conditions. The heavier the likely build-up of contaminants, the coarser the surface texture has to be to retain the required level of slip resistance. However coarse textured surfaces are more difficult to clean, so where both slip resistance and ease of cleaning are important, a compromise must be made. Flooring should be selected with sufficient texture to suit specific working conditions and hygiene standards, and a programme of frequent effective cleaning must be set in place. Apart from

the selection of the flooring, the use in particularly wet areas of special footwear with slip resistant soles can be beneficial.

3. Chemical Resistance

Our well formulated and correctly applied resin flooring have proved to be effective methods of protecting concrete substrates sensitive to attack from aggressive spillages. Whilst no floor finish is completely resistant to persistent contact with high concentrations of all possible chemical types and combinations, John Lord resin floorings are resistant to many found in normal food industrial service situations. Furthermore in practice, prolonged contact with large quantities of the most aggressive chemicals is unlikely because of the health hazard likely to be involved.

4. Floor Design

The correct design of any resin flooring installation is of paramount importance. If regular spillages and or wash down regimes are a likely feature of the installation, provision of adequate drainage must be incorporated into the design. Another of our John Lord Group companies, Canal Engineering Limited, manufacture the Aspen range, the UK's most comprehensive range of durable stainless steel drainage products which are designed to interface with specialist resin flooring systems to contain and remove spillages and aid effective washing. The correct rate of fall should be incorporated into the floor design and, in new installations; this feature can be built into the new concrete specifications. Rate of fall on floor surfaces is very

What to Consider When Choosing a Resin Flooring in the Food Industry



dependent on in-service conditions but as a general rule of thumb, falls of 1:80 to 1:100 are suitable in wet food processing areas. Another design consideration of paramount importance is the floor/wall interface. Many design options are available from heavy duty concrete filled, stainless steel kerbing from the Aspen systems range by Canal Engineering, to resin based render systems, applied over concrete kerbs or used to form resin covered skirting.

5. Temperature Resistance

Particular care should be taken in the design of the resin flooring where extreme temperature variations are likely, such as cold stores and areas around ovens or cooking vessels. The movement of these areas in relation to the surrounding floor must be carefully considered and appropriate flexible joints installed. Most synthetic resin flooring systems have relatively low heat distortion temperatures (HDT) with epoxy resin based products being generally between 50oC and 70oC. The John Lord Uragard HT range have proved capable of withstanding considerably higher temperatures through careful attention to formulation and design through steam cleaning, a combination of softening and subsequent damage may be caused by misuse of high temperature pressure cleaning equipment. When installing Uragard, heavy duty urethane systems at a thickness of 9mm or more, steam cleaning can be satisfactorily carried out provided care is taken to ensure that the steam lance is not allowed to discharge on one place at one time for too long. However today's modern cleaning and sterilising agents and machines are generally more cost effective than steam cleaning.

6. Taint

Correctly formulated and fully cured resin flooring system should be entirely satisfactory for use in the proximity of food stuffs. However this cannot be taken to imply that these floorings are suitable for direct contact with unwrapped food stuffs. Generally the critical period when tainting is likely to be problematic during the application of the floor system and also within the following cure period. During these time periods, all food stuffs should be removed from the work area and particular care taken to ensure contaminated air from the work area is not discharged towards areas where food stuffs are stored. Uragard HT urethane resin systems are classed as low taint systems in contrast to MMA (acrylic) based systems which emit a very, strong, pungent and tainting smell during the (admittedly fast) cure period. Despite the Uragard low taint classification the above precautions must be observed.

7. Curing Conditions

The installed resin flooring system should be allowed to cure according to system type. In the case of John Lord Uragard

systems, these generally require overnight periods for foot traffic, heavy traffic require 48 – 72 hours and wet cleaning after 72 hours. These times are based on substrate and ambient temperatures of 15oC – 20oC and these must be built into any installation programme.

8. Substrate Suitability

The vast majority of substrates which are overlaid with resin flooring systems will be concrete. A few basic tips for concrete which is to be overlaid with resin flooring are;

- On new build projects always install concrete over an effective damp proof membrane.
- Always specify concrete of a strength greater than C35: (Newton strength).
- Wherever possible, specify a powerfloat finish.
- Allow a minimum of 2 weeks cure when using the John Lord Fastrac primer or minimum 4 weeks with conventional primer. (Atmospheric conditions may vary these time periods).
- Specify the correct surface tolerances that are required of the finished floor for the concrete specification. This will avoid costly corrective work prior to resin flooring installation.

9. Service Penetrations

Although not desirable, in some circumstances services may be required to pass through the resin flooring surface or plant needs to be bolted into the floor. A suitable method of achieving successful penetrations is to have a protective sleeve cast into the base concrete. This sleeve permits the services to pass through without direct contact with the flooring. This is particularly important if the services include pipes carrying liquid at temperatures other than ambient. The sleeve also acts as an upstand to prevent liquids flowing down through the floor. In the case of equipment bolted through the floor surface, always use proprietary chemical fixings and bed the plant legs on a suitable resin based flexible mastic to seal the interface.

10. Finally, carefully read through all service, maintenance and cleaning recommendation and ensure that the advice is incorporated into the factory operating systems.

We hope the above is a helpful guide to achieving the correct Food Industry resin flooring system. These recommendations offer brief, basic advice. Detailed help is available through our sales and technical departments.