

## **EXPLANATORY NOTE TO RESIN FLOORING TECHNICAL DATA IN COMPLIANCE WITH BRITISH STANDARD BS 8204-6**

### **Introduction**

BS 8204-6 (following the FeRFA Guide) states in section 4.2 that:

"It is essential that, in the design and construction stages, there should be full consultation with the manufacturer of the synthetic resin flooring to ensure that the product to be selected is entirely suited for the conditions both during application and in subsequent service".

Consideration should therefore be given to whichever of the following are applicable:

1. Intended use of the synthetic resin flooring including the type, extent and frequency of trafficking which can be categorised as follows:

Light duty (LD)	light foot traffic, occasional rubber tyred vehicles
Medium duty (MD)	regular foot traffic, frequent fork lift truck traffic, occasional hard plastic-wheeled trolleys,
Heavy duty (HD)	constant fork lift truck traffic, hard plastic wheeled trolleys, some impact
Very heavy duty (VHD)	severe heavily loaded traffic and impact
2. Type of loading, static or dynamic, and severity of impact;
3. Details of all chemicals, including those used for cleaning or sterilising, which could come into contact with the floor, and extent, frequency and temperature of spillage;
4. Temperatures that the flooring is required to withstand in normal service or as part of the cleaning operations and whether exposure is by radiant or conductive heat or by direct contact;
5. Colour, uniformity and retention, aesthetics and decorative effects;
6. Extent to which the flooring will be exposed to direct sunlight or ultra-violet light;
7. Appearance and quality of finish;
8. Need to reduce risk of osmosis;
9. Compliance with hygiene or food industry requirements;
10. Special requirements, such as slip resistance or static controlled characteristics;
11. Expected life of the flooring;
12. Thickness of flooring to be installed;
13. Time available for the application and curing of the flooring;
14. Age, specification where known and nature of the base, including information about any previous use of the floor which could affect adhesion and any preparatory treatment required.

## **A History of Resin Flooring Technical Data**

Synthetic Resin Flooring started life as concrete repair compounds and were initially manufactured by companies who supplied products and additives to the concrete industry. The result has been that historically most manufactures quoted technical data such as compressive, tensile, flexural strength etc. Although pure physical test results serve to give a comparison with concrete it is clear that those same physical properties cannot be directly correlated to the performance of a resin flooring system. In fact in some cases such as compressive strength, a very high value could produce a brittle resin which had little ability to withstand impact or thermal movement.

Synthetic Resin Flooring is applied directly to a concrete substrate in thickness between a 100 microns and 25 mm whereas concrete testing is carried out using large cast blocks or beams. Synthetic Resin Flooring absorbs into the substrate surface producing a chemical bond within the surface of the concrete and as such it is impracticable to test for physical strength properties by the same methods used in concrete testing.

In the early days of the development of synthetic resin flooring concrete test methods were used to determine the strength of resin formulations but gradually it has become accepted that resilience and durability are the most important properties and pure basic strength is not important. A good comparison of why this is the case can be made by the use of Tarmac on roads.

Taber Abrasion is often quoted to compare the life expectancy of synthetic resin flooring but it can often be misleading because it cannot relate directly to the many diverse conditions in which resin flooring is used.

The FeRFA Technical Committee agreed that pure physical strength was not directly relevant in determining the suitability of a resin floor for a specific environment. In fact it concluded that durability was the main governing factor in selection of flooring, with the resultant classification of the various resin flooring types into 8 different categories as defined in section 2.3 of the standard and expanded upon in the FeRFA Guide to the Selection of Synthetic Resin Flooring. Other properties which were seen as relevant were surface smoothness and slip resistance, chemical resistance, colour and u/v resistance, static control, temperature resistance and taint.

## **Technical Data Format**

Technical data should report the following British Standard/ FeRFA Guide Properties:

Product Description

BS 8204-Part 6 Classification

Chemical Composition

Thickness

Typical Installations

Specification Detail

Life expectancy

Durability

Adhesive bond strength

Surface smoothness and slip resistance

Chemical resistance and staining

Seals and Polishes

Cleaning and maintenance  
Colour availability  
Resistance to ultraviolet radiation  
Static control properties  
Heat distortion temperature and/ or Glass transition temperature  
Resistance to heat source  
Taint  
Reaction to fire  
Damp proof membrane  
Pot Life  
Cure schedule  
Specific gravity (mixed)  
Coverage  
Recommended application conditions  
Skirting, coving , gullies and drains  
Design and preparation of concrete base  
Strength of concrete substrate  
Mixing method  
Priming  
Application method

### **Consultation**

Technical data should emphasise the need for consultation with the FeRFA manufacturer and a contractor member to ensure the product selected is fit for purpose. Selecting a resin flooring system based solely on physical test results, usually determined on a laboratory scale, is not advised. FeRFA members have experience of millions of successful projects in most working environments and will be able to recommend the correct product for the job.

### **Summary**

Technical data is necessary to determine the difference between the different BS types of flooring (type 1 – 8) but specifiers using resin flooring for the first time should be aware that, because each type has several sub groups, correct specification will only be guaranteed by consultation.

Always purchasing and consulting with a FeRFA member will ensure success.