



The Future of Industrial Resin Flooring

Polyurethane Flooring – Finding the Ideal Solution



“Polyurethane cement-water based flooring is one of the mostly widely used synthetic resin systems as it offers higher strength, better heat resistance and improved chemical resistance compared to epoxy resin or MMA. Yet for nearly 20 years between 1970 and 1990 it represented a very small percentage of the total resin flooring used. The combination of cement and water with the reactive polyurethane molecule was patented by ICI and in effect prevented further development of this quite unique concept.

As early as 1990, Resdev had developed its own range of cement-water based polyurethane products under the Pumadur label and since then these unique systems have been improved and developed further. The chemical make-up of a polyurethane system is very complex, as un-reacted polyurethanes and water usually respond quite violently causing foaming. However,

the presence of cement quickly mops up the water, becoming coated with the mixed polyurethane producing a secondary reaction. This matrix is then evenly distributed throughout the system giving a polyurethane polymer with exceptional strength, a matt finish and a high degree of slip resistance even in wet conditions.

This clever technology produces a range of flooring and coatings which are not only volatile and taint free, allowing for the application of seamless in-situ flooring within the same building as stored foodstuffs, but can also be cleaned at much higher temperatures than equivalent epoxy systems for increased hygiene and improved housekeeping practices.

The different grades of resin flooring are categorised into 8 British Standard types under BS8204 Part 6 and this classification provides clear information for the flooring contractor, specifier and end user alike.

Heavy duty polyurethane flooring systems such as Pumadur HF and Pumadur RT are BS8204 Part 6 Type 8 Heavy Duty Flooring and as such they are applied at 6 or 9mm and display excellent chemical, impact and abrasion resistances. With a lightly textured profile and a matt surface they can also withstand the rigours of steam cleaning up to 120°C at a thickness of 9mm.

Medium to heavy duty flow applied polyurethane flooring systems such as Pumadur MD and Pumadur SL are classified as BS8204 Part 6 Types 5 – 7 depending upon their thickness and graded aggregate matrix. They are smooth, attractive and offer excellent chemical and wear resistances whilst being easy to clean.

Polyurethane coatings, coving and wall renders have been designed to provide a fully cohesive system and maintain the same standards of resistance to abrasion and chemical attack as the finished floor. In order to achieve a totally seamless 'box' finish floor and wall system for high hygiene sterile process, bund and tanked areas, polyurethane coving and wall render products such as Pumadur CG and Pumadur WR are over-coated with a polyurethane coating, Pumadur TF, which is based on the same technology.

The extensive range of products based on this technology also includes Pumabulk, a low cost high strength infill mortar, static controlled systems and even resin terrazzo.

Typical installation environments for medium and heavy duty polyurethane flooring systems are chemical

processing, food processing and manufacture, pharmaceutical, healthcare, breweries, printing, engineering and dairies. The durability, slip and chemical resistance of a system is directly proportional to its thickness and other factors such as the levels of traffic, mechanical and chemical use, possible impact damage and housekeeping practices should always be taken into consideration and full consultation with the manufacturer, on each project, is also recommended under BS8204 Part 6.

As a manufacturer we would always advise that specialist resin flooring and wall systems are applied by experienced, trained flooring contractors in order to ensure that the customer receives the best possible service and flooring solution for their individual needs".

John Wright is the Chairman and Chief Technologist at Resdev Limited and has spent the past 5 decades at the forefront of resin flooring research and development in the UK and worldwide. He is an active Council and Technical Committee member of Ferfa, the Resin Flooring Association, and is dedicated to the growth and future advancement of the resin flooring industry.



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