

'COMFORT' RESIN FLOORING SYSTEMS



FeRFA Guidance Note: No 12

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FERFA

FerFA, the Resin Flooring Association, represents the major product manufacturers, specialist contractors and surface preparation companies, raw material suppliers and specialist service providers within the UK Resin Flooring Industry. Established in 1969, FerFA now represents over 90 UK based companies. The Association has established Codes of Practice for full members. It takes an active role in promoting resin flooring and in developing both national and international standards.

*All FerFA publications are freely downloadable from the website at www.ferfa.org.uk
for further information, contact FerFA at: PO Box 3716 Stone Staffs ST15 9EU
T: 07484 075254 W: www.ferfa.org.uk*

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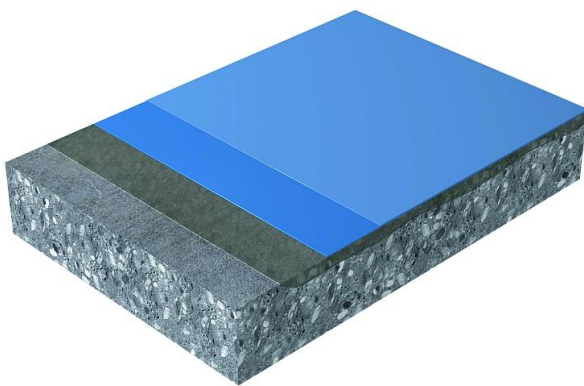
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1. INTRODUCTION

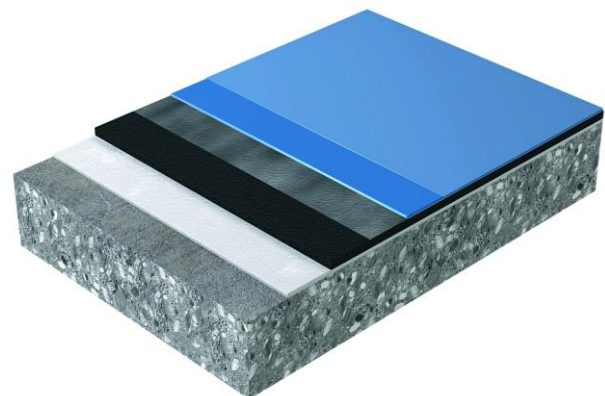
'Comfort flooring' or 'liquid vinyl' resin systems have been growing in popularity in recent years. These types of resin floors are generally a modified FeRFA Type 5 flow applied system comprising a primer, a flow applied 'body coat', optional surface sealer and may include a rubber underlay and associated adhesive and pore filler. This type of resin flooring aims to offer the user the comfort properties typically provided by cushion vinyl with the additional benefit of providing a seamless hygienic floor. Comfort flooring is monolithically bonded to the substrate and therefore removes the need for welded joints. Resin flooring can also be overlaid at the end of its lifespan unlike vinyl which needs to be removed and disposed of.

2. DESCRIPTION

These type of systems generally obtain their resilient properties from the 'body coat' which is usually a flexible 2 – 4 mm flow applied two-part self-smoothing resin material and may often incorporate a filler component to increase the overall thickness of the system. Some 'body coats' are inherently colour stable and may be given a clear coat for scratch resistance or left un-coated. The non-colour stable grades are usually specified with a thin colour stable topcoat. A slip resistant topcoat is also an option. Comfort flooring systems may have a shorter lifespan than other Type 5 systems due to the relatively low thickness of the topcoat. Systems incorporating an underlay mat require an adhesive to bond the mat to the substrate and a pore filler to grout any holes between rubber crumb particles. The body coat may be specified in two thinner applications (for example 1.5 mm each) to improve smoothness and reduce the risk of protruding rubber particles affecting the surface finish.



Build up of system without an underlay mat



Build up of system with an underlay mat

3. TYPICAL PROPERTIES

Comfort flooring is marketed with some or all of the following benefits over the more rigid FeRFA Type 5 products:

- Resilient (a substance able to recoil or spring back into shape after bending, stretching or being compressed).
- Enhanced flexibility
- Reduced risk of cracking / crack-bridging
- Reduced footfall noise and horizontal noise transmission
- Enhanced impact resistance
- Suitable for application to old bituminous substrates
- Sound deadening
- Vertical noise reduction (especially when incorporating a rubber crumb mat)
- Warm, comfortable feeling underfoot
- Energy absorbing – reduced risk of injury due to falls
- Increased walking or standing comfort

4. TECHNICAL DATA

Comfort flooring may be characterised by various measurable properties including shore hardness (A or D), tensile strength, elongation at break, tear strength and impact sound insulation etc. As there is no general standard for this type of resin flooring system, advice should be sought from the manufacturer regarding specific performance characteristics.

5. LOAD BEARING CAPABILITIES

The load bearing capabilities of 'comfort flooring' need to be considered for the three main types of loading found in use, taking into account the total weight and the size of the area to which the load is applied.

a) STATIC

Where loads are concentrated on small areas such as table legs, any damaging effects can be minimised by spreading the load using furniture cups. Loads should not be left on trucks or trolleys for long periods of time in one position. Permanent damage may result from excessive point loadings.



b) IMPACT

Where small loads are applied suddenly to the surface of the flooring, for example an item being dropped or the impact from a shoe heel, some slight initial indentation may occur but the material should recover. However, stiletto heels can exert extreme loads in excess of what the material can withstand and, as a result, may permanently damage the flooring. Sharp pointed objects such as knives will pierce the surface of the flooring leaving permanent damage.

c) ROLLING

Rolling loads cover a range of situations from castor wheeled chairs and trolleys to heavier wheeled equipment. Where these situations occur, the following points need to be considered.

- 'Comfort floors' are generally unaffected by castor wheels and, where damage does occur, it can usually be attributed to damaged or sticking wheels. The correct type of wheel should be specified when ordering furniture.
- Pneumatic wheels usually cause less damage than solid wheels.
- Larger diameter wheels usually spread the load better than smaller wheels.
- Polyamide and metal wheels are more prone to damage than pneumatic wheels and therefore have more potential to damage the flooring.
- Dark coloured wheels/tyres are more likely to mark the floor than light coloured ones.
- Harsh braking, carrying pallets too low and dragging of trucks/trolleys around corners can lead to ingrained tyre marks.
- Tight turning circles can increase the loading on the floor resulting in a localised breakdown of the surface.
- When moving heavy furniture across 'comfort flooring', spread the load by placing wooden strips on the floor under the load to distribute the point loading over a larger area. Air casters can be used for heavier loads.

6. TYPICAL INSTALLATIONS

Comfort flooring is typically specified for medium duty applications, i.e. regular foot traffic, wheeled trolleys. Typical applications include offices, hospital corridors and operating theatres, prisons, schools, laboratories, canteens, retail outlets, health clubs, crèches, museums, libraries etc.

7. ADDITIONAL POINTS TO CONSIDER

As comfort flooring is often specified for commercial or even domestic situations, the client's expectations regarding surface finish and aesthetics must be properly managed. Comfort flooring is subject to the same issues as standard FeRFA Type 5 systems including following the substrate profile and having the inherent minor variations of a batch manufactured, in situ applied, site cured material. The finish, generally being extremely smooth and glossy, is subject to falling dust and other airborne contamination which may not be totally eradicated during the application process. Slip resistance, especially in the wet, may also be an issue as these systems are generally very smooth. Decorative flakes may be specified as a full or partial scatter which may give slight slip resistance improvement in the wet.

The application of any resin flooring system is a specialist skill and we would recommend that a skilled and qualified resin flooring contractor, such as a FeRFA contractor, undertakes the work involved. Guidance and advice should also be sought from the FeRFA resin flooring manufacturer regarding any specific requirements prior to the installation taking place.

8. CLEANING AND MAINTENANCE

As with all resin flooring systems, a regular and appropriate care and maintenance routine will maintain the appearance of the floor finish. A metallised acrylic polish may be specified as an ongoing maintenance recommendation to improve scratch resistance. General guidance on cleaning resin floors is available to download from the FeRFA website www.ferfa.org.uk.

9. REFERENCES AND FURTHER READING

- 1) **FeRFA Guide to the Specification and Application of Synthetic Resin Flooring**
FeRFA, The Resin Flooring Association, PO Box 3716, Stone, Staffs ST15 9EU
- 2) **BS 8204-6: Synthetic resin floorings – Code of practice**
BSI, 389 Chiswick High Road, London W4 4AL
- 3) **FeRFA Guide to Cleaning Resin Floors**
FeRFA, The Resin Flooring Association, PO Box 3716, Stone, Staffs ST15 9EU
- 4) **European Standard EN 14904 : Surfaces for sports areas –Indoor surfaces for multisports use**