

The densifying and sealing of concrete explained

Concrete is a wonderfully durable product if correctly made and treated. The porosity and strength of concrete varies. Where concrete floors have to look good, be durable and stain-proof, some necessary treatments are explained below.

Dry –shake Hardeners

A shiny, non-slip, easily cleaned concrete can be achieved in several methods. The first distinction is between properly hard, smooth concrete with an excellent surface such as is achieved by the use of Samson MBFT Dry shake hardener. (Only needs regular washing as illustrated in the pictures.)



MBFT Light Grey

Diamond Ground Concrete

Where exposed aggregate by diamond grinding is desired, often the durable surface is removed and entrapped air bubbles exposed. The grinded surface is usually dusty and porous and therefore needs chemical densification to restore integrity. The entrapped air and pin holes should be filled with a pre-polymered cementitious filler (Samson P3 Primer is an excellent product for this purpose.) To restore durability and stop dusting, a penetrating reactive silicate works well (such as Samson HC Densifier.) Although dusting and porosity are reduced by the aforementioned treatments, the pores of the concrete remain absorbent and therefore easily stained. Use a liquid repellency induction chemical and a suitable membrane to provide the shine and non-slip properties when wet. (Samson Siloxane Solution or MM Sealer Primer and MM Sealer Buffable will provide this.)



Diamond polished

Application Techniques

Where Samson MBFT has been correctly used subsequent regular washing of the HC Densifier treated surface gives a satin finish which then may be optionally treated with stain repellent sealers dependent on the intended use of the floor.

Diamond grinding requires various coarseness of pads to be used to do initial rough grinding and then proceed to fine grinding and shining. Some contractors find it useful to apply a densifying chemical after rough grinding in order to improve the fine grinding process. Samson recommends densification after coarse grinding and a diluted application after fine grinding.

The filling of pin holes is achieved in various methods but the Samson recommended method is to mix P3 Primer into a mobile slurry and then to scrub this into the floor with a fibre pad. The P3 product will require several hours of hardening before final grinding can be employed (this is easily tested with a small scratching tool to determine how far the strength has developed since being cement based it takes longer to harden in cold weather than warm weather.)



Water repellence



Densifier application

Critical Processes to be followed

All dust should be vacuumed off before applying the densifier by brush, or a microfibre Verimark applicator. Where the first densifier application (after rough grinding) is employed even application is important but where further grinding is to take place, unreacted densifier need not be washed off. However, when a second application takes place all unreacted chemical must be washed off. (Unreacted densifier produces a crystalline residue, if not removed by washing with water, will give a scratched appearance.)

The final liquid repellency treatment should only be attempted after the floor is thoroughly dry (otherwise streaking and cloudiness of the sealer could be experienced.) The final sealer should be thinly and smoothly applied using a suitable Verimark fibre mop (rollers and sheep skin applicators result in lines of over application at the edges.)

Allow the final sealer to be completely touch dry and then shine to a satin finish with a 3M buffing pad. For those contractors who have high speed (1000 rpm) burnishing equipment a high shine is achievable if desired. (See illustration)

Critical Tips often ignored

The final sealer (MM Sealer Buffable) is a solvent carried pure acrylic and thickens quickly if left open. Best application is achieved by working wet to wet quickly with a very thin application. If left open or stored for an excessive period, some of the solvent in the product will evaporate and stickiness encountered while applying.

Densifier may be washed off application equipment with water. MM Sealer Buffable applicators may be washed off with air drying thinners or Samson Stripper A.

The fire hazard warnings must be faithfully followed and flame proof equipment used. If workers breathe the solvent too long, dizziness may be experienced. Make sure the environment is well ventilated.

Cleaning of Sealed Floors

Shops will experience different dirt compared to homes. Fatty substances (such as: cooking oil, mayonnaise and milk etc) should be cleaned off with Samson Emulgen 6 and rubbery dirt (such as: shoes and trolleys) should be cleaned using the Samson Emulsifier sold as PolyStripper. General cleaning may be achieved using alkaline soft soaps.

Easy re-sealing

Epoxy and urethane sealers are difficult to renew once scratched or damaged. On the contrary MM Sealer Buffable may be easily re-applied if necessary without significant preparation. If desired old sealer can be easily chemically stripped with Samson Stripper A thereafter a new layer of MM Sealer Buffable may be applied.

Call Samson for additional information



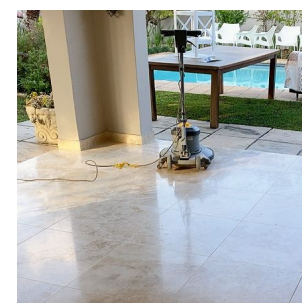
Cleaning



Burnisher being used



Microfibre mop application



MM Sealer Siloxane



Treated vs untreated concrete