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JUST WIPE AND THE STAINS ARE GONE!

Whether on walls, floors or terraces – no one likes to see stains. But coffee, sauces or oil marks can be difficult to remove, especially from mineral surfaces. Thanks to WACKER's new PRIMIS® SAF 9000 series of dispersions, dirt now no longer penetrates flooring or wall paints.





The dispersion can be applied to mineral surfaces in diluted or undiluted form, in line with the specific requirements.

Decorative mineral flooring in business premises and homes, or concrete flooring in railway stations and on terraces have to put up with a great deal of wear and tear. They are a magnet for stubborn stains, such as coffee, greasy food residues, red wine or ketchup. And however much you try to clean off the dirt, there is always a residue. To prevent this, mineral surfaces are given protective treatment.

To meet this need, WACKER developed its PRIMIS® SAF 9000 series of dispersions. Concrete flooring and decorative self-leveling floor screeds are easy to protect against stains with the aid of these specialty acrylic-based aqueous dispersions. They contain high-molecular-weight

polymer particles that are less than 0.1 micrometers in size on average. Being so small, the polymer particles penetrate the fine micropores in the surface, instead of covering them. On drying, the particles form a film inside the pores, preventing the ingress of dirt. It can simply be wiped off. The advantage is that the surface's mineral appearance is hardly changed and the floor retains its familiar feel.

The high molecular weight of the polymer provides another benefit – after drying, the film deposited in the pores mechanically reinforces the surface and protects it against abrasion – an important advantage for flooring subject to heavy traffic in stores, warehouses or industrial buildings.

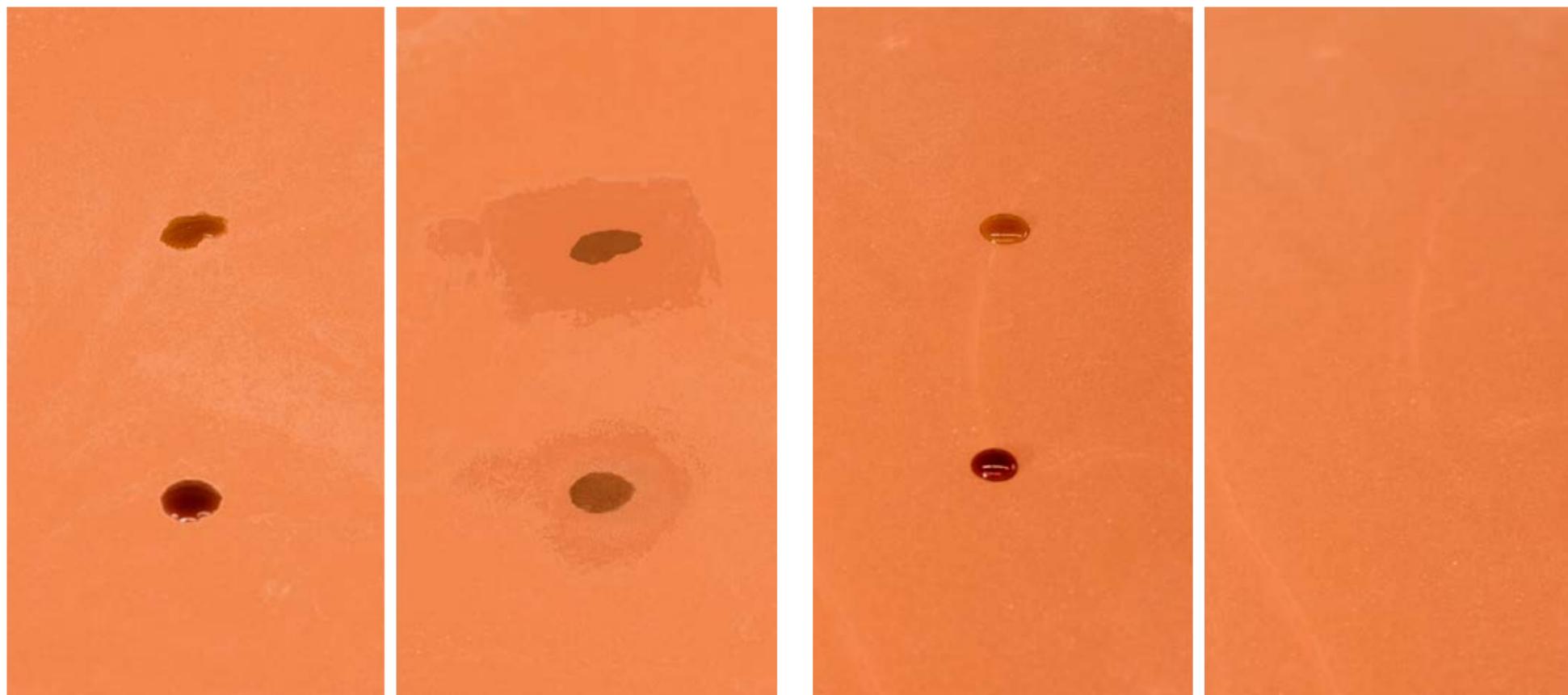
Another advantage is that the dispersions quickly soak into the floor, and can therefore be walked on after only about an hour.

ALL-ROUNDER

WACKER's developers did a lot of testing in the lab - coffee, balsamic vinegar, blackcurrant juice, cola, salad oil, ketchup and mustard – all these substances left stains on untreated mineral surfaces that even thorough cleaning couldn't shift. If, on the other hand, the surface was treated with a dispersion of the PRIMIS® SAF 9000 series, the dirt could be easily removed almost completely.

In the special dispersions series, there are currently two products: PRIMIS® SAF 9000 and





Coffee and blackcurrant juice leave clear stains on untreated decorative mineral flooring.

PRIMIS® SAF 9001. The latter shows improved performance with regards to abrasion resistance and dirt pick-up resistance. Both have a solids content of 42 percent and, in principle, the user only needs to dilute them with water.

The treatment of mineral surfaces is very simple, “The dispersion can be distributed on the surface using a sponge or mop,” says Dr. Martin Schierhorn, Marketing Manager for Construction Dispersions at WACKER, “and you can walk on it as soon as it is dry.” If necessary, several coats can be applied. The first will be more dilute to ensure that the polymer particles penetrate all the tiny pores and do not get in one another’s way. “Both dispersions are very effective at treating absorbent surfaces. They can be readily diluted with water and easily applied, so that they are also of interest to DIY fans,” says Schierhorn.

In the past, mineral floors were often sealed with resins of the two components epoxy and polyurethane, however they cause an allergic reaction in some people. By contrast, the PRIMIS® SAF 9000 series dispersions can be freely used. Because no organic solvents or harmful substances such as formaldehyde or isocyanate, or skin sensitizers such as epoxide are added during production, they are much more environmentally friendly and biocompatible than conventional products.

PROTECTION AGAINST BBQ GREASE

The polymer dispersions are also suitable for treating outdoor mineral flooring (such as terraces). Fresh-air lovers will know why – rust from gardening equipment or fat dripping from grilled meat form ugly stains on the terrace, and,

even if this soiling is carefully avoided, the surface still becomes dirty over time, for example from airborne pollen and dust. PRIMIS® SAF 9000 series dispersions are ideal for protecting such flooring. The amount to be applied, and its concentration, will be adjusted according to the absorbency of the mineral surface. The treated surfaces can even be high-pressure cleaned. Even chewing gum or dirty machine oil can be completely removed.

PRIMIS® SAF 9000 can also be used in wall paints to achieve an easy-to-clean effect. Specially formulated easy-to-clean paints prevent foreign matter from penetrating into the surface. PRIMIS® SAF 9000 increases the wet-scrub resistance. That means the wall can be repeatedly cleaned with a wet sponge without damaging the paint.

On the treated flooring, both substances can easily be completely removed by moist wiping.

In the WACKER test lab, technician Manuela Mühlthaler demonstrates how effective the new dispersion is. Her colleagues have disfigured a test wall with marker pen, lipstick and pencil. This colorful mess is given a finishing touch with coffee stains, ketchup and mustard. When Manuela Mühlthaler wipes the wall with a microfiber cloth and some detergent, the contamination on the one half of the wall painted with conventional wall paint is only partly removed. The scrawl is smeared and the pigment particles are partially detached from the paint coat; material still adheres in some places. Meanwhile, on the other half, the paint is based on PRIMIS® SAF 9000. Here the lab technician can wipe away all the stains completely, returning the surface to an immaculate matt white – as though nothing had ever happened.

HARD SURFACE

The remarkable resistance of the new WACKER co-binder is impressively demonstrated by the pencil marks. With a conventional paint coat, the pencil lead leaves a small groove. If the wall paint contains PRIMIS® SAF 9000, on the other hand, the pencil has difficulty penetrating into the wall paint, since the new dispersion is a hard and very resistant polymer.

“I would have liked a wall paint like this when my children were small”, says Dr. Abdulmajid Hashemzadeh, one of the chemists at WACKER who developed PRIMIS® SAF 9000. The composition of the dispersion is chosen so that the film is not easily penetrated by either hydrophilic or oleophilic substances – not by coffee and not by lipstick. “This property profile is very attractive to the market,” adds Martin Schierhorn, since water-based dirt is easier to remove from hydrophobic substrates, while grease-based stains are easier to remove from hydrophilic surfaces. Reconciling these two properties posed major challenges to the WACKER chemists. “Years of research were needed to combine all these properties in one product,” says Abdulmajid Hashemzadeh.

As marketing manager, Martin Schierhorn knows that the paint manufacturers, first and foremost, demand additives that allow easy surface cleaning and can be additionally processed into environmentally friendly, odorless paints and, not least, are easy to apply. In numerous lab tests, it was possible to show that the dispersion not only makes it possible to formulate easy-to-clean interior wall paints, but also offers advantages for exterior paints by eliminating “snail trails.” They occur when it rains shortly after the paint has been applied to the plaster, leaching out the emulsifier. Adding the new WACKER dispersion prevents the water-soluble salts in the paint migrating to the surface and drying.

PRIMIS® SAF 9000 can also be used as a sole binder, e.g. for marble chip plasters. The polymer envelops the small, often multicolored quartz sand grains and protects them. From a distance, such a wall looks like marble because the eye cannot distinguish the individual chips. Here, too, the new dispersion has a decisive advantage. It remains transparent when moist – as has been demonstrated in the WACKER lab by the developers.

“I would have liked a wall paint like this when my children were small.”

Dr. Abdulmajid Hashemzadeh, R&D Laboratory Manager at WACKER POLYMERS



Measurements taken in the lab show that wall paints modified with PRIMIS® SAF 9000 make it possible to remove stains completely.

“The protection of mineral surfaces against dirt pick-up is definitely a global trend in the construction and paint industry.”

Dr. Martin Schierhorn, Marketing Manager at WACKER POLYMERS

Conventional binders, on the other hand, turn white, as water penetrates into the polymer matrix over time. PRIMIS® SAF 9000 contains only a small amount of water-soluble component, and therefore “water whitening” is avoided. Consequently the colors retain their full brilliance, even when walls are subject to rain for relatively long periods. And the protective coating adheres reliably, even when wet. PRIMIS® SAF 9000 is thus also suitable for surface treatment for “Stucco Veneziano”, based on brightly colored lime paints. The addition of dispersion ensures that this high-quality finish is effectively protected against dirt pick-up and moisture.

EASY-TO-CLEAN TREND

“The protection of mineral surfaces against dirt pick-up is definitely a global trend in the construction and paint industry,” Dr. Martin Schierhorn is convinced. Less work and lower costs for maintenance and cleaning of mineral surfaces, as well as permanent improvements in optical appearance mean that the costs for the treatment quickly pay off. Whether for flooring or nursery walls: once a user has treated the surface with dispersions of the PRIMIS® SAF 9000 series, they will only need to wipe it with a damp cloth from then on. ■

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All figures are based on fiscal 2016.



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