

OBTEGO®

innovative surface protection



Products and technical information

Surface protection for concrete.

Transparent. Opaque. Colored.



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Who we are and what we do

OBTEGO AG is a developer and manufacturer of high-quality, wet-chemical surface protection solutions for mineral substrates, in particular cementitious surfaces (concrete, screed, terrazzo, levelling compounds etc.).

Core competences

The company's core competence is in developing and adapting surface protection for cementitious floors. Our focus is on developing each surface protection product to the surface to be treated.

Innovative

From the very outset, we put new surfaces through rigorous testing in order to select the most suitable OBTEGO system. In addition to sample slabs, we also produce large-area, mock-up surfaces to serve ultimately as field trials, which are also supported by the OBTEGO Applications Engineering division.

Products

Our products clean, protect, maintain and enhance, always adapted precisely to the respective substrate and with many possibilities to satisfy your needs. So, if you are looking for solutions for protecting your flooring against general grime and stains, for example, or if you wish to give your surfaces a high-quality, permanent shine, then you are in good hands with OBTEGO AG.



OBTEGO stands for high quality protection



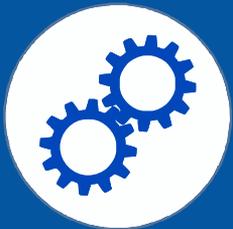
Research and Development

To always develop the highest quality and most suitable product is the goal of our research and development.



Production

Our products are Made in Germany. We produce directly at the company location in Altheim, Essenbach. This ensures a smooth exchange between research and development, application technology and production.



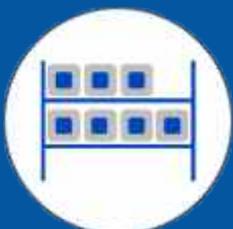
Application technology

We support our customers individually in selecting the right products for the surface to be treated. You can also count on our technical advice during the project.



Seminars

In order to be able to use OBTEGO products correctly, we organise seminars at our company location at regular intervals. The participants receive thereby an overview of the different surface protection systems and solutions of the OBTEGO AG and see on the basis of practical demo surfaces their successful conversion.



Warehousing

Due to our warehousing we can also react to short-term customer requests and ensure a seamless supply.





OBTEGO Products

Surface preparation

The OBTEGO SP-Series contains products for surface preparation. All products of this series are optimally adapted for all subsequent OBTEGO products.

As always, OBTEGO uses high-quality raw materials with a high content of agents in its surface preparation products.





BEFORE



AFTER

OBTEGO SP-100

Liquid compound based on various silicates and polymers.

OBTEGO SP-100 is used together with grinding dust, as pore filler for grinded floors and screeds to close the pores and holes with a maximum size of 4-5 mm.

	Packaging Unit	Item Number
OBTEGO SP-100	9 liter	10200001



OBTEGO X series includes products for renovation and surface preparation.

Products from the OBTEGO X series are used e.g. for small repair work, for closing larger cracks, boreholes and breakouts or for jointing and sealing of cementitious flooring.

The advantage of the products is in the wide range of temperature application as well as in the fast curing. Therefore, the surface is faster ready for a further processing or use of the floor.

OBTEGO X-100

Low viscosity primer for OBTEGO X-200 (joint filler) and X-300 (mortar). Prime coat for better adhesion on mineral substrates.

2-component-MMA (methyl methacrylate)

	Packaging Unit	Item Number
OBTEGO X-100(A) Resin (Primer)	5 kg	10200003
OBTEGO X-100/200 (B) Hardener	1 kg	10200002



OBTEGO X-200

Highly elastic, modified methacrylate resin for jointing and sealing of mineral surfaces. Ensures a permanent elasticity and a better absorption of underground movements. Suitable for indoor and outdoor surfaces.

	Packaging Unit	Item Number
OBTEGO X-200(A) Resin (joint filler)	10 kg	10200004
OBTEGO X-100/200 (B) Hardener	1 kg	10200002



OBTEGO X-300

OBTEGO X-300 is a solvent-free 2-component methacrylate resin mortar with high compressive and bending tensile strength. It is characterized by very low linear shrinkage. The mortar is best for repair work and backfilling for holes. Due to its high strength, the mortar is suitable also as a wear-resistant concrete coating for arising leveling and repair work for layer thicknesses of 6 - 25 mm.

	Packaging Unit	Item Number
OBTEGO X-300(A) Powder (mortar)	15 kg	10200005
OBTEGO X-300(B) Hardener	2 liter	10200006



OBTEGO X-200



BEFORE



AFTER

OBTEGO X-300



BEFORE



AFTER

Pretreatment

The OBTEGO P-Series contains products for surface pretreatment. Those products can work as pre-impregnation, primer or functional product and improve the surface properties. Pretreatments are often an important component of a good working OBTEGO system.

Products of OBTEGO P-Series generally used with subsequent OBTEGO special impregnators in a system application.

All pretreatment products are optimally adapted for OBTEGO R-Serie products.

As always, OBTEGO uses high-quality raw materials with a high content of active agents in its pretreatment products.



OBTEGO P-2

Highly reactive lithium silicate.

Concrete densifier and surface hardener (Lithium silicate). Silicate with high active ingredient content for surface hardening of concrete floors (dust-binding).

	Packaging Unit	Item Number
OBTEGO P-2	20 liter	10250013
OBTEGO P-2	1000 liter	10250012



OBTEGO P-3

Highly reactive blend of potassium- and lithium silicate.

Concrete densifier and surface hardener (Potassium-Lithium silicate). Silicate blend with high active ingredient content for hardening of concrete surfaces (dust-binding).

	Packaging Unit	Item Number
OBTEGO P-3	20 liter	10250016
OBTEGO P-3	200 liter	10250014
OBTEGO P-3	1000 liter	10250015



OBTEGO P-5

Highly reactive lithium silicate with integrated basic protection and gloss effect.

Concrete densifier and hardener with gloss effect and surface protection (Lithium silicate). Silicate with high active ingredient content for hardening of concrete surfaces (dust-binding). Reduce the capillary water absorption and increase the gloss level.

	Packaging Unit	Item Number
OBTEGO P-5	20 liter	10250020
OBTEGO P-5	200 liter	10250018
OBTEGO P-5	1000 liter	10250019





OBTEGO P-10

Waterborne pretreatment (impregnation) based on a fluorocarbon oligomer which gives an excellent water and oil repellent effect.

Pretreatment for application on absorbing, highly grinded or polished surfaces. Reduces the consumption of OBTEGO R-400 and also reduces an unwanted color intensifying.

	Packaging Unit	Item Number
OBTEGO P-10	10 liter	10250021



OBTEGO P-20/ OBTEGO P-20 nV

Waterborne pretreatment with a acrylic co-polymer, very good pore filler properties and a water repellent effect.

Pretreatment for application on highly absorbing, Power trowelled or coarse grinded surfaces. Reduces the consumption of OBTEGO R-400, delivers a basic protection against light acids and reduces an unwanted color intensifying effectively. Using OBTEGO R-400 on mastic asphalt, use OBTEGO P-20 nV as a pretreatment.

	Packaging Unit	Item Number
OBTEGO P-20	10 liter	10250024
OBTEGO P-20 nV	10 liter	10250023



Special Impregnators

The OBTEGO R-Series contains different high-end products for the protection of cementitious surfaces.

Our product range suffieces from a economic to a premium protection.

OBTEGO special imprgnators can be find in various industrial environments such as production and logistics areas, central markets, shopping malls and much more.

OBTEGO AG uses high quality raw materials and a high content of active agents in its products.



OBTEGO R-30

Highly reactive hybrid silicate with a basic protection against stains.

OBTEGO R-30 causes a silicate of concrete surfaces and penetrates deep into the surface. The hybrid-silica also reduces the penetration of liquids and dirt. The water absorption is reduced, the surface diffusion remains open. Surfaces are easier to clean and the gloss is also increasing. The following properties are the characteristics of the surfaces after the treatment with OBTEGO R-30: Improved abrasion resistance, dust-free, impermeable and more resistance, no or only a slight color deepening.

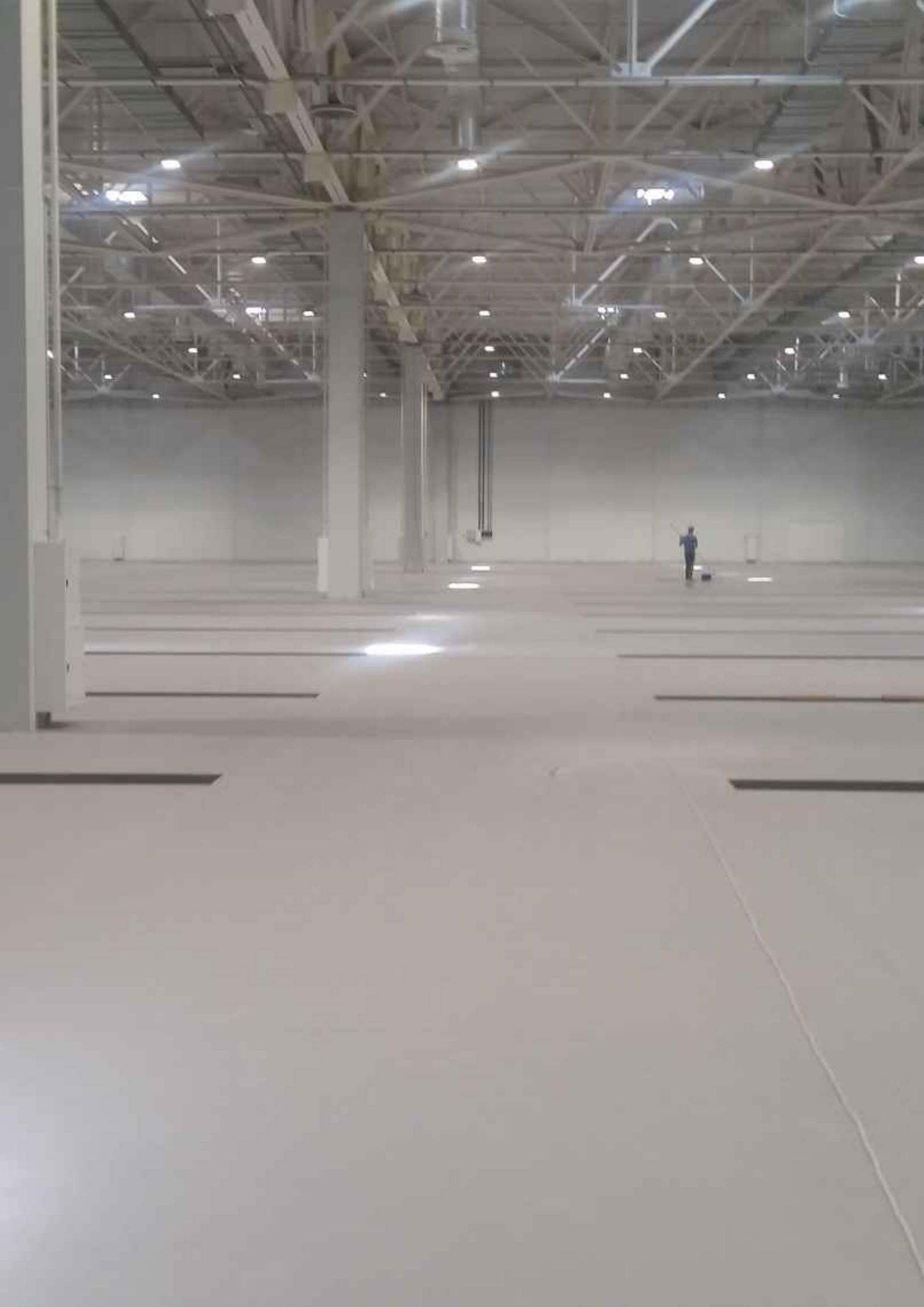
	Packaging Unit	Item Number
OBTEGO R-30	20 liter	10300003
OBTEGO R-30	200 liter	10300001
OBTEGO R-30	1000 liter	10300002



UNTREATED



TREATED



OBTEGO R-40

Pigmented 2-Component Lithium Silicate-Based Special Impregnating Sealer.

Given the pigmented surface refinement, OBTEGO R-40 is excellently suited to use on new, uneven concrete surfaces or old flooring. OBTEGO R-40 penetrates into the surface, where it reacts with the substrate to form a solid unit. The product protects the surface against the penetration of aqueous liquids, oils, greases and general grime. The following properties are the characteristics of the surfaces after the treatment with OBTEGO R-40: Improved wear resistance, dust-free, more waterproof and more resilient. Further advantages over EP or PU coatings are the minerality and the diffusion-openness.

	Packaging Unit	Item Number
OBTEGO R-40 platinum gray, 2K	18,7 kg	10300010
OBTEGO R-40 slate gray, 2K	18,7 kg	10300008

only on request:

	Packaging Unit	Item Number
OBTEGO R-40 mouse gray, 2K (special color from 300 kg)	18,7 kg	10300009
OBTEGO R-40 stone gray, 2K (special color from 300 kg)	18,7 kg	10300011
OBTEGO R-40 componente B	0,37 kg	10300013



platinum gray
(based on
RAL 7036)

stone gray
(based on
RAL 7030)

mouse gray
(based on
RAL 7005)

slate gray
(based on
RAL 7015)



BEFORE



AFTER

OBTEGO R-50

Waterborne protective sealer for concrete floors.

OBTEGO R-50 reduces the penetration of aqueous liquids, grease, oils and other dirt. The product is easy to apply and imparts high gloss when burnished. The effectiveness depends on the material and absorption of the surface. Depending on the material and surface treatment, it can also lead to different results in the resistance of stain protection.

	Packaging Unit	Item Number
OBTEGO R-50	10 liter	10300004



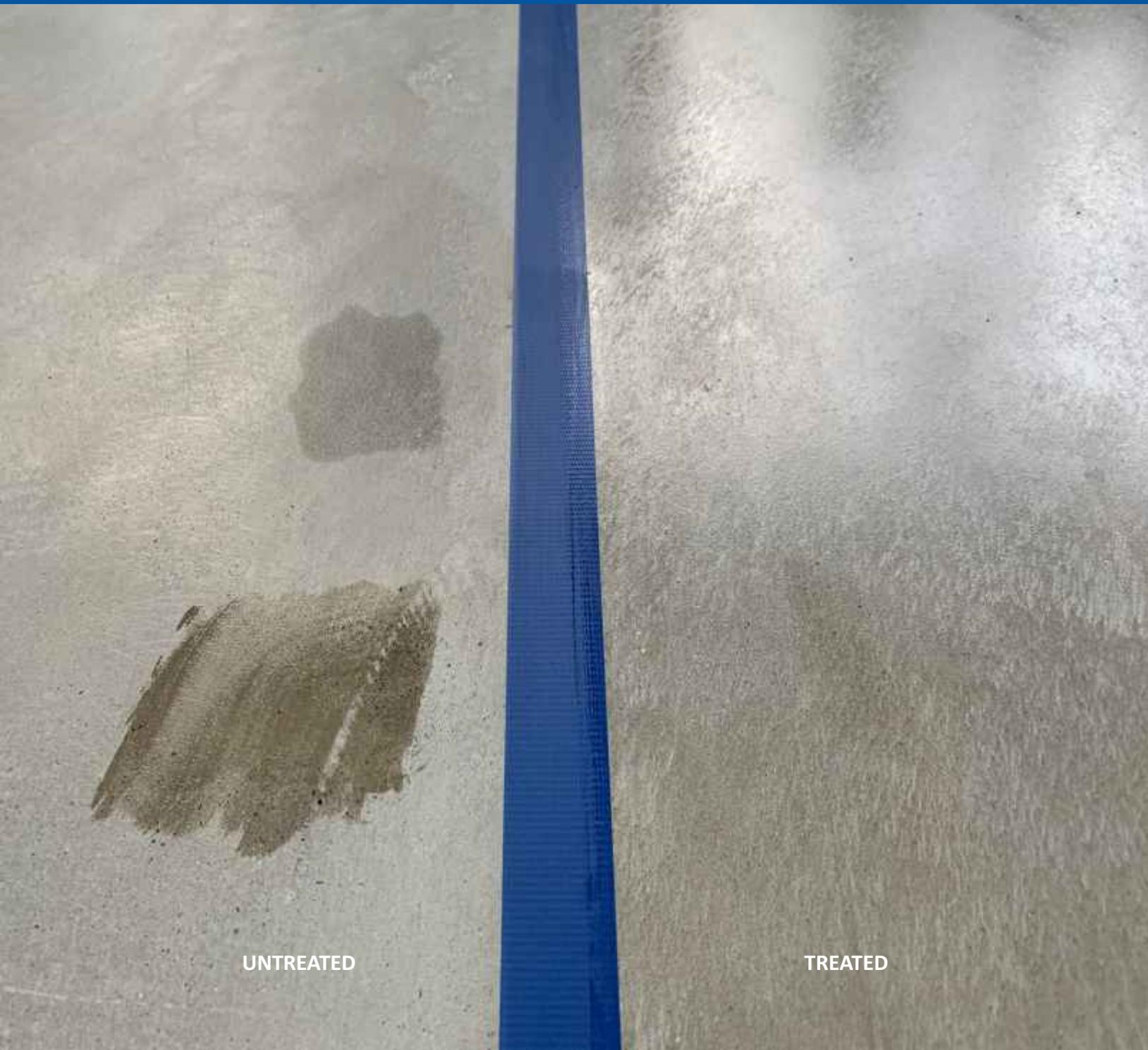


OBTEGO R-400

Solvent-borne, silane-based special sealer with an excellent water and oil repellent effect.

OBTEGO R-400 reduces the penetration of aqueous liquids, grease, oils, and other dirt. The product penetrates deep into the surface and causes a color deepening. The water absorption is strongly reduced, while the water vapor permeability is only marginally affected. The active ingredients are UV-resistant and non-yellowing.

	Packaging Unit	Item Number
OBTEGO R-400	10 liter	10300007



UNTREATED

TREATED

Dyes

In addition to products for surface preparation, pretreatments and special impregnators, OBTEGO AG offers also concrete dyes for a subsequently coloring of cementitious surfaces. An uniform wetting of the surface ensures a homogeneous appearance.

The OBTEGO concrete dyes are optimally adapted for the impregnations of the OBTEGO R-Series.



Golden yellow



Sand



Terracotta



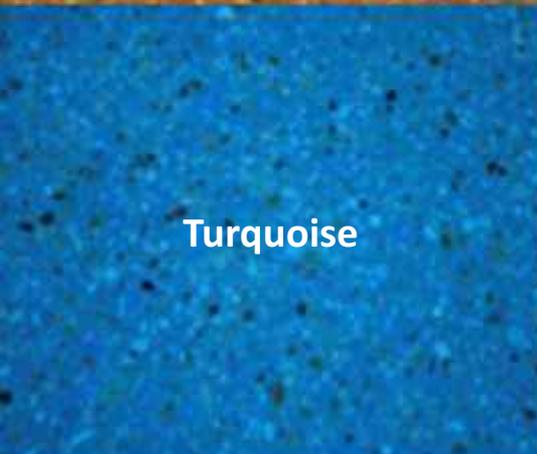
Orange



OBTEGO[®]
innovative surface protection



Red



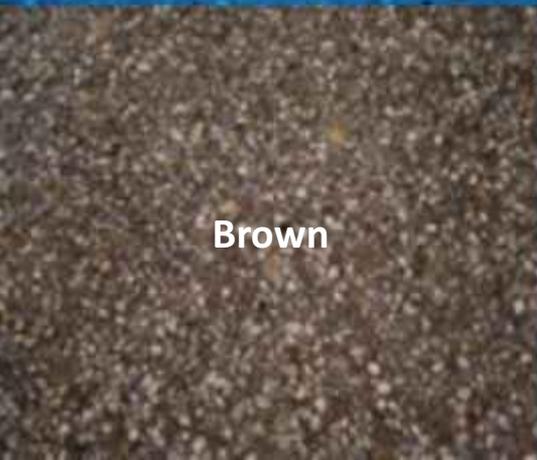
Turquoise



Blue



Green



Brown



Black



Gray

OBTEGO Concrete Dye

Dye for subsequent coloring of cementitious surfaces.

The product was especially developed for diamond-polished concrete and is designated for interior use. It penetrates deep into the surface and forms a bond with the concrete. Concrete Dye is part of a system with OBTEGO silicates and impregnators. A uniform wetting of the surface ensures a homogeneous appearance. The product effects like a glaze. Structures or aggregates are still visible and are not covered as with a paint.

	Packaging Unit	Item Number
OBTEGO Concrete Dye Blue	10 liter	10250001
OBTEGO Concrete Dye Brown	10 liter	10250002
OBTEGO Concrete Dye Golden yellow	10 liter	10250003
OBTEGO Concrete Dye Gray	10 liter	10250004
OBTEGO Concrete Dye Green	10 liter	10250005
OBTEGO Concrete Dye Orange	10 liter	10250006
OBTEGO Concrete Dye Red	10 liter	10250007
OBTEGO Concrete Dye Sand	10 liter	10250008
OBTEGO Concrete Dye Black	10 liter	10250009
OBTEGO Concrete Dye Terracotta	10 liter	10250010
OBTEGO Concrete Dye Turquoise	10 liter	10250011



Cleaning and Maintenance

OBTEGO C-Series products are strippers and cleaners for routine cleaning of water-resistant surfaces and flooring, designed for professional use in a wide range of applications. It also includes maintenance liquids for industrial environments as well as general cementitious flooring.

OBTEGO AG uses very economical and high quality raw materials in its cleaning and maintenance products. The surfactants used are 98% biodegradable.



OBTEGO C-10

Alkaline, solvent-free basic cleaner with an optimal tuned combination of various cleaning components.

OBTEGO C-10 is excellently suitable for the basic cleaning of strongly stressed, soiled surfaces. The product dissolves and removes slightly oil and grease soilings, residues of floor care and maintenance products, slight wax films, and general soilings.

	Packaging Unit	Item Number
OBTEGO C-10	10 liter	10150001



OBTEGO C-100

Neutral cleaner with an optimal tuned combination of various cleaning components.

OBTEGO C-100 dissolves and removes slight soilings and is used for the manual and machine maintenance cleaning. The cleaner dries up streak-free.

	Packaging Unit	Item Number
OBTEGO C-100	10 liter	10150002
OBTEGO C-100 (Karton)	12 x 1 liter	10150003



OBTEGO C-105

Slightly alkaline, solvent-free cleaner concentrate for industrial floors with an optimal tuned combination of various cleaning components, which is especially suitable for the application with auto-scrubbers.

OBTEGO C-105 dissolves and removes slightly oil and grease soiling, abrasion from rubber, and general soiling.

	Packaging Unit	Item Number
OBTEGO C-105	10 liter	10150004





OBTEGO C-200

Maintenance liquid with a perfectly balanced combination of different detergents, impregnation agents and waxes for already impregnated floors.

OBTEGO C-200 dissolves and removes slightly impurities and is used for floor maintenance care. The maintenance liquid is used for manually application.

	Packaging Unit	Item Number
OBTEGO C-200	10 liter	10150005
OBTEGO C-200 (Karton)	12 x 1 liter	10150006



OBTEGO C-205

Highly reactive maintenance liquid with a perfectly balanced combination of cleaning agents, impregnation agents and silicates for industrial concrete floor coverings.

OBTEGO C-205 removes slight impurities and is used as maintenance cleaning on already treated OBTEGO floors. Furthermore the product refreshes the OBTEGO treatment through the containing impregnating agents and silicates. Through the application of the product, even the gloss is increasing. The maintenance liquid is used for manually application, as well as for use with auto scrubber machines.

	Packaging Unit	Item Number
OBTEGO C-205	20 liter	10150007



OBTEGO C-240

Lipid replenishing maintenance liquid with a perfectly balanced combination of different detergents, impregnation agents and waxes for already impregnated floors.

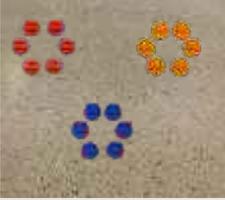
Main use of the product is for surfaces, which are treated with OBTEGO R-40. OBTEGO C-240 removes slightly impurities and is used for floor maintenance. The maintenance liquid is used for manually application, as well as for use with auto scrubber machines.

	Packaging Unit	Item Number
OBTEGO C-240	10 liter	10150008
OBTEGO C-240 (Karton)	12 x 1 liter	10150009





Application tools

Product	Description	Item Number
	pump sprayer, 5 liter For application of OBTEGO products from R-Series and P-Series incl. one nozzle 0,1 orange	25100005
	pump sprayer, 1,5 liter For application of OBTEGO products from R-Series and P-Series incl. one nozzle 0,2 yellow	25100006
	Nozzle for pump sprayer (set 5 pcs.) Various nozzles for professional spraying of OBTEGO products from R-Series and P-Series orange yellow blue	25100001 25100002 25100003
	Aluminium-Stick for Quick Connect holder Professional handle for use with Quick Connect holder; Length 147 cm	25100008
	Telescope stick Extendable stick, for roller holder	25100009
	Quick-Connect holder Special Velcro holder for microfiber finish mop Size 40 cm Size 60 cm	25100010 25100017
	Microfiber Finish Mop Necessary for homogenization of OBTEGO products from R-Series Size 40 cm: 1 PU (10 pcs.) Size 60 cm: 1 PU (5 pcs.)	25100011 25100018
	bracket for large area roller (500 mm) Professional bracket to connect to large area roller 500 mm	25100012
	Large area roller (500 mm) For homogenization of OBTEGO products from P-Series	25100013



Product	Description	Item Number
	Professional bracket to connect to small roller 150mm	25100014
	For homogenization of OBTEGO products from P-Series on small areas, edges, steps etc.	25100015
	For easier filling in pump sprayer or other container for 10 liter canister for 20 liter canister	25100019 25100028
	For cleaning of the pump sprayer, which had been used with OBTEGO R-400 10 liter	25150001
	Thinner for OBTEGO concrete dye 10 liter	25150002
	For the application of OBTEGO R-40	25100020
	For the application of OBTEGO R-40	25100021
	With handle for rollers up to 250mm	25100022



Cleaning- and Diamond pads

Product		Description	Item Number
	Buffing pad / Superpad	Suitable for single disc low speed machine which 17 inch diameter. Necessary to buff/polish of OBTEGO products from R-Series. 1 PU (5 pcs.)	25100016
Diamond pads		Suitable for single disc low speed machine which 17 inch diameter. Depending on grit size suitable for different applications. Ideal for lighter surface preparations and cleaning without detergents (chemicals) or for maintenance of OBTEGO treated floors.	
	Diamond pad 17" green (grit 220)	For cleaning and surface preparation of strongly soiled concrete floors and screeds. Abrasive pad to remove stubborn dirt.	25100023
	Diamond pad 17" pink (grit 400)	For cleaning and surface preparation of soiled concrete floors and screeds. Also usable for cleaning of industrial porcelain stone ware tiles.	25100024
	Diamond pad 17" beige (grit 800)	For cleaning and surface preparation of Terrazzo, artificial stone, marble and other natural stone. Also as next step after using 400 grit pad.	25100025
	Diamond pad 17" yellow (grit 1800)	Normally used as next and last step after 800 grit pad. This pad is also suitable for occasionally use to maintain concrete floors, but it should be not used permanent on OBTEGO treated surfaces. (Requires surface preparation with 400 and 800 grit pad).	25100026
	Diamond pad 17" white (grit 3000)	Buffing pad for daily maintaining and buffing of polished concrete, artificial stone and natural stones. Provide also best possible gloss after surface preparation. If applicable use dry with high speed burnisher.	25100027



Service and Seminars

Product	Description
On-site training or mock-up sample in Germany	We make together with you a mock-up sample on the job-site in order to convince your customer of the OBTEGO-benefits or instruct your employees on the construction-site how to work with the OBTEGO products (max. 1 day). So we would like to ensure that the customer is satisfied with the performance in your first OBTEGO project.
On-site training or mock-up sample in Europe	We make together with you a mock-up sample on the job-site in order to convince your customer of the OBTEGO-benefits or instruct your employees on the construction-site how to work with the OBTEGO products (max. 1 day). So we would like to ensure that the customer is satisfied with the performance in your first OBTEGO project.
OBTEGO Training Seminar	Seminar and training of OBTEGO product application on different floor substrates at the OBTEGO facility. Contents, dates and prices at www.obtego.com -> in the "News" or on request.





Technical information

Guideline for professional use and application

Inspection of the floor surface

Before starting any impregnation, it is essential to check whether the substrate itself is suitable for the intended use and if the surface is suitable for the treatment with OBTEGO products. If this is not the case, an afterwards impregnation does not make really sense. The main points to be checked are:

Quality of the floor surface:

The quality of the floor surface should have a compressive strength of at least 25 N/mm² (3.600 PSI). However, not only the compressive strength is an important point but also the scratch resistance/hardness of the surface. If scratching with a knife or a key causes scratches in the floor, or if finest aggregates break out, the floor surface is usually not suitable for any impregnation or must be densified/hardened with silicates so far possible.

Impregnation of new/fresh floor surfaces:

Before a new floor surface can be impregnated, it is essential to determine its residual moisture. The maximum value can be found in the technical data sheet for the products used and it is usually $\leq 4\%$ CM. Since a CM measurement is destructive, in most cases electronic measuring devices such as capacitive moisture meters used. The company TRAMEX or TROTEC have proven themselves here. In some circumstances and due to remaining pore water, the floor surface cannot absorb the impregnation completely, evenly and sufficiently if the residual moisture is too high. This can lead to cloud formation, efflorescence or even limited functionality of the impregnation.

Cleaning or diamond cleaning

Before applying any treatment or surface protection, the floor surface must be at least washed several times with an auto-scrubber machine and suitable cleaning pads. An effective cleaning is necessary to remove superficial impurities, efflorescence, cement slurry, etc. If a cleaning just with auto-scrubber is not sufficient enough, it is recommended to use diamond cleaning pads or make a soft grinding/polishing step with resin bond diamond tools with grit # 100 or # 200 in order to remove e.g. marks from plastic foil (concrete curing), marks from power trowelling and slight roughness depth, for example. A diamond cleaning step with a grinding machine (not a single-disc machine) usually makes the floor surface even more appealingly. In both cases, the floor surface must be washed wet several times with an auto-scrubber machine after the grinding/polishing step. Just to use a vacuuming cleaner (dust extractor) after the grinding/polishing step to remove the dust from the surface (if dry grinding/polishing) and afterwards wet wiping with a mop is not sufficient enough.

After cleaning process, the surface must be dry completely. Even after cleaning, the residual moisture must be controlled again before the impregnation can be applied.

Pre-treatment (optional)

If the floor surface shows cavities or larger pores, these must be closed before applying any impregnation. OBTEGO X-300 (repair mortar) is suitable to close breakouts or cavities. OBTEGO SP-100 pore filler can be used for pores up to a size of approx. 5mm.

In case of a highly absorbent surface or a floor which has a poor scratch resistance/hardness, a pretreatment with an OBTEGO silicate is required. The strength of a soft, cementitious surface can thus be increased and at the same time the absorption can be reduced. However, if the floor is of a very poor quality, the treatment with a silicate does not lead to a 100% suitable surface, but certainly to an improvement. Our pre-treatments OBTEGO P-10 and P-20 (or P-20 n.V.) are suitable for reducing the absorption of the floor surface. Those pre-treatments also reduce a color deepening (color enhancement); e.g. if an afterwards application of OBTEGO R-400 is planned.

Note: With floor heating, activate heating program (up- and down heading of floor) before applying any impregnation or protection system, otherwise possible residual moisture in the floor could lead to undesirable efflorescence or even hairline cracks.

Protection - Impregnation

The floor surface must be clean and dry before applying any impregnation. Residual moisture of the floor surface must be controlled. Consider also, that moisture can exist on the floor if the surface temperature is under the dew point. The floor temperature should therefore always be 3 ° C above the dew point. (see Dew point table on page 43)

Generally, it is recommended to make a sample area in an inconspicuous place, since some impregnations can change the color and gloss of the surface. Therefore, the selection of a suitable impregnation should be coordinated with the client, based on the requirements and use of the floor in advance.

Hydrophobic impregnators and impregnators are non-film-forming surface protection systems. Impregnators can maximum built up a thin film on the surface if applied until saturation of the surface. Impregnators can therefore not provide 100% acid protection, but improve the resistance to acid attack. In addition to simple, water-repellent impregnators, there are also premium solutions with an increased protection against the penetration and soiling of oil and grease. Depending on the floor itself as well as on the applied surface preparation, the effect and duration of the selected protection system can be very different. If there is no experience or in cases of doubt, a sample area should always be applied with regard to appearance, protective effect and consumption.

The following table shows a brief overview of the OBTEGO impregnations:

Product	film-forming	color deepening effect	water repellent*	oil and grease repellent*
OBTEGO R-30	no	light	Basic	Basic
OBTEGO R-40	yes	colored; translucent to opaque	Plus	Plus
OBTEGO R-50	yes	light	Plus	Plus
OBTEGO R-400	no	intensive	Premium	Premium

* The description of Basic, Plus und Premium means the effectiveness of the protection. However, the functionality of the protection depends of the substrate itself, the surface preparation and the amount of applied impregnation material. Therefore it cannot be specified a time range about the resistance.

Basically, products such as R-30 or R-50 do not cause any significant color deepening effect. However, since the material penetrates into the pore structure, the surface naturally appears a little bit richer in color as an untreated area.

Since there are different requirements for surface protection in the market, some standard systems have been arisen:

System variant	Purpose of application / Properties
OBTEGO R-30	Logistics areas /ware houses · transparent · dust free · increase of hardness and densification of pore structure · basic protection properties · easy to clean
OBTEGO R-40	Commercial /industrial areas with light to medium heavy traffic · colored; translucent to opaque · dust free · increase of hardness and densification of pore structure · good surface portection properties · film forming product
OBTEGO P-3 + OBTEGO R-50	Commercial /industrial areas with medium to heavy traffic · transparent · dust free · increase of hardness and densification of pore structure · good surface protection properties · can be polished to high gloss · light film forming
OBTEGO R-30 + OBTEGO R-400	Commercial / industrial areas with highest traffic · transparent · dust free · increase of hardness and densification of pore structure · very good surface protection properties

Protect floor surface for subsequent workings

Especially with decorative floors such as power trowelled design screeds, terrazzo or self-leveling compounds a subsequent floor covering (floor protection) is recommended. Very often treated floors are covered too early or incorrectly. If a protected floor is covered/protected too early and the impregnation is not fully cured, collide coverings and overlapping areas can lead to visible pressure marks (lines). These marks, can usually only be removed with greater expense if the floor was covered for a longer period of time. In the case of extreme pressure marks, the floor surface often has to be grinded/polished with a diamond cleaning pad or a fine diamond tool and the impregnation has to be applied again. Depending on material consumption and drying conditions, do not cover impregnated floor surfaces before 48, better 72 hours (under normal conditions; room temperature 20 ° C and good air circulation).

Floor coverings must always be made of diffusion-open and non-bleeding material. The cover material must also not bleed if it comes into contact with water. In addition to color changes in the floor, the functional properties of the impregnation may also be reduced if the floor surface is not covered with suitable material. As suitable floor coverings diffusion-open fleeces or cardboards are suitable. For vapor-permeable fleeces, we recommend the HAMMERFEST products from Protect & Cover from Schorndorf (Germany) or similar. These have absolutely proven themselves and are also promoted by BG-Bau (DGUV certificate).

Cleaning and Maintenance

Correct cleaning and maintenance is an absolute must, primarily with decorative floors. Nevertheless, at industrial used areas, building owners or tenants usually make no great effort for cleaning and maintenance.

Basically, floor surfaces treated with OBTEGO are cleaned with a damp mop. For large, free and industrial areas an auto-scrubber with clear water is mainly used. OBTEGO maintenance cleaners or OBTEGO basic cleaners can be used, to remove superficial soiling's more easily and faster. For more detailed information, please refer to our cleaning recommendations.

Note: In the case of decorative floor surfaces, additional measures may be necessary to protect the floor from scratches (e.g. clean-off zones at entrances, felt pads on chairs and tables, etc.).

Dew point table

Air-temperature in °C	Dew point temperatures in ° C with a relative humidity of										
	45 %	50 %	55 %	60 %	65 %	70 %	75 %	80 %	85 %	90 %	95 %
2	-7,8	-6,6	-5,4	-4,4	-3,2	-2,5	-1,8	-1,0	-0,3	0,5	1,2
4	-6,1	-4,9	-3,7	-2,6	-1,8	-0,9	-0,1	0,8	1,6	2,4	3,2
6	-4,5	-3,1	-2,1	-1,1	-0,1	0,9	1,9	2,7	3,6	4,5	5,4
8	-2,7	-1,6	-0,4	0,7	1,8	2,8	3,8	4,8	5,7	6,5	7,3
10	-1,3	0,0	1,3	2,5	3,7	4,8	5,8	6,8	7,7	8,5	9,3
11	-0,4	1,0	2,3	3,6	4,7	5,8	6,7	7,7	8,6	9,4	10,2
12	0,4	1,8	3,2	4,5	5,6	6,7	7,8	8,7	9,6	10,5	11,3
13	1,3	2,8	4,2	5,4	6,6	7,7	8,7	9,6	10,5	11,4	12,2
14	2,2	3,8	5,1	6,4	7,6	8,7	9,7	10,7	11,6	12,6	13,4
15	3,1	4,7	6,1	7,4	8,5	9,6	10,7	11,7	12,6	13,5	14,4
16	4,1	5,6	7,0	8,3	9,5	10,6	11,7	12,7	13,6	14,6	15,5
17	5,0	6,5	7,9	9,2	10,4	11,5	12,5	13,6	14,5	15,4	16,2
18	5,9	7,4	8,8	10,1	11,3	12,4	13,5	14,6	15,4	16,3	17,3
19	6,8	8,3	9,8	11,1	12,3	13,4	14,5	15,5	16,4	17,4	18,2
20	7,7	9,3	10,7	12,0	13,2	14,4	15,5	16,5	17,4	18,4	19,2
21	8,6	10,2	11,6	12,9	14,2	15,4	16,4	17,4	18,4	19,3	20,2
22	9,5	11,2	12,5	13,9	15,2	16,3	17,4	18,4	19,4	20,3	21,2
23	10,4	12,0	13,5	14,9	16,0	17,3	18,4	19,4	20,4	21,3	22,2
24	11,3	12,9	14,4	15,7	17,1	18,2	19,2	20,3	21,4	22,3	23,2
25	12,2	13,8	15,4	16,7	18,0	19,1	20,2	21,4	22,3	23,3	24,2
26	13,2	14,8	16,3	17,7	18,9	20,1	21,3	22,3	23,3	24,3	25,2
27	14,1	15,7	17,2	18,6	19,8	21,1	22,2	23,3	24,3	25,2	26,1
28	15,0	16,6	18,1	19,4	20,9	22,1	23,2	24,3	25,3	26,2	27,2
29	15,9	17,6	19,0	20,5	21,8	23,0	24,2	25,2	26,2	27,3	28,2
30	16,8	18,4	20,0	21,4	23,7	23,9	25,1	26,1	27,2	28,2	29,1
32	18,6	20,3	21,9	23,3	24,7	25,8	27,1	28,2	29,2	30,2	31,2
34	20,4	22,2	23,8	25,2	26,5	27,9	28,9	30,1	31,2	32,1	33,1
36	22,2	24,1	25,5	27,0	28,4	29,7	30,9	32,0	33,1	34,2	35,1
38	24,0	25,7	27,4	28,9	30,3	31,6	32,8	34,0	35,0	36,1	37,0
40	25,8	27,7	29,2	30,8	32,2	33,5	34,7	35,9	37,0	38,1	39,1

About silicates and OBTEGO silicate portfolio

History

2000 years ago the Romans used Opus Caementicium, also known as “Roman concrete”. This mixture consisted essentially of sand, water, lime and rocks. To make this mixture harder, volcanic ash was added. This volcanic ash came from the Pozzuoli area, hence the current name pozzolana come from. Pozzolans consist of clay, iron oxide, alkaline components and silicates. The silicates contained served then as now to solidify the concrete.



Nowadays the individual silicates are used in pure form or with additives to improve the hardness of the concrete surface and to reduce the capillary water absorption. Different types of silicate are available for this.

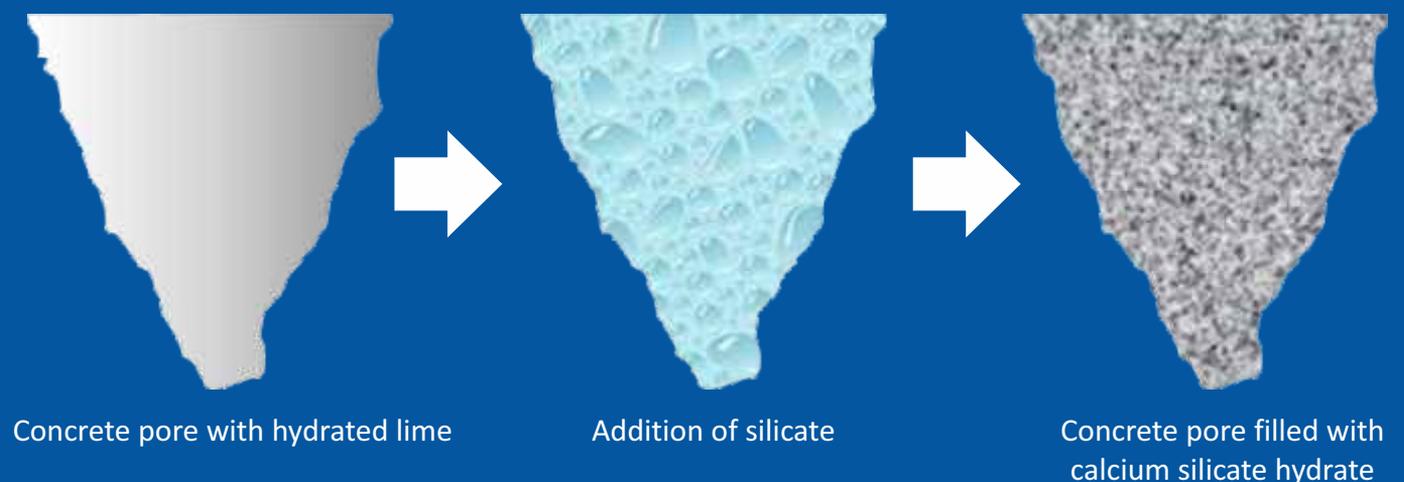
Mode of action

Water glass is alkali silicate powder dissolved in water, e.g. Sodium, potassium or lithium silicate. These dissolved silicates react in concrete with hydrated lime to form calcium silicate hydrate.

The gel formation that can be observed when applying silicates on concrete is a process that can be attributed to this reaction. A stable structure similar to glass is created in the pore structure, which has a positive effect on the concrete properties in terms of scratch resistance and the reduction of capillary water absorption.

The application of silicates also reduces any sanding of the concrete, which significantly simplifies the subsequent maintenance of the floor.

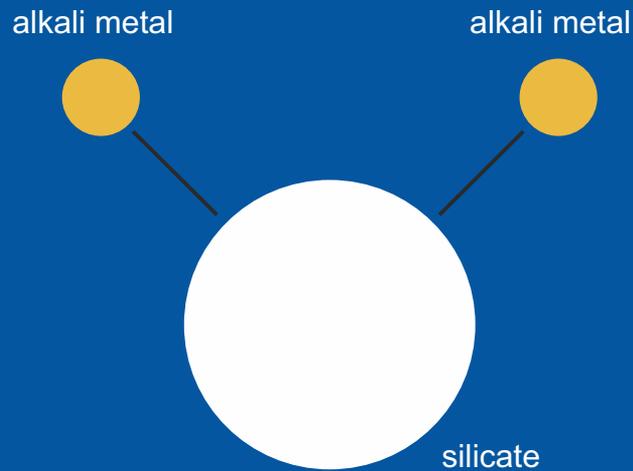
Silicates react with hydrated lime to form calcium silicate hydrate, which hardens the concrete structure.



Types of silicates

- Sodium silicate: compound of silicate and the alkali metal sodium
- Potassium silicate: compound of silicate and alkali metal potassium
- Lithium silicate: compound of silicate and alkali metal lithium
- (Colloidal silicates: pure silicate molecules dissolved in water)

Greatly simplified structure of silicate



The following table gives an overview of the effects of using different types of silicate:

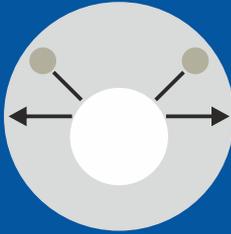
	Sodium silicate	Potassium silicate	Lithium silicate
Gelling effect time	fast	medium	slow
Reaction time with concrete	fast	medium	slow
Penetration into concrete	less	more	more
Hardening of concrete	more	medium - less*	less*
Water absorption of concrete	more	less*	less*

* The market shows that silicate mixtures of different silicates are well accepted, as they combine the positive properties of each single silicate.

Proportions

Simplified relation of the silicate sizes to illustrate the size relationships.

Potassium silicate



1,338 nm

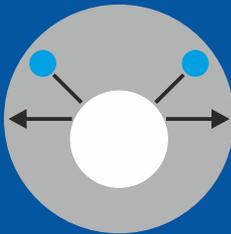
billiard ball



57 mm



Sodium silicate



1,158 nm

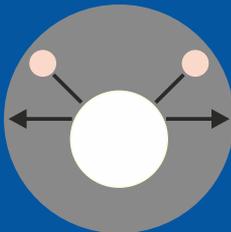
golf ball



42 mm



Lithium silicate

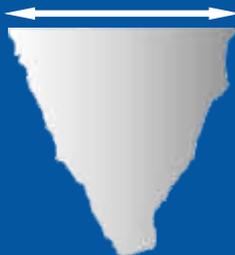


1,022 nm

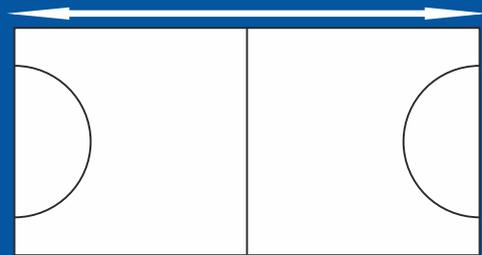
table tennis ball



38 mm



Pore size in concrete
0,001 mm \approx 1000 nm
(assumption)



length of a handball field



Silicate sizes are in the nanometer range. The differences are very small. Therefore, the derivation of penetration based on the different silicate sizes is only possible to a very limited extent.

Our silicate portfolio

Type of products

Pure Silicates: Silicates such as sodium, potassium or lithium in pure form without additives.

Mixed silicates: In order to maintain the individual positive properties of the silicates and an attractive price-performance ratio, silicates such as Potassium and lithium offered as a mixture in aqueous solution.

Silicates with additives: In order to adapt the product properties to the needs of the customer, silicates are provided with additives, these can, for example, additionally provide an improved water-repellent effect and / or more gloss.



Product properties

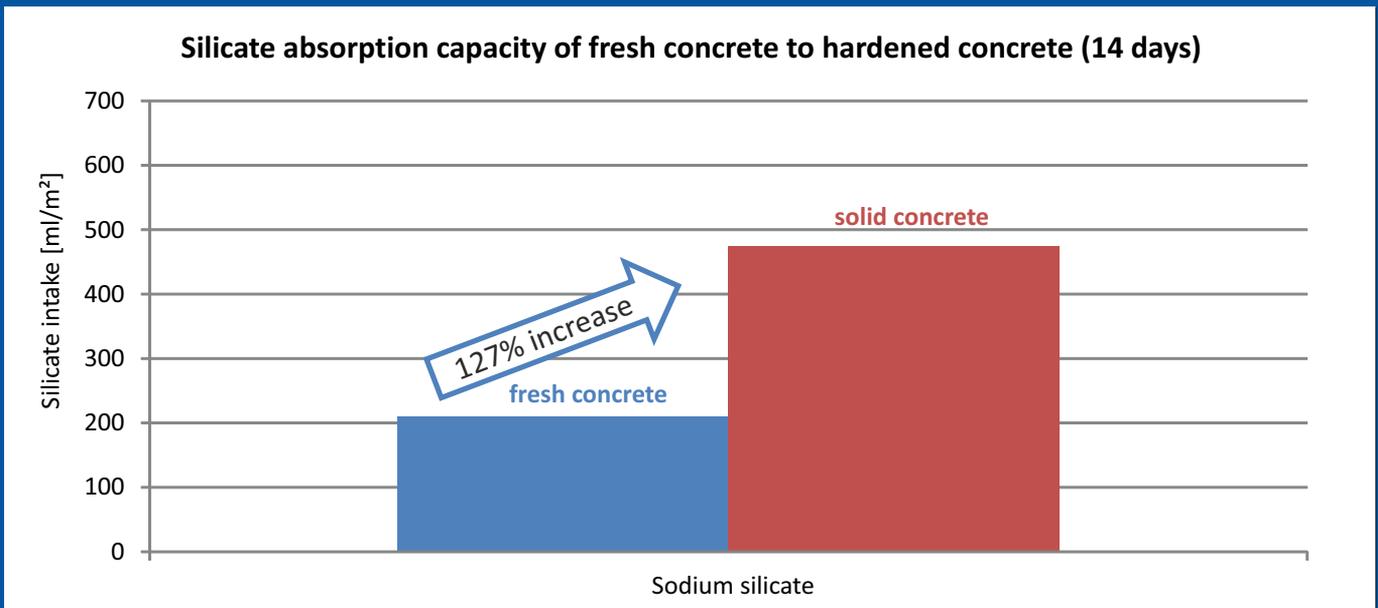
OBTEGO AG has tested a large number of different types of silicate in terms of abrasion and reducing capillary water absorption (densification) on concrete floors. Based on this knowledge, the silicates were further improved in terms of application and functionality. In addition, additional properties (such as a gloss effect) were taken into account. The silicate portfolio offers the customer the opportunity to use the best possible silicate, depending on the respective requirements, such as hardness / densification, gloss and protective effect.

	Gloss	Hardening and Densification	Protection	Description
OBTEGO P-2				Concrete densifier and surface hardener (Lithium silicate). Silicate with high active ingredient content for surface hardening of concrete floors (dust-binding).
OBTEGO P-3				Concrete densifier and surface hardener (Potassium-Lithium silicate). Silicate blend with high active ingredient content for hardening of concrete surfaces (dust-binding).
OBTEGO P-5				Concrete densifier and hardener with gloss effect and surface protection (Lithium silicate). Silicate with high active ingredient content for hardening of concrete surfaces (dust-binding). Reduce the capillary water absorption and increase the gloss level.
OBTEGO R-30				Premium densifier and hardener with surface protection (Hybrid silicate). Silicate with high active ingredient content for hardening of concrete surfaces (dust-binding). Strong reduction of capillary water absorption. Higher protective effect.

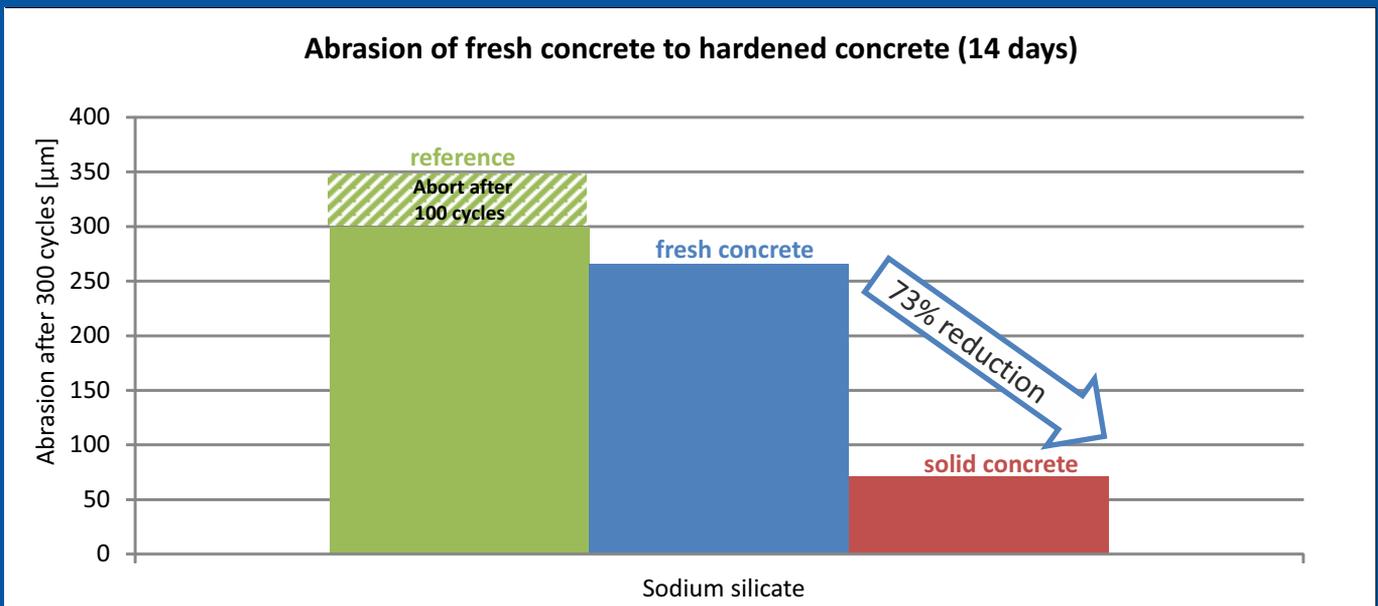
All OBTEGO silicates are free of VOC (volatile, organic substances) and can therefore be used in ecological buildings. Whether you are a grinding company looking for a silicate to harden the floor between diamond grinding steps or you want to apply a surface finish on a power troweled industrial floor, you are at the right place at OBTEGO AG.

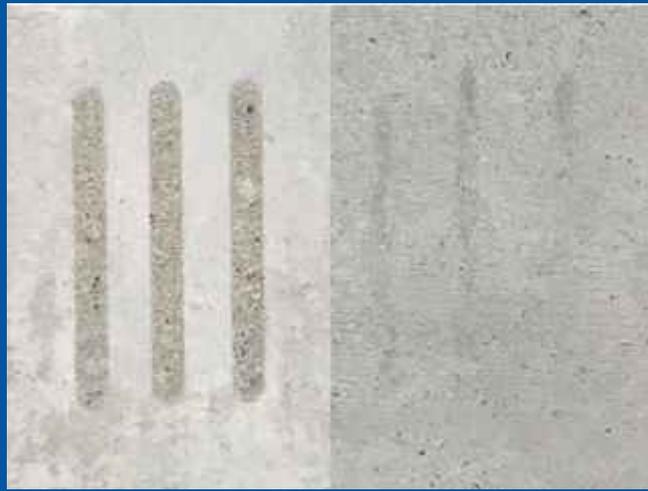
Silication of fresh concrete - useful?

Based on results of internal studies, regarding the functionality of silicates on concrete it makes more sense to wait. A later application leads to a better hardening, densification and durability of the concrete floor. Application tests showed, which improvements concerning abrasion resistance and capillary water absorption can be expected. Within the study fresh and hardened concrete, were treated with silicate. Even during the silicate application, it becomes clear that the silicate absorption capacity increases with the degree of drying of the concrete.



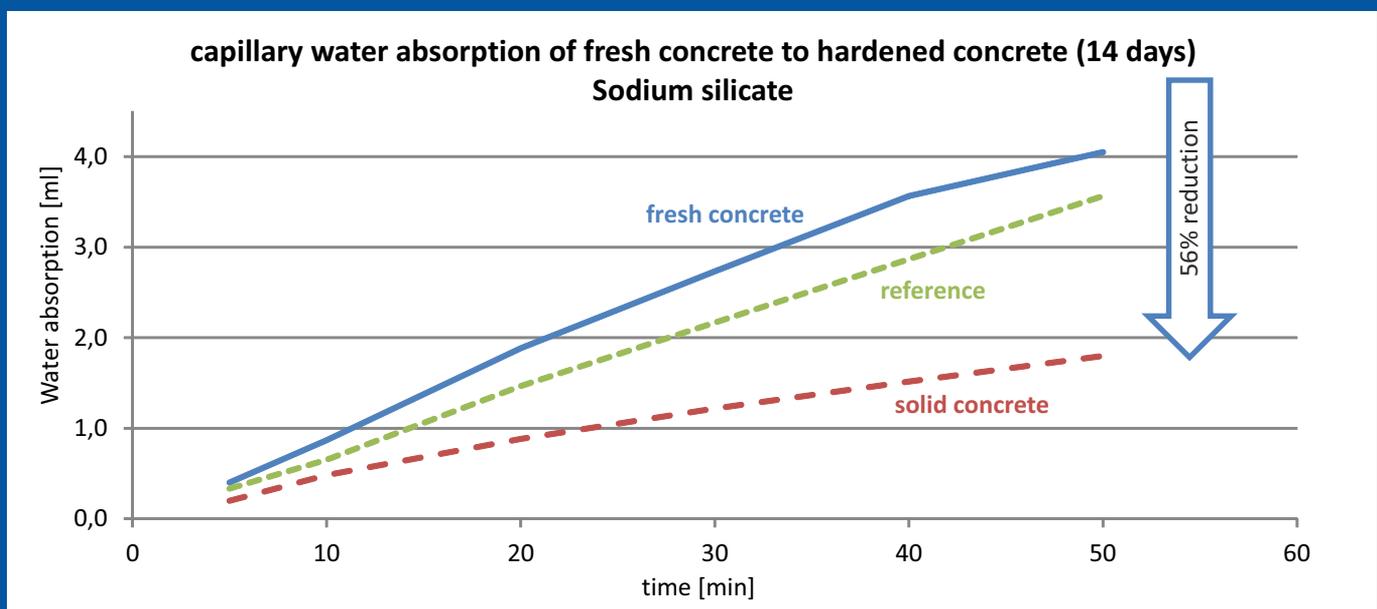
The treated fresh concrete indicates a clear disadvantage when it comes to abrasion resistance. Due to less absorption of silicate the hardening process is not ideal performing and therefore the concrete is weak. Measurements clearly show a higher abrasion on fresh treated concrete compared to hardened concrete.





Comparison of mechanical abrasion on silicate-coated fresh concrete (left) and hardened concrete (right). The hardened concrete was silicate after 14 days. The results relate exclusively to the test items used here.

A further disadvantage on fresh treated concrete is clearly evident when it comes to capillary water absorption. Less absorbed silicate means that more small cavities remain empty. This means that due to the capillary effect surface water is more strongly absorbed by the concrete.



Conclusion:

As the silicate absorption, as well the resulting reduction of capillary water absorption and reduction of mechanical water resistance get clearly indicated with this study, a treatment with silicate on hardened concrete should be preferred.

Surface protection

The standard DIN EN 1504 part 2 (surface protection systems for concrete) distinguishes between three types of protection systems. Depending on the type of surface and requirements of the protection a suitable protection system should be selected. Of course, with customer requests in many new areas such as power trowelled design screeds, terrazzo floors and design self-leveling compounds, aesthetic requirements are added in addition to the functional properties for industrial areas. These range from non-film forming, authentic concrete optics and haptics to colored surfaces.



Product groups according to DIN EN 1504 part 2



Hydrophobic impregnation (H)

Treatment of the concrete to create a water-repellent surface. Pores and capillaries are only lined out, but not filled. No film forming after application on the concrete surface. The appearance of the surface changes little or not at all.

NOTE: Active agents can be silanes and siloxanes.



Imregnation (I)

Treatment of the concrete to reduce the surface porosity and to strengthen the surface. The pores and capillaries are partially or completely filled.

NOTE 1: This treatment usually results in an uneven, thin film on the concrete surface.

NOTE 2: Binders can e.g. organic polymers.



Coating (C)

Treatment to create a closed protective layer on the concrete surface.

NOTE 1: The thickness is usually 0.1 mm to 5.0 mm. Special applications may require a thickness greater than 5 mm.

NOTE 2: Binders can e.g. organic polymers (with cement as an additive) or with polymer dispersion modified hydraulic cement.

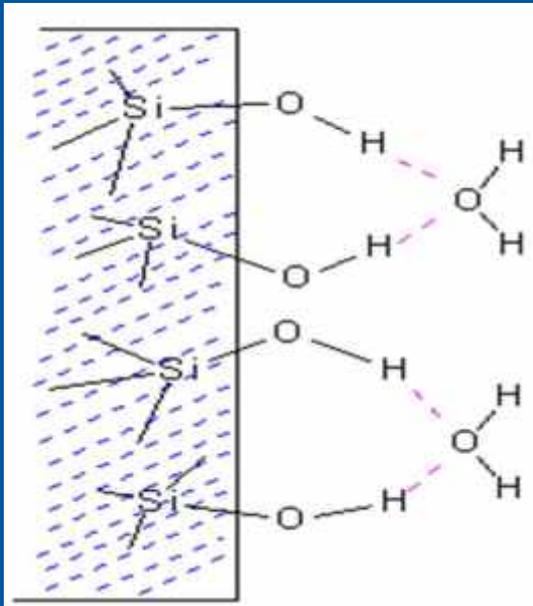
The products of OBTEGO AG primarily come within the performance feature "Protection against the ingress of substances", whereby the silicate-containing products also improve the mechanical properties (e.g. scratch resistance).

Since OBTEGO products are mainly penetrating products, that leave no or only a minimal film on the surface, they usually cannot scratch or peel off, like film-forming impregnators / sealers or coatings.

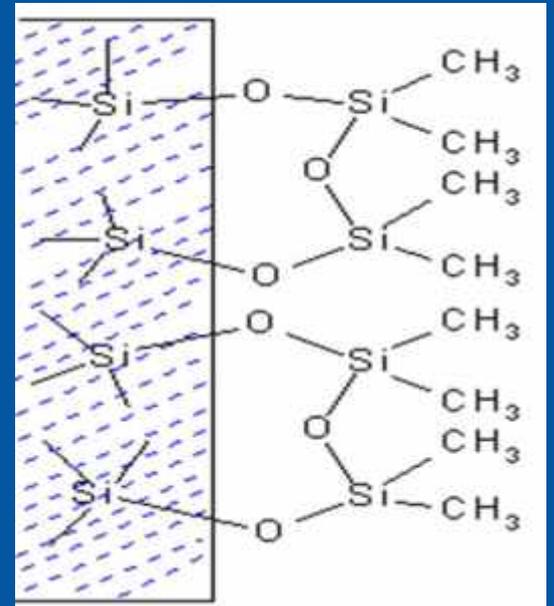
Hydrophobization

Reduction of the surface energy of mineral building materials. Water has a comparatively high surface tension, which is attracted by surfaces with high energy (such as concrete, aerated concrete, fiber cement, brick masonry, sand-lime stone, etc.).

Since the surface energy is reduced by hydrophobization, the water is no longer attracted. It is repelling.



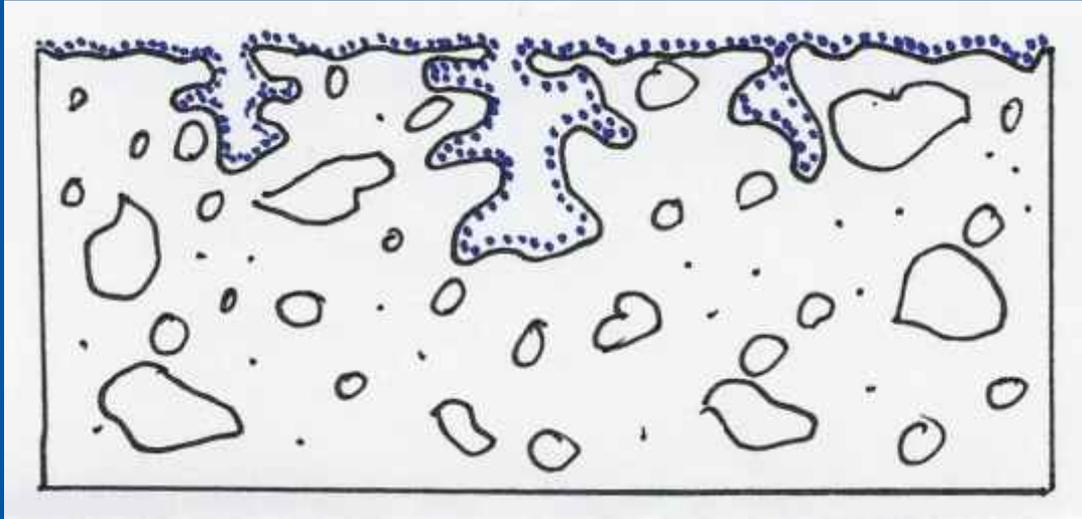
untreated building material surface
(with absorbing water molecules)



hydrophobized building material
surface (siloxane molecules firmly
bound and their water-repellent
molecular parts (here simplified only
CH₃ groups) facing outwards)

Hydrophobizations are mostly based on silanes / siloxanes and can penetrate several millimeters into the surface. This means that an impregnation cannot scratch or peel off. However, hydrophobization only lines out the pores and does not fill them. This means that the color of the surface is not or only minimally changed. On the other hand, the protective effect of the hydrophobization creates only a light basic protection. If liquids act on the surface for a longer period of time, staining still occurs. The use of standard impregnators in heavily used areas or for areas with increased stain protection requirements have to be considered very carefully.

Hydrophobic impregnation penetrates - the surface is only primarily protected and soiling still occur.





PLASTICIZER MIGRATION



SCRATCH

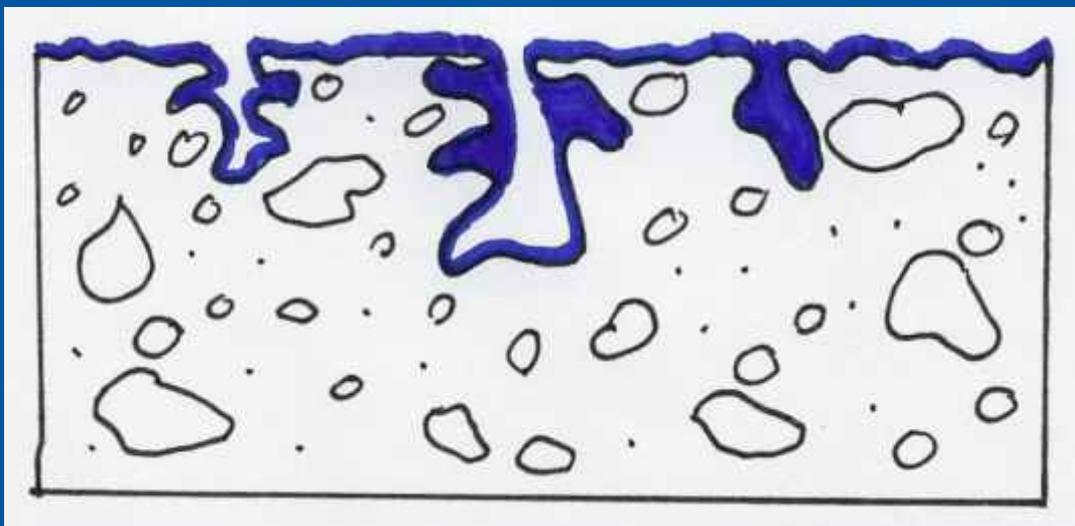
Impregnation

As already mentioned for the product groups, mostly polymers are used for such impregnators, which on the one hand penetrate little bit into the surface when the substrate is absorbing, but also leave a thin film on the substrate. Such impregnators / sealers can be based on acrylic resin dispersions, thin poly methyl methacrylate resins (PMMA) or also epoxy resins. As long as there is a closed film on the surface, there is also a protective effect.

Unfortunately, mechanical impact can easily cause scratches on the floor. If water is added to the damaged/scratched area, water can penetrate and for a long term reaction the film-forming surface protection system can peel off. In the case of not diffusion open and film-forming systems, bubbles can also blow up if moisture was trapped during impregnation. Rising moisture can get to a problem.

Plasticizer migration or black marks, lines, e.g. due to the friction of plastic or rubber tires on fork lift trucks, are also seen more often in film-forming protective systems than in products that are completely absorbed into the surface. The removal of such marks is usually only possible through mechanical use of e.g. abrasive cleaning pads or diamond cleaning pads if these marks are in the superficial area.

Impregnation / sealant is only thin layer on top - can scratch or peel off.







DAMAGED COATING

Coating

Thicker coatings (also self-leveling coatings), polymers (also with the addition of cement or fine aggregates), which are applied as a layer or in several layers on the surface. In most cases, a coating is not applied without a primer in order to ensure adhesion to the substrate.

Coatings can be based on epoxy resins, polyurethane resins or poly methyl methacrylate resins (PMMA), for example. As long as there is a closed film on the surface, nothing penetrates the subsurface. Coatings are usually crack-bridging and are mostly used in car parks and underground garages.

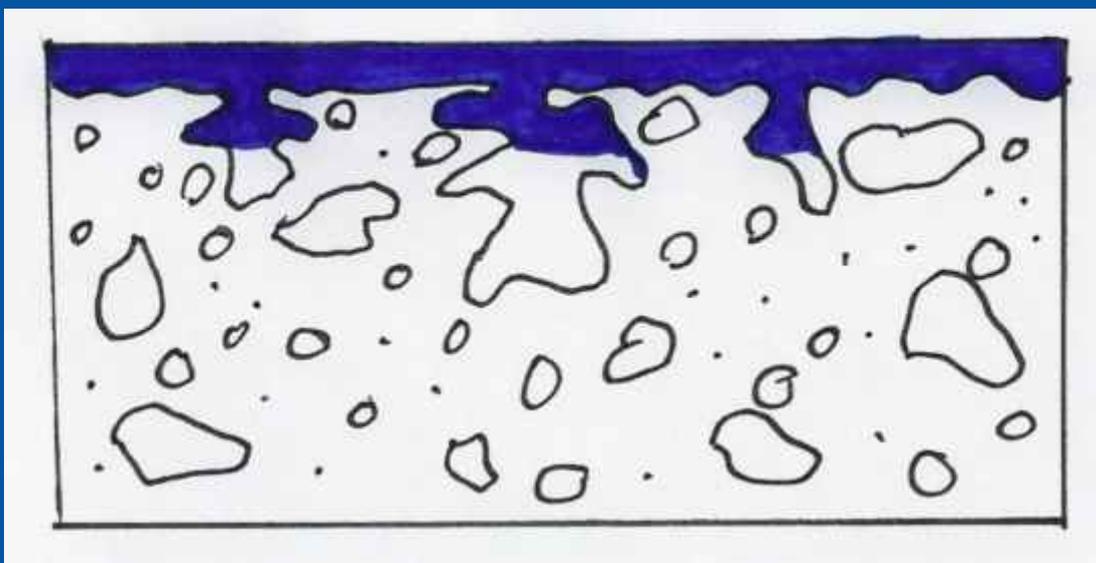
Coatings are declining in industrial halls because they are too expensive and too expensive to maintenance. High costs can arise here, especially in the subsequent renovation. Regardless of the fact of disposal and sustainability.

Coatings can also be scratched by mechanical stress and, as with the previously mentioned impregnators / sealers, infiltration and peeling of the coating can occur. Even with moisture from the subsurface, there is a risk of blistering and blowups. Specialist company is usually necessary for repairs to this surface protection system.

Plasticizer migration or black marks, lines, e.g. due to the friction of plastic or rubber tires on fork lift trucks, can also occur with coatings. The removal of such marks is usually only possible through mechanical use of e.g. abrasive cleaning pads or diamond cleaning pads, if these marks are in the superficial area.

However, if strong chemical resistance is required for industrial areas, a coating is essential. This also applies if slip resistance classes above R11 have to be achieved.

Coating is thick on top - can scratch or peel off.



Hybrid-Impregnation

Hybrid impregnations such as OBETEGO R-400 are a completely new type of surface protection product that is not covered in detail in the standardization. These are usually special mixtures of silanes and modified polymers or chemically modified silicates that meet two different requirements.

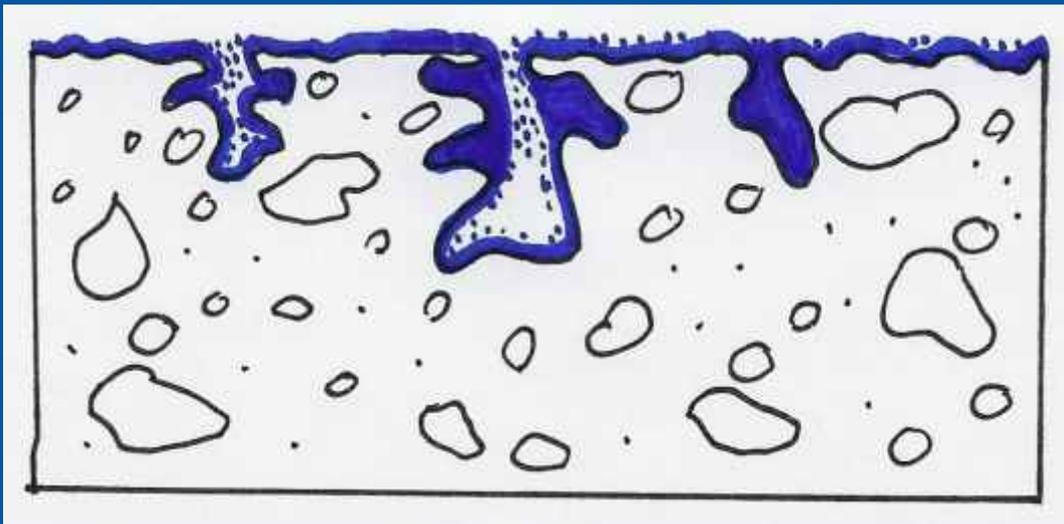
On the one hand, the product penetrates deeply into the surface, such as with a hydrophobization and at the same time it closes the pores as far as possible, as with an impregnation / sealing. In this way, surface protection is obtained that does not scratch or peel off and at the same time, good to very good stain resistance properties are achieved. A perfect solution for heavily used areas for industrial floors in production and logistics areas.

Migration of plasticizers cannot be 100% ruled out, but experience compared to film-forming surface protection systems shows that this is only to be expected in extremely rare cases. The subject of superficial black marks and lines caused by friction is also not to be found here.

Furthermore, a subsequent reworking of already treated areas is very easy. As a rule, for worn out areas a basic cleaning and re-impregnation of the surfaces is sufficient, while film-forming systems and coatings require more effort for surface preparation and new application.

The conductivity and slip resistance of treated floor surfaces are also not or only minimally influenced. This depends on the absorbency of the floor area and may need to be checked on-site with a sample area.

OBTEGO hybrid impregnators impregnates and also fills the pores. Surface protection without any disadvantages



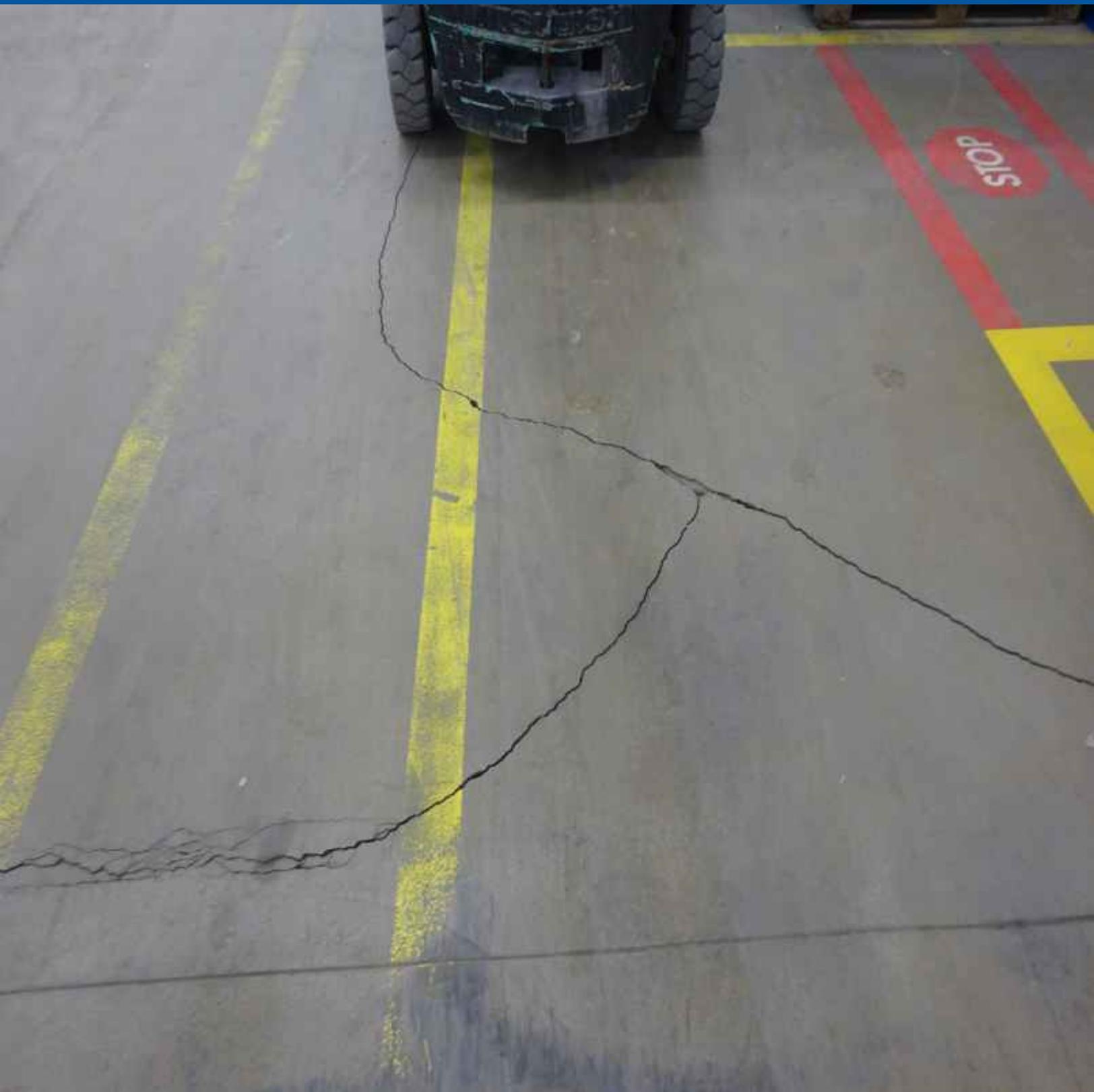


Concrete refurbishment

Concrete floors are exposed to enormous loads, especially in the industrial sector. Therefore, the best industrial floor must be renewed after years of intensive use. A refurbishment can be better and cheaper than a new concrete floor.

Our OBTEGO solutions are not only suitable for new buildings, but can also be used for refurbishments. With our solutions, worn floors can regain their shine and strength. You get a higher stain protection and a higher dust-free area for your surface and can make it denser and more resistant.

Our solutions are used, for example, for refurbishments of industrial floors in commercial enterprises, market halls, logistics centers, supermarkets and much more. The refurbishment of terrazzo and design floors is also possible with the OBTEGO solutions and products.





BEFORE



AFTER

Our solutions for refurbishments

Are you looking for a solution for your old and damaged cement surface? Our OBTEGO solutions are not only suitable for new buildings, but can also be used for refurbishments.

With our solutions, worn floors can regain their shine and strength. You get a higher stain protection and a higher dust-free area for your surface and can make it denser and more resistant. Our solutions are used, for example, for refurbishments of industrial floors in commercial enterprises, market halls, logistics centers, supermarkets and much more. The refurbishment of terrazzo and design floors is also possible with the OBTEGO solutions and products.

In addition to a high-performance special impregnation, our OBTEGO solutions also include a professional recommendation for substrate preparation and a cost-optimized cleaning and maintenance concept. Thus, existing cementitious floors can be washed first and then a special impregnation can be applied. Since mechanical abrasion on the floor coverings is usually unavoidable, care after a while is absolutely recommendable, so that you have an optimally protected and good looking floor even after years.

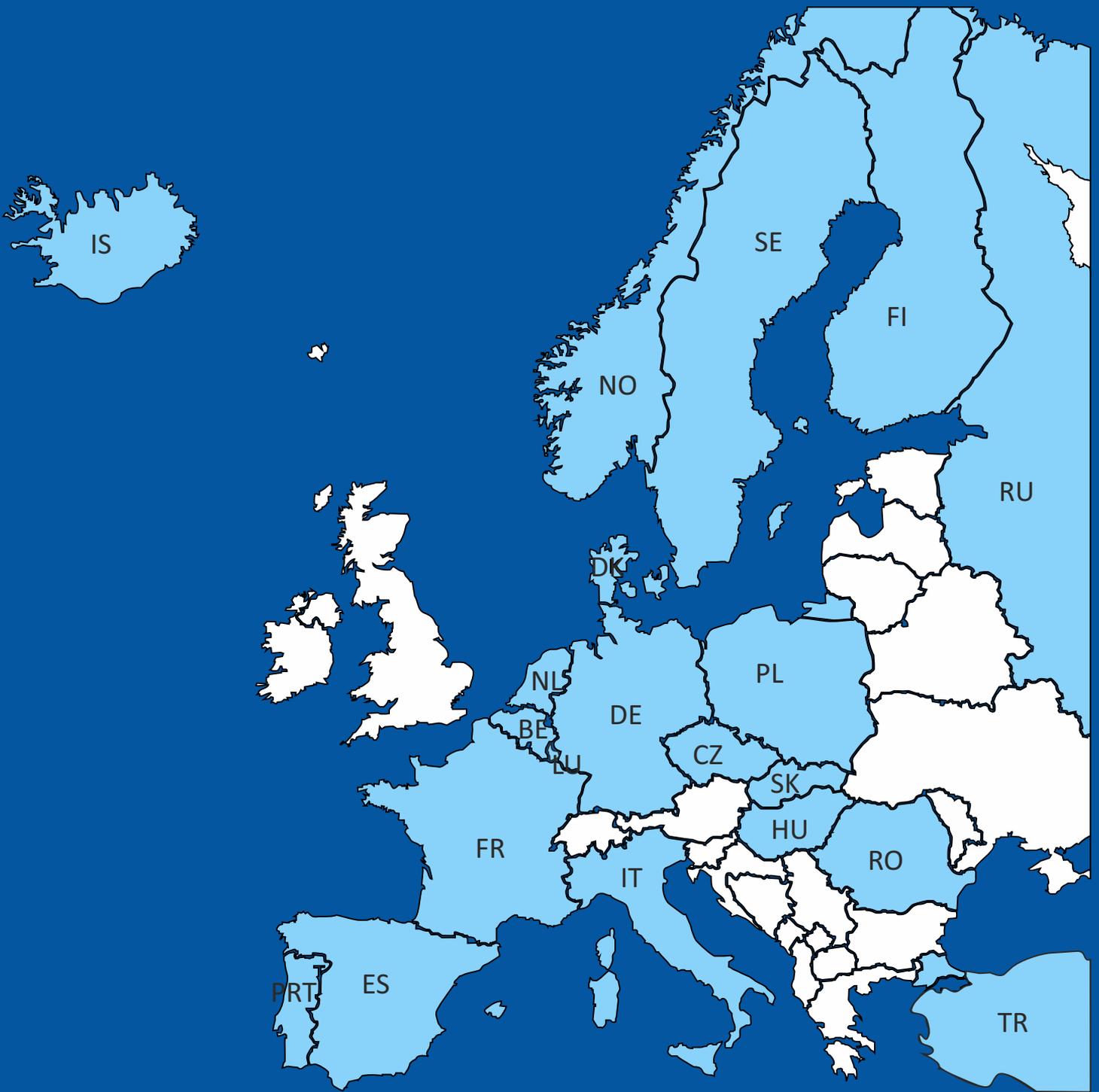
Depending on the type of floor and requirement profile, an individual solution must be developed for refurbishments. Which products are best suited for you, we clarify gladly in the context of an individual advice. We look forward to your inquiry.







Contact



How you can contact us

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