

RC M040

SODIUM SILICATE BASED SURFACE HARDENER, DUST REDUCER AND SEALER FOR NEW OR EXISTING CONCRETE FLOORS

Construction post-treatment, hardening, curing



ADVANTAGES OF RC M040

- ✓ Improves chemical and abrasion resistance
- ✓ Makes concrete completely dust-free
- ✓ Makes treated floor 33% harder
- ✓ Extends the life of the concrete
- ✓ For old and new concrete floors
- ✓ FROST-SALT RESISTANCE

Description

RC M040 gives the concrete a unique change. Due to the chemical process, the top layer becomes 33% harder, denser, dust-free and easier to maintain. These changes occur over a period of 6 to 12 months. RC M040 is based on silicate and can be applied on both old and new concrete floors.

Test report

TÜV NORD Bauinstitut Dessau, no. D13-00210: curing, resistance to abrasion, impermeability, Freeze-thaw-resistance: After 32 freeze thaw cycles, the RC M040 treated sample lost only 177.3 grams per square meter. The average acceptable loss after 28 freeze thaw cycles is 1500 grams per square meter. The RC M040 treated sample has an increase of 747% greater resistance to loss over the standard.*See also the Frost-Salt Resistance table on TÜV Performance.

Properties

- Does not contain VOC;
- Makes concrete completely dust-free;
- Slows down the outward migration of water from concrete as a curing agent;
- Improves maintenance;
- Improves chemical and abrasion resistance compared to untreated concrete;
- Makes treated floor 33% harder;
- Extends the life of the concrete;
- Solvent-free;
- Ready to use.

Application instructions

Freshly finished concrete:

1. RC M040 can be applied immediately after the finishing operation. RC M040 replaces ordinary curing compound. Immediately following the troweling operation, and as soon as the slab is safe (firm enough) to walk on, saturate the surface with the RC M040 at approximately 5 m²/liter using a low-pressure, high-volume sprayer and may also be applied by pouring it directly on the surface and spreading it evenly with a soft-bristled broom. Apply enough product to keep the surface thoroughly wet for at least 30 minutes. Can also be accomplished with the use of an auto-scrubber. After about 30 to 45 minutes, the product becomes gel-like slippery and smooth. Sometimes it can take up to 1 hour or longer to become slippery depending on the weather conditions such as wind and temperature. In extremely hot conditions, the RC M040 may begin to become slippery before the full 30 minute soak-in period. Additional product must be applied to the concrete in order to keep all areas of the concrete surface wet for at least 15-20 minutes before becoming slippery in these hot conditions.

2. Immediately after the RC M040 becomes slippery, lightly mist the surface with water. This can be done with either a low-pressure power sprayer or with a hose and nozzle (nozzle should be adjusted to create a mist). This step will resolubilize the RC M040 so that it is no longer slippery or gel-like. Agitate the floor with a broom to aid the penetration of the product. Wait for the RC M040 to become slippery or gel-like a second time.
3. Rinse the surface thoroughly and abundantly with water. During the flushing process, the floor should be agitated with brooms to help loosen and remove excess product from the surface.
4. Thoroughly squeegee the slab dry by pushing the water ahead of you off the slab edge. At this point, the floor should look like bare concrete with nothing on it. Note: During the squeegee process, there may be some slippery patches. This is an indication that excess product is still on the surface. These areas should be re-flushed and squeegeed again until the entire surface is dry. Can also be accomplished with the use of an auto-scrubber.

Existing concrete:

Carefully remove dust and dirt. Oils and fats can be removed with a solution of RC 14 in water (3-5% solution). In case of cleaning with water, the concrete must be sufficiently dry before treating it with RC M040. Any coatings, curing compounds or adhesive residues present must be completely mechanically or chemically removed. In case of chemical cleaning, rinse sufficiently with water and afterwards neutralize with a solution of RC CONCRETE CLEAN+ (1/10). The surface to be treated must be completely clean and dry so as not to impede impregnation with RC M040. When in doubt, perform a test representative of the entire surface. It is not suitable for light media, extremely porous or damaged surfaces (washed out). Ambient temperature must be minimum +5°C and maximum +35°C.

1. Saturate the surface with the RC M040 so that the entire surface is wet for minimum 30 minutes.
2. After 30-40 minutes, it becomes slippery underfoot, then thoroughly flush the entire surface with clear water and squeegee completely dry to remove all RC M040 residue. If the product becomes slippery prior to the 30 minute period, follow the instructions for freshly finished concrete (section above).

Concrete finished with a brush:

Saturate the surface with RC M040 using a high volume low-pressure sprayer. Keep the entire surface wet for 30 minutes with RC M040. Spray RC M040 on dry spots. After a period of 30 minutes, use a broom with fine bristles to remove any puddles or concentrations of RC M040 on the concrete. A second coat may be necessary on very porous surfaces that are roughly textured or that have been brush-finished. For large surfaces and higher application speeds, mechanical equipment (such as cleaning trolleys) can also be used to apply and brush the material or to subsequently remove excess material from the surface. Where 2 coats are required to achieve maximum compaction, the second coat can be applied 4 hours later. Allow previous layers to harden until they no longer stick before applying the next layer.

Vertical surface application:

Apply the RC M040 to the surface of the wall with a low-pressure sprayer or roller, starting at the top and working your way along the wall. Apply sufficient material to thoroughly wet the surface without allowing excessive amounts to run down the wall. As you work your way along the wall, if any previously sprayed areas appear to be fully absorbing the RC M040, re-spray those areas so that the entire wall is kept damp with the RC M040 for 30 minutes. Allow the treated surface to dry. If the treated surface is to be coated or painted or the natural appearance is to be preserved, thoroughly flush the vertical surface with water 10 minutes after initial 30 minute application period.

Exterior concrete application:

1. Saturate the surface with RC M040 using a high volume low-pressure sprayer. Keep the entire surface wet for 30 minutes with RC M040. Spray RC M040 on dry spots.
2. After the 30 minute application period, use a broom or mop to remove any puddles or concentrations of the RC M040 from the slab.

Additional notes:

- When the RC M040 is to be used as a curing agent, proper timing of the application is very important. Curing should be initiated when the concrete surface begins to dry, which starts as soon as accumulated bleed water evaporates faster than it can rise to the surface.
- In extremely hot, windy or sunlight exposed concrete slabs, the RC M040 can be used in conjunction with any other type of curing system if the additional cure is applied after the RC M040 application for additional curing benefits.

- Saw cutting may be done before or after the RC M040 is applied, depending on the immediate need for curing. It is critical in either case that the dust or slurry from cutting be immediately and thoroughly removed from the slab.
- Abnormally porous or soft concrete floors may require additional applications of the RC M040.
- This also applies to surfaces with open finishes, such as broom finished or scarified floors.

Consumption

5-6 m²/liter/layer. This value is theoretical and varies according to the surface porosity, surface profile, level differences, spillage, etc. In case of concrete finished with a brush, consumption can increase by up to 10%.

Technical characteristics

Form:	Clear liquid
After drying:	Transparent
Chemical basis:	Water solution sodium silicate
Solvents:	None
Sg:	~ 1,2 kg/l (at +20°C)
Penetration depth:	7 mm (test DIN 1048 1, 2 ,3)

Mechanical physical properties

Abrasion resistance:	32,7% increase in abrasion resistance compared to C25/30-concrete (ASTM C 779)
Impact resistance:	An increase of 13,3% (ASTM C 805)
Capillary absorption and water vapor permeability:	Sedimentation value, measured with a water column of 211 cm on a with RC M040 treated surface of 31,2 cm ² , was 0,002 cc per hour
Curing:	Increase of compressive strength of 40% in 7 days (ASTM C39)
Adhesion:	17% better adhesion with epoxy. No change with polyurethane. (ASTM D 3359)
Curing:	Efficacy 85%
Slip resistance:	0,86 dry, 0,69 wet (ASTM C1028)

Security

Consult the most recent Safety Data Sheet.

Remarks

Immediately wash any glazed, aluminum and highly polished surfaces that have been sprayed with water to prevent etching of the surfaces. Do not use on substrates previously treated with release agents, curing agents or asphalt until these layers have been completely removed. The gel-forming time can be extended at low temperatures (below +10°C), high humidity (from 80% to 100%) or in calm conditions. In warm conditions (above +25°C), gel formation can already occur before the material has penetrated sufficiently. In this case, apply additional RC M040 to keep the surface wet for the recommended 30 minutes. When applying, make sure not to skip dry spots to obtain a homogeneous result. Update as needed.

For both old and new concrete, any remaining or excess material must be thoroughly washed and removed. Inadequate rinsing before the excess product dries out can cause white spots. The solution with the residual material is non-toxic and can be discharged into the sewage system. The performance improvement of the substrates will largely depend on the age, the cement content, the moisture content, the porosity and penetration of the product into the substrate.

RC M040 does not compensate for poor quality substrates with a low cement content. It is not intended for light or very porous surfaces or surfaces with a worn surface. RC M040 does not hide serious stains or excessive wear. Not suitable for black polished concrete floors.

Tips for maintenance

Clean often: the water in combination with the friction of the cleaning brushes polishes the floor and intensifies the shine. Use red 3M scrub pads on the scrubber to intensify the shine. Use the RC CONCRETE CLEAN+ cleaning agent. Remove spilled liquids immediately. Acid concentrations will permanently etch the floor. Food such as mustard, grapefruit, wine, etc. will leave stains if not removed immediately. The development of the gloss on the floor can be accelerated by polishing the floor with a burnish machine after at least 30 days after applying RC M040. It is highly recommended that you have a product on hand to remove oil and grease stains.

Cleaning of equipment

Clean all tools and application equipment with water immediately after use. Cured material can only be removed mechanically. Rinse aluminium, glass and polished surfaces immediately.

Expectations from a RC M040-treated concrete floor

Immediately after treatment

- The hardening and dustproofing will take effect within the normal curing period on new concrete and within 24 to 48 hours on old concrete.
- The density and hardness of the floor will be immediately enhanced. However, care should be taken not to gouge the floor, the top layer is not scratch-free yet.
- The floor can be burnished with a high speed propane burnisher to accelerate the sheen, or cleaned daily using an auto-scrubber equipped with medium-aggressive nylon brushes and RC CONCRETE CLEAN+ cleaning agent.

3-6 months after treatment

- If the standard maintenance program is followed, smooth-troweled floor surfaces will develop a sheen.
- Note: A sheen will not develop on floors with an open, porous finish, or on floors with a broom finish.
- On steel-troweled floors, water typically begins to bead on the surface.

12 months after treatment

- A hard shell-finished surface will develop.
- Surface is resistant to oil penetration and moisture contamination.

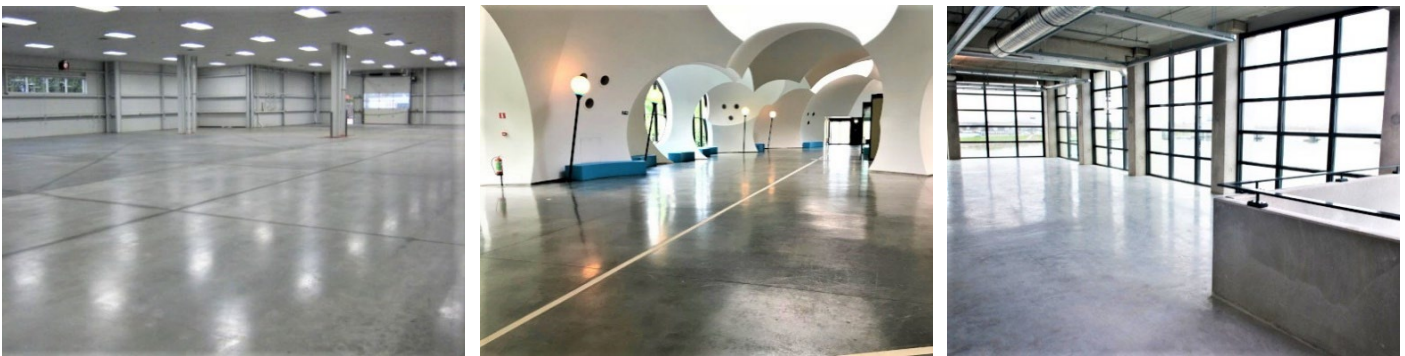
Storage / Shelf life

- 24 months after production date in original, sealed, unopened and undamaged packaging.
- Protect against frost and high temperatures (between +5°C and +30°C).

Packaging

25 liters (item no. 101005) or 1000 liters (item no. 101015).

Photos



Legal Notes

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