

CONICA Sports Systems

General Application Guidelines for Reliable Workmanship

In general, the information in our "Technical Data Sheets" applies for the individual materials. The details regarding fields of application, methods of application and the pre-treatment of the base are of particular importance.

For applications not documented in our Technical Data Sheets, a guarantee situation exists only if we have given a written confirmation.

Provided that no other information is given please follow the instructions listed below:

Substrate preparation

1. Asphalt

Asphalt substrates should be clean and load bearing. They should meet the requirements according to DIN V-18035-6.

2. Mineral substrates such as concrete and mortar screeds

The substrates to be coated must be prepared accordingly. The concrete substrate has to be firm, dry, load bearing, free of cement laitance, loose and brittle particles as well as substances which impair adhesion such oil, grease, rubber skid marks, paint or other contaminants.

After the pre-treatment, the bond strength must be $> 1.0 \text{ N/mm}^2$.

The moisture level must not exceed 4 % (check with CM equipment), which corresponds to maximum 75 % relative humidity according to ASTM F 2170. If using the calcium chloride test, the maximum allowable vapour emissions is 4.0 lbs. as per ASTM F 1869.

Suitable pre-treatment is grit or shot blasting (captive), sand blasting, high pressure water jetting, grinding, milling, etc. After treatment, the surfaces must be vacuumed with a suitable industrial vacuum cleaner (even after pre-treatment by water blasting). Even extremely firm substrates (i.e. vacuum concrete) require thorough pre-treatment as well as the use of special CONIPUR primers (if in doubt, contact our Technical Service).

3. Fresh concrete

Fresh concrete surfaces >7 days can be coated with a special primer. For details please refer to the relevant Technical Data Sheet or consult our Technical Service.

4. Magnesia and anhydrite based substrates

The finish type must be in accordance to ME 20 or AE 20 or better. The substrate must be dry, firm, load bearing, non-slip and free of dust, grease, rubber skid marks and other substrates likely to impair adhesion.

Any agglomerations of magnesium chloride on the surface of magnesia substrates must be completely removed.

Magnesia finishes are sometimes waxed after completion. Ensure that possible wax residues are completely removed. Light shot blasting is recommended as pre-

treatment for magnesia substrates. The surface should not be damaged.

Magnesia and anhydrite substrates lose their strength if exposed continuously to moisture. It is therefore mandatory that they are protected against rising damp.

Before applying the coating, the specific moisture levels must be adjusted, for magnesia substrates approx. 8% and for anhydrite substrates $< 1\%$. We strongly recommend that a test area be applied and assessed.

5. Steel

The substrate is pre-treated by sand or grit blasting to a standard of grade SA 2.5, as per DIN 55928-4.

6. Other substrates

For substrates other than those listed, please contact our Technical Service.

Climatic conditions

The workability of reactive resins is influenced by the ambient temperature, the temperature of the substrate and also by the relative humidity.

At low temperatures, the reaction is slowed down and, as a result of the increased viscosity; the amount of material used can increase. At the same time, the levelling properties can be reduced.

On the other hand, high temperatures accelerate curing and reduce the material working time.

Priming and sealing work may only be carried out at constant or falling temperatures in order to minimise the risk of blister formation due to the expansion of air entrapped in the pores of the substrate. This factor must also be taken into consideration in rooms with windows (influence of sunlight).

The surface temperature must be at least 3°C above the current dew point temperature when working with reactive resins, in order to avoid the risk of condensation forming on the substrate.

When using aqueous systems, it must be taken into account that there is a considerable increase in humidity as water evaporates and the dew point temperature will change.

When the limit is reached, work must be stopped immediately. After application, the materials must be protected from moisture for the period specified in the Technical Data Sheet in order to prevent white spotting (carbamate formation), stickiness, blisters and bubbles or foaming on the surface.

Damaged surfaces must be mechanically removed and re-applied.

Application method

IMPORTANT choose the place for mixing well

Most of two component CONIPUR materials are supplied in working packs; i.e. the resin and hardener components are in the correct proportions. Bulk packs (i.e. drums or containers) are **not** supplied in the correct proportions. Therefore, accurate scales or balances must be used to measure the correct amount of the 2 components. The contents of the drums must be stirred thoroughly before taking out portions thereof.

2 component materials are best mixed with a slowly rotating mixing device (i.e. drilling machine, planetary mixer, etc.), poured into a new container and re-mixed.

For further information regarding the mixing procedures and methods of application please refer to the relevant Technical Data Sheet.

Arrange for adequate ventilation when applying solvent containing materials indoors.

Pay attention and follow the measures necessary to respect the local safety, hygiene, union, environment and accident prevention regulations.

Application

According to the Technical Data Sheets CONIPUR materials are sprayed, brushed, cast or applied by screed, roller or squeegee. The two component products must be used immediately after mixing.

Primers are sprayed or rolled. When rolling, the material is re-rolled with a short hair roller in order to achieve good distribution and wetting of the substrate.

Solvent free epoxy primers should be broadcast with quartz sand in order to improve interlayer adhesion.

Coatings and self-levelling **mortars** are distributed evenly by notched trowels and or scrapers. By selecting the correct tooth size, even layers of the required thickness can be achieved. Spike rolling removes air bubbles, levels the surface and improves the aesthetic aspect.

Mortar systems are laid using levelling templates (trowels, screed bars, screed boxes, etc.) and are finally compacted by hand or using a trowel or by power float.

Top coats are sprayed or rolled. When rolling, the cast-on material is pre-distributed for example with a 25 cm wide roller across the hall in a width of about 1 meter. The

mixture is then carefully re-rolled with a 40 or 60 cm wide short / medium pile roller, while the previous lane is overlapped by several cm (always in the same line). In larger areas, it is recommended to use additional rollers / staff to reduce connection times for the individual lanes (<10-15 min). This work technique minimizes the presence of visible roller marks.

For all work is especially necessary to ensure that only as much material is mixed, as can be used within the temperature-dependent reaction time with the available people.

Consumption rate

The consumption rate of the material varies according to the roughness, porosity of the substrate, on the temperature of the substrate, of the material and the ambient temperature, as well as viscosity of the reactive resin used. That is why a coverage rate range is given in some of the Technical Data Sheets. The low coverage rate refers to an exceptionally even and only slightly porous substrate, the high coverage rate to a rough, porous substrate. In practise the coverage rate lays in the middle of the two values given.

How to avoid application failures

1. Working place, necessary equipment and the time table for installation must be well organised.
2. The material stock at the job site must be protected from the weather especially rain, heat and frost.
3. The strength, porosity, evenness, adhesion etc. of the sub-base must be checked.
4. In order to avoid confusion, each material should be stored according to type and batch numbers.
5. Qualified supervisors, with application experience for the system are needed to ensure the correct application of these expensive liquid products.
6. In general, cleanness of the tools and machinery is of a paramount importance.
7. Ensure a clean mixing station.
8. Make sure that all products are mixed properly using a forced mixing device for a minimum of 2 minutes. Then pour the mixed material into a clean container and mix again for a minimum of 1 minute.
9. If it rains or rain is expected stop the application immediately.
10. In order to meet the various standards, the material consumption rates given in the Technical Data Sheets should be observed.
11. Make sure the application is carried out under the guidelines for temperature, dew point, humidity etc. described in the Technical Data Sheets for the products.
12. During the application, the temperature, humidity and the coverage rate must be measured several times a day. The batch numbers of the products should be recorded.