

## SURFACE CONDITIONS

### GENERAL

In addition to the choice of the synthetic resin system, the preparation of the surface is also a key factor to achieve a good concrete repair or restoration.

#### A good adhesion depends on:

- The quality of the surface
- The condition of the surface
- The level of contamination of the surface
- The preparation method of the surface
- The humidity level of the surface
- The temperature of the surface



#### Please note!

A high-quality synthetic resin system will not be a good adhesive if the base has not been properly prepared or applied on subsoil which is in poor condition.

### THE QUALITY OF THE SURFACE

- The surface needs to be stable and resistant to the required loads (thickness, reinforcement bars...).
- The surface has to be sound and should have a good cohesion.
- The compressive strength must be at least 25 N/mm<sup>2</sup> (Mpa).

The compressive strength can be determined by using a Sclerometer for concrete and rocks. The hammer measures the rebound of a spring loaded mass impacting against the surface. The test hammer will hit the concrete at a defined energy. Its rebound is dependent on the hardness of the concrete and is measured by the test equipment. This test is a non-destructive method.

### SURFACE CONDITION

- Technically calculated expansion joints needs to be provided. Expansion joints must be reintegrated in the applied synthetic resin system.
- Cracks, holes and hollow sounding and/or loose parts must be repaired before covering the surface with a synthetic resin system. The synthetic resin system needs to be compatible with the floor.
- Make sure that the floor has the correct slope.
- The smoothness of the floor must meet the desired requirements. The difference in level cannot exceed 50% of the total thickness of the flooring system when using a self levelling system.
- Old layers of paint must always be removed. Contact our specialists when this appears to be impossible.
- Shrinkage cracks can be covered on condition that they are not acting as expansion joints, or in case they will not follow the movements of the structure or the substrate.
- Visible reinforcement steel must be treated.
- The "Curing compound", as present on poly concrete needs to be removed.



### CONTAMINATION, HUMIDITY AND TEMPERATURE OF THE SURFACE

- The surface must be in a good condition, free of all deteriorated concrete, dirt, oil, grease...
- Avoid rising damp.
- The surface needs to be dry.
- The temperature of the surface that needs to be restored has to be higher than the minimal temperature that's required for a good curing (see TDS of the relevant product).
- Freshly poured concrete needs to be at least 28 days old.

## SURFACE TREATMENT

### GENERAL

There are different types of preparation:

- **DRY MECHANICAL TREATMENT**
- **WET MECHANICAL TREATMENT**
- **LESS APPROPRIATE TREATMENT**

#### • **DRY MECHANICAL TREATMENT**

- Shot blasting.
- Dust free sand blasting gives the best result in case of a larger surface.
- Dust free diamond grinding is suitable for smaller surfaces, or for areas that are hard to reach.
- Milling is a good method but creates lots of dust. The use of a dust extraction device is recommended.
- The classical method of sand and/or grit blasting gives an excellent result, but isn't allowed everywhere.
- Pneumatic hammering is a good pre-treatment for smaller surfaces or local concrete repair. With this method you can easily access reinforcement steel and remove all traces of rust.

#### • **WET MECHANICAL TREATMENT**

- We recommend high-pressure washing with clean water. (P>500 bar)
- Water jetting with sand or grit can be sufficient.
- Steam cleaning up to 120 bar is only used to remove dirt.

#### • **LESS APPROPRIATE TREATMENT**

- Polishing of horizontal surfaces (for example, using Emery stones).
- Metal brush: only suitable for small repairs. The rotating brushes are not suited for larger areas because of their speed, they don't reach into the holes of the pores.
- Grinding disc.

- **THERMAL TREATMENT**
- **CHEMICAL TREATMENT**

#### • **THERMAL TREATMENT**

- This usually implies the use of flame treatment. Take into account the following remarks when using this method:
  - By heating up the air inside micro-cracks, granulates can be damaged (cracks, bursting...)
  - Contamination of the concrete surface like oil, dust, grease can catch fire.
  - It is necessary to mill the surface after using flame treatment.
- Old paint layers can be removed by using a heat gun.

#### • **CHEMICAL TREATMENT**

- We do not recommend to use this method for concrete surfaces.
- The use of alkalis and acids can cause problems due to the production of salt crystals. (expansion process)
- We only recommend the use of degreasing products, solvent or water based products to remove paint layers. These products don't cause any damage to the concrete.
- Tiles, old coatings with closed pores can be treated chemically in case other methods can't be used or applied.

### ADDITIONAL ADVICE

Every surface (concrete, asphalt, wood, stainless steel, etc.) has its specific primer. The use of a primer is very important and will determine the adhesion between the surface and the synthetic resin system. Furthermore the primer will reinforce the surface due to its impregnation properties. Cutting the surface where other flooring systems or service pipes will connect with the synthetic resin system is required. The roughness for metal surfaces has to be SA 3 and sand stainless steel. Degrease the metal surface with SOLVENT MEK right after roughening. Apply the right primer right after the vaporizing of the SOLVENT MEK, this is to prevent oxidation of the steel.