

# PU CONCRETE FLOORING SYSTEM

## SCRATCH COAT + TOPCOAT

### POWERCRETE 2045 - FLOW APPLIED PU CONCRETE FLOORING (3-6 MM)

#### APPLICATION INSTRUCTIONS

##### STEP - 1

##### FLOOR SUBSTRATE REQUIREMENTS & SURFACE PREPARATION

##### Floor Substrate Requirements

1. The concrete substrate shall be a minimum Grade M25. Substrates below M25 grade are not acceptable for the Powercrete 2045 application.
2. The substrate must not contain any water - repellent admixture. The presence of such admixtures will prevent proper adhesion & bonding of the system.
3. The surface tensile strength of the substrate, when assessed using a rebound hammer, must be above 25, or the surface tensile strength must exceed 1.5 MPa.
4. For concrete bases in contact with the ground, a damp-proof membrane must have been incorporated into the slab design prior to application.
5. The concrete substrate must be fully cured - a minimum of 28 days for new concrete - before any flooring application commences.
6. **Surface Profile:** The concrete surface must be prepared to achieve a Concrete Surface Profile (CSP) of CSP 4-5 by scarification or shot blasting, depending on the intended thickness of Powercrete 2045 to be applied.

##### Surface Preparation - New Concrete Floors

1. Remove all laitance & any surface sealer or curing membrane by mechanical means such as shot blasting or diamond grinding to expose the coarse aggregate.
2. Anchorage grooves must be cut to a minimum of twice the thickness to be laid (up to a maximum of 10mm x 10mm) at edges, day joints, upstands, drains, doorways, & at regular terminations across the floor.
3. After mechanical preparation, remove all loose debris, dust, & dirt thoroughly using vacuum equipment. Do not use compressed air alone, as it redistributes dust.
4. Acid etching is not recommended & must not be used as an alternative to mechanical surface preparation.
5. Carry out a close visual examination to verify the cleanliness & soundness of the prepared surface. Any weak or suspect areas must be repaired before proceeding.

OR

##### Surface Preparation - Old / Existing Concrete Floors

1. All laitance & surface contamination must be removed mechanically by shot blasting or diamond grinding to expose the coarse aggregate.
2. Heavy oil or grease deposits must be removed either mechanically, by steam cleaning, or by biological treatment, followed by high-pressure water blasting & the application of a penetrating primer.
3. Where oil or grease contamination has been severe or long-lasting, & the above methods are unsatisfactory, removal of the affected base is necessary before proceeding.
4. In existing buildings without a functioning damp-proof membrane, a surface-applied membrane must be considered & applied before flooring application.
5. **Hydrostatic Pressure:** Where the groundwater table is higher than the substrate & external tanking has not been applied, pressure relief must be provided (e.g., by direct drainage) before application. Hydrostatic pressure can cause adhesive failure between the flooring & substrate.
6. After all preparations, vacuum clean thoroughly & conduct a close visual inspection. Any remaining weak or suspect areas must be repaired using a suitable epoxy or cementitious repair mortar and allowed to cure completely.
7. **Surface Moisture:** The surface moisture content must be at an acceptable level before application. Do not proceed if the substrate temperature is less than 3°C above the dew point.

##### STEP - 2

##### APPLICATION CONDITIONS & ENVIRONMENTAL REQUIREMENTS

1. The ideal ambient, material, & substrate temperature range for application is 15°C to 30°C. Applications outside this range are permitted, provided the temperature is between 10°C and 34°C.
2. Do not apply if the atmospheric relative humidity is, or is anticipated to be, above 90% during the application or within the tack-free period.
3. Do not proceed if the substrate temperature is less than 3°C above the dew point at the time of application or during the tack-free period.
4. Do not apply if the ambient or substrate temperature is below 10°C, or if it is anticipated to fall below 10°C during the application or curing period.
5. **Material Temperature:** Product components should be stored in a cool area (or warm area in cold conditions) using localized forced - cooling or heating equipment as appropriate to bring the product temperature within the ideal 15 - 30°C range before mixing.
6. Ensure adequate ventilation in the application area throughout the application & curing process.
7. Protect the application area from direct sunlight, wind, rain, & other adverse weather conditions during application & curing.

##### STEP - 3

##### SCRATCH COAT - POWERCRETE 2045 (1MM THICK)

##### Mixing Procedure:

1. Powercrete 2045 is a four-component product comprising: Part A - Resin (3 Kg), Part B - Hardener (2.67 Kg), Part C - Filler (14 Kg), Part D - Pigment (0.2 Kg).
2. Use a forced-action rotary paddle mixer. Do not use a free-fall mixer.
3. Drain the liquid base (Part A) & DPI, then mix well to ensure homogeneous mixing within the container.
4. Add the liquid hardener (Part B) components to a large plastic container & mix briefly.
5. Add Part C (Filler) slowly & continue mixing for at least 1 minute until a lump-free, homogeneous mix is obtained.

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- Pot Life:** The pot life of Powercrete 2045 is 10 - 12 minutes at 27°C. Mixing & discharge must be completed swiftly within this window. Do not use material that has exceeded its pot life.

#### Application Procedure:

- Immediately discharge & spread the mixed Powercrete 2045 over the application area. Apply as a scratch coat at a nominal thickness of up to 1mm using a trowel.
- Spread evenly & uniformly across the surface, working methodically to ensure consistent coverage. Actual coverage rate depends on the concrete surface texture & porosity.
- Ensure anchorage grooves are fully wetted out with material during scratch coat application.
- De-aerate the applied coat using a spiked roller. Spike rolling must be carried out within 10 minutes of application to avoid interference with flow & surface finish.
- Do not:** Return to spike-roll older-applied areas-the product is fast - setting, & this will leave spoiling marks on the applied floor.
- Protect the applied scratch coat from damp, condensation, rain, dust, & foot traffic during the entire curing period.

#### Curing & Timing for Scratch Coat:

- Surface dry:** 60-90 minutes after application.
- Tack-free:** minimum 3 hours after application.
- Allow the scratch coat to cure for 12-48 hours at 20°C before applying the Powercrete 2045 topcoat. This window must be strictly observed.
- Critical:** If the scratch coat cures for more than 48 hours, it must be abraded thoroughly & a fresh layer applied before the topcoat is laid. Failure to do so will compromise inter coat adhesion.
- Pin-holing check:** If severe pin-holing is seen in the cured scratch coat, air may be rising from the substrate. Identify & take remedial action before applying the topcoat. Failing to do so may increase the risk of pin-holing in the surface topping.

## STEP - 4

### TOPCOAT - POWERCRETE 2045(2-5MM THICK)

#### Mixing Procedure:

- Use a forced-action rotary paddle mixer. Follow the same mixing sequence as the scratch coat: mix Part A (Resin) thoroughly, then add Part B (Hardener), & finally add Part C (Filler) slowly while continuing to mix for at least 1 minute until lump-free.
- Add Part D (Pigment) as required for the specified color & mix until a uniform color is achieved throughout.
- Pot Life:** 10-12 minutes at 27°C. Discharge & application must be completed immediately after mixing within the pot life window. Do not batch mix more material than can be applied within the pot life.

#### Application Procedure:

- Confirm the scratch coat has cured for the required 12-48 hours & has been inspected & approved before commencing topcoat application.
- Immediately discharge & spread the mixed Powercrete 2045 over the scratch coat using a notched trowel to achieve the required coverage rate & build up a minimum thickness of 2 - 5mm topcoat (total system 3 - 6mm).
- Thickness Selection:** For service temperatures of -15°C to +80°C, apply at 3mm. For service temperatures of -25°C to +90°C, apply at 6mm. Select the appropriate thickness based on the intended service conditions of the area.
- Do not:** Return to spike-roll older-applied areas - the product is fast-setting, & this will leave spoiling marks on the applied floor.
- Ensure that anchorage grooves are fully wetted out with material during topcoat application.
- Protect the installed floor from damp, condensation, rain, water, dust, & traffic for at least 4 days after topcoat application.

#### Curing & Timing for Scratch Coat:

- Surface dry:** 60-90 minutes after application.
- Tack-free:** minimum 3 hours after application.
- Hard dry:** minimum 24 hours after application.
- Light foot traffic:** may be permitted after approximately 12 hours at 30°C.
- Full mechanical & chemical cure:** 6 days. The floor must not be subjected to chemical exposure or heavy mechanical load until full cure is achieved.
- Do not use polythene sheeting to cover the floor during curing, as it can cause surface discoloration & adhesion issues.

#### IMPORTANT NOTES:

- Powercrete 2045 must be installed by specialist applicators who must follow the procedures outlined in Synthetic Resin Floorings & the Powercrete 2045 Method Statement - PU Cementitious Flooring.
- For applications in areas intended for hot or cold conditions, Hindcon Chemicals Limited must be consulted before proceeding.
- Powercrete 2045 is not color-fast & may yellow over time. The rate of change depends on UV light and heat levels. For UV-exposed outdoor areas, consult Hindcon for appropriate UV-resistant topcoat options.
- Slip resistance can reduce over time due to poor maintenance, general wear, or surface contaminants. Regular cleaning & good housekeeping practices must be observed.
- Wear suitable protective clothing, gloves, eye protection, & appropriate respiratory protective equipment during handling & application.
- Color variation may occur between batches due to the batch manufacturing process. Ensure sufficient material from the same batch is available for the entire application area.

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#### APPLICATION TIMING SUMMARY

| Stage              | Surface Dry | Tack Free | Hard Dry / Next Coat | Full Cure |
|--------------------|-------------|-----------|----------------------|-----------|
| Scratch Coat (1mm) | 60-90 min   | ≥ 3 hrs   | 12-48 hrs@ 20°C      | -         |
| Topcoat (2-5mm)    | 60-90 min   | ≥ 3 hrs   | ≥ 24 hrs             | 6 Days    |
| Light Traffic      | -           | -         | 12 hrs after topcoat | -         |
| Full Traffic       | -           | -         | 24 hrs after topcoat | -         |
| Full Chemical Cure | -           | -         | -                    | 6 Days    |

#### MATERIAL COVERAGE SUMMARY

| Product / Layer                 | Pack Size      | DFT / Thickness       | Coverage              |
|---------------------------------|----------------|-----------------------|-----------------------|
| Powercrete 2045 - Scratch Coat  | Pre-packed Kit | 1.0 mm (Scratch Coat) | ~2 Kg / Sq. Mtr       |
| Powercrete 2045 - Topcoat @ 2mm | Pre-packed Kit | 2.0 mm (Topcoat)      | ~4 Kg / Sq. Mtr       |
| Powercrete 2045 - Topcoat @ 3mm | Pre-packed Kit | 3.0 mm (Topcoat)      | ~6 Kg / Sq. Mtr       |
| Powercrete 2045 - Topcoat @ 4mm | Pre-packed Kit | 4.0 mm (Topcoat)      | ~8 Kg / Sq. Mtr       |
| Powercrete 2045 - Topcoat @ 5mm | Pre-packed Kit | 5.0 mm (Topcoat)      | ~10 Kg / Sq. Mtr      |
| Powercrete 2045 - 19.67 Kg      | 19.67 Kg Pack  | 1.0 mm                | ~9.835 Sq. Mtr / Pack |

#### IMPORTANT NOTE – SCRATCH COAT / PUTTY COAT:

The application of Epoxy & PU flooring & coatings is highly sensitive to surface conditions. Depending on the substrate porosity, texture, & site conditions, a Scratch Coat/Putty Coat may be necessary over the primer or underlayment surface before applying the final top coat.

A Scratch Coat / Putty Coat is a thin additional layer of the topcoat material, applied to seal any residual surface irregularities, micro-pores, or voids. This step ensures a superior, uniform finish on the final coat by significantly reducing the risk of pinholes, surface defects, & uneven appearance in the cured system.

The necessity of a Scratch Coat / Putty Coat is to be assessed by the applicator based on the actual site surface conditions prior to application of the final topcoat.

STRENGTH UPON STRENGTH