

The performance and finish achieved by SÜdanit 280 Alpha Hemihydrate Floor Screed is dependent on the conditions in which it is installed and for a period thereafter. It is essential the following site conditions are provided:

**During screed pour and 24 hours thereafter:**

- The entire area where the screed is to be installed must be frost-free and not subject to temperatures of less than 5°C or higher than 30°C.
- The surface of the screed must be protected from severe draughts and direct sunlight.
- The temperature of the area where screed is placed should not fall below 5°C.

**During the drying out period (after 24 hours):**

- Avoid water ingress to completed screeds and arrange to dry out accidental ingress as soon as possible. The screed may suffer a minor loss of strength if it becomes wet, however this strength will generally be regained when it dries out.
- Open windows on all sides of the building in order to achieve good cross-ventilation and air changes thus accelerating the drying out process.
- A typical 40mm thick screed can be expected to dry to 0.5% moisture content in 40 days under ideal conditions. However, this can be greatly affected by actual conditions.

Unlike cement based screed, Calcium Sulphate Screed can be forced dried, by commissioning the underfloor heating system (if applicable) or by utilising a dehumidifier.

**Commissioning Underfloor Heating:**

- 48 hours after installation of the SÜdanit 280 Screed, the commissioning process starts with a water temperature (UFH manifold) of 25°C, which is maintained for three days. The water temperature is then raised to the maximum value (max. 55°C) and kept at this level for at least 4 days.
- Allow for plenty of ventilation by opening windows on each side of the building. Please note: it is essential that the building receives sufficient air changes in order to achieve low air humidity (< 65% RH).
- Continue with above procedures until a moisture content of 0.5% (for tiling/vinyl) or 1% (carpet) is achieved. Please refer to moisture testing section for further details.

**Utilising a dehumidifier:**

- 48 hours after the installation of SÜdanit 280 Screed, introduce heat and utilise a dehumidifier with correct capacity for the m<sup>3</sup> area of the building. Use several dehumidifiers if required.
- Keep windows and doors closed to allow the dehumidifier to work efficiently.
- Continue with above procedure until a moisture content of 0.5% (tiling/vinyl) or 1% (carpet) is achieved. Please refer to moisture testing section for further details.

The CM tester works according to the carbide method, using the destruction of calcium carbide in water. During this reaction acetylene gas is formed which causes an increase in pressure in the vessel. From the measured pressure and the test portion of the material to be tested, the water content of the sample is read from a table or directly from the manometer.

- A representative sample should be taken from the dry SÜdanit 280 Screed floor.
- This should cover the whole thickness of the floor material. For parquet, the sample is taken from the lower to middle area of the screed.
- Before filling the vessel, the material must be crushed and slightly milled. The larger pieces of mineral aggregates should be removed. By shaking the vessel well with inclusion of steel balls, the desired final crushing will be achieved. Use 100g of crushed screed (depending on type of CM tester).
- With Calcium Sulphate based Screeds, after 10 minutes, there may be a further increase of pressure. Disregard this, as it indicates chemically bound water.

The requirements are for a maximum of 1% water by weight for moisture permeable floorings (e.g. carpets) and 0.5% water by weight for impermeable floorings (e.g. vinyl, ceramic and stone). An electronic CM device is helpful to locate the highest moisture content location of the floor. The reading can then be confirmed by testing to the carbide method.

The British Standard for testing a base to receive a resilient floor covering is to use a hair hygrometer to the method defined in BS8203: 2001. This provides a non destructive test method and will give results for Relative Humidity near to 75% (which is the usual required limit for floor finishes). Above this level of moisture, the hair hygrometer may not always provide a meaningful reading. For correct results, the BS8023 method must be strictly adhered to, including the use of a correctly sized and insulated box sealed to the floor, a sufficiently long test for equilibrium to be reached and the use (where appropriate) of an impervious sheet around the instrument.

If a cement based adhesive or smoothing compound is required, the surface of the screed must be sealed first using an appropriate acrylic or epoxy based primer/sealer as directed. A minimum of 2 no. coats is usually essential. Please refer to the tiling paragraph for further information.

In general, surface applied DPM systems do not stop the passage of moisture, they actually allow the passage of moisture from the screed to the floor finishes, but at a greatly reduced and controlled rate. It will always be best practice and economical to dry the screed rather than use a surface DPM. However, because of time constraints or site conditions, Sūdānit Calcium Sulphate Screeds can be covered with a Surface DPM, providing certain criteria are met.

Care must be taken regarding the amount of moisture trapped in the screed, as this will have an effect on the strength gain. Applying a moisture suppressing Surface DPM will effectively cap the strength of the screed, thus it should not be applied until the screed has gained sufficient strength in order to install floor finishes.

Without forced drying methods of the screed (as earlier), the screed should be at least 4 weeks cured before applying a Surface DPM. Moisture content must be < 1.5% CM or 87% RH, tested as described earlier.

When forced dried using underfloor heating, observe recommendations. When the maximum temperature value has reached (max. 55°C), it should be held at this level for at least 24 hours, before allowed to cool to normal room temperature. Any possible laitance or contamination should be removed using grinding or sanding techniques.

Moisture content must be < 1.5% CM or 87% RH, tested as described earlier. We recommend the use of Merlin Barrier Coat as DPM. Merlin Barrier Coat has a successful track record using their Surface DPM on Calcium Sulphate Screeds for decades. Please use Merlin Barrier Coat as directed by the manufacturer. Merlin Barrier Coat is available in 5kg units from Smet Building Products Ltd.

It is imperative the correct tile adhesive is used when installing large format floor tiles. The type and size of the tile or stone used determines the type of adhesive required. Floor Screeds in bathrooms and wet rooms must always be tanked, prior to installing tiles (see page 5 & 6 for guidance).

We recommend the following High Crystalline Water Binding adhesives in combination with an Acrylic Primer for successful and trouble free installation of large format (> 0.2 m<sup>2</sup>) tiles (System I). When using standard rapid set floor tile adhesives we recommend the use of an epoxy primer as directed (System II). For natural stone, terracotta, glass, resin- and cement-bonded tiles always consult SMET for additional technical advice.

#### Floor tiling to BS 5385-3 Ceramic Tiles

When floor screed is dry and moisture content is confirmed by conducting a moisture test. As Sūdānit 280 screed has no surface laitance, sanding is not required. However ensure the floor screed is clean, free of dust, grease, paint or any other impurities that may prevent adhesion.

1. Prime the floor screed using Sopro GD 749 Acrylic Primer as directed, ensure the screed is fully sealed by proper film formation.
2. Use Sopro VarioFlex® HF 420 or Sopro Varioflex® Silver 419 Tile Adhesive. Always use the butter and float method - ensuring 100% adhesive coverage of your large format tile by applying a contact layer of adhesive on the back of the tile, followed by placement of the tile into a prepared combed adhesive bed using a 10mm serrated trowel.  
**Note:** Movement joints in the screed, should always be followed through with a movement joint in the tiles. A proprietary movement joint, or soft (silicone) joint should be used.
3. Use Sopro DF 10 Designer Grout for tile 1-10mm joints to ensure brilliantly coloured joints with a lasting appeal. Should your tiling contractor require any technical advice, please contact SMET.

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**2** Use Sopro VarioFlex® HF 420 or Sopro VarioFlex® Silver 419 Tile Adhesive.

Always use the butter and float method - ensuring 100% adhesive coverage of your large format tile by applying a contact layer of adhesive on the back of the tile.

**3** Follow by placement of the tile into a prepared combed adhesive bed using a 10mm serated trowel.

**4** Use Sopro DF 10 Designer Grout for tile 1-10mm joints to ensure brilliantly coloured joints with a lasting appeal.



#### SUBSTRATE

Dry and clean Calcium Sulphate Floor Screed



#### SUBSTRATE PREPARATION

Sopro GD 749 primer



#### BONDING LAYER AND COMBED BED

Sopro VarioFlex® HF 420



or Sopro VarioFlex® Silver 419



#### GROUTING

Sopro DF 10® or Sopro Brilliant®



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**1** Prime the floor screed using Sopro SG 602 Resin Primer Sealer as directed, ensuring the screed is fully sealed by proper film formation.

**2** Use Sopro FF 450 Standard Set or Sopro FF 451 Rapid Set Tile Adhesive.

Always use the butter and float method - ensuring 100% adhesive coverage of your large format tile by applying a contact layer of adhesive on the back of the tile.

**3** Follow by placement of the tile into a prepared combed adhesive bed using a 10mm serated trowel.

**4** Use Sopro DF 10 Designer Grout for tile 1-10mm joints to ensure brilliantly coloured joints with a lasting appeal.



#### SUBSTRATE

Dry and clean Calcium Sulphate Floor Screed



#### SUBSTRATE PREPARATION

Sopro SG 602 Primer Sealer



#### BONDING LAYER AND COMBED BED

Sopro FF 450 Adhesive



or Sopro FF 451 Adhesive



#### GROUTING

Sopro DF 10® or Sopro Brilliant®



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### SYSTEM COMPOSITION



### PRODUCT RECOMMENDATION



Sopro GD 749



Sopro SG 602 Primer Sealer



Sopro FDF (W0-I and W-I only)



Sopro DSF 523 (W0-I to W2-I only)



Sopro FF 450



Sopro DF 10



Sopro FL plus



Sopro Sanitary Silicone



Sopro DMW 090 and Sopro DMB 091



Sopro DB 438



Sopro DE 014/015

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Application of Sopro FDF flexible tanking compound (polymer dispersion)



**1** First seal corners using preformed Sopro DE 014/015 sealing tape units, angles and wall/floor joints using Sopro DB 438 sealing tape. To do this, first apply Sopro FDF to primed substrate, place and embed sealing tape, and thickly overcoat nonwoven edge with Sopro FDF using brush or spatula.



**2** Push Sopro DMW 090 sealing collar for walls over pipe end.

**3** Then embed Sopro sealing collars in sealing compound.



**4** To waterproof surfaces, apply Sopro FDF thickly to substrate using lambswool roller or finishing trowel, taking care to avoid pore formation. Apply second coat in a different colour when first coat has achieved adequate strength. Tile covering may be applied using flexible thin-bed adhesive (e.g. Sopro FF 450) when second coat has set.



STANDARD COLOUR



GREY - FDF 525



CONTRAST COLOUR



LIGHT GREY - FDF 527

Highly elastic, crack-bridging, solvent-free, one-component liquid polymer waterproof coating. Applied to walls and floors as membrane in composite waterproofing systems with tile finish. Used in damp and wet spaces not subject to hydrostatic pressure, e.g. bathrooms, showers, washrooms and sanitary facilities. Suitable for water action classes W0-I/W1-I.



CONTRAST COLOUR IN SYRINGE

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