

## AFTERCARE - CASEA Sūdānit Calcium Sulphate Screeds

### Site Conditions

The performance and finish achieved by CASEA Sūdānit Calcium Sulphate 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. This can be greatly affected by actual conditions however.

### Forced Drying

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:**

- 7 days after installation of the Sūdānit Calcium Sulphate 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:**

- 7 days after the installation of Sūdānit Calcium Sulphate 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.

### Moisture Testing by CM Tester (CM)

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 Sūdānit Calcium Sulphate 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.

## Moisture Testing by Hair Hygrometer (RH)

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.

## Priming

If a cement based adhesive or smoothing compound is required, the surface of the screed must be sealed first using an appropriate acrylic primer/sealer as directed. A minimum of 2 no. coats is essential.

## Surface DPM (Moisture Suppressing Membrane)

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, Sūdanit 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.

Obviously we cannot guarantee the performance of another manufacturer's DPM. Suitability should be sought from the DPM manufacturer that the product is suitable for calcium sulphate based screed, with regards to overall performance and vapour transmission rates.

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 over 10 years. Please use Merlin Barrier Coat as directed by the manufacturer. Merlin Barrier Coat is available in 5kg and 25kg units from Smet Building Products Ltd.

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