PREPARE YOUR FLOOR FOR LIQUID SCREED (ANHYDRITE)

- The building should be weather tight prior to the pour. The roof should be covered and all external doors and windows in place. Alternatively, all openings are to be made weatherproof with clear polythene. Remove all dust and debris from the floor surface and leave free from contamination. Remove any debris or mortar splashes from the sub floor.

- Place insulation in 1 layer. This is often Celotex, Kingspan or expanded polystyrene. Using dried sand to fill the void around pipes and ensure that this is level. Boards must sit evenly, ensuring that all high/low points are removed from the sub-base and that the installation boards are laid flat, without rocking and be tightly packed, so they are stable when walked on and staggered and tightly joined. Insulation boards are often slightly curved. If this is the case, lay the boards so they are curved downwards (higher in the middle) to minimise rocking. important to note; Where there are service pipes running across the floor, such as gas pipes, the insulation should be grooved on the underside to allow the pipes to sit within the insulation, rather than leaving the boards resting on top of the pipes.

- A membrane of 1000 gauge or thicker should be laid over the entire floor, covering the insulation boards. Ensuring it is pulled tight with no air pockets or creases and free of any punctures. Overlap joints at a minimum of 100mm and seal with non-metallic tape such as gaffer tape to avoid any leakages. Allow the membrane to run up the walls to above the full depth of the screed (150mm would be more than enough), to create a bath. Make sure that the polythene fits tightly into the corners, securing with additional edging tape. To create a bath like effect, which is watertight to stop any liquid screed escaping and getting underneath the insulation, if the screed gets under the insulation, then it will all start to float and will be a disaster!

- Once the insulation is installed, any vertical surface coming into contact with the screed, such as walls, stairs or pipes, should have a foam insulation edge strip stuck to it securely. This is to allow for any minor expansion once the screed is dry. There are various types of strips, but they are typically 8mm-10mm thick and come in rolls. Please take care to ensure it is neatly placed into the corners at 90 degrees to avoid air pockets. Tack the edging strip to the walls using a staple gun as required to hold it in position. If there is a plastic skirt attached to the perimeter strip, use gaffer tape (non-metallic tape) or adhesive spray to stick it to the membrane – this stops the screed from getting behind the perimeter strip and pulling it away from the wall. Again, avoid creating air pockets between the screed and the insulation/wall.

- Where door openings or level changes are found, these should be provided with a temporary framework. So, the perimeter edging strip can be laid on top.

- Any shuttering across doorways or steps should be fully sealed with expanding foam or mastic to prevent leakage after laying but before setting. Pipe ducts or holes through walls also need to be sealed before placement of the liquid screed.

- Important to note: the membrane is not there to act as a damp proof membrane but to stop the screed from escaping when poured.

The floor is now ready for the screed to be laid. It is imperative that this preparation is carried out to the highest standards. The neater the prep, the neater our screed results are!

WHEN WE ARRIVE TO INSTALL

- Setting The Levels - We will work from a place called a datum point. Typically, this will be from the stairs, but can also be from other areas such as a doorway or threshold. We will then set out levelling gauges called 'tripods' and, using a laser, will set them to the correct depth to make sure that the finished screed surface is level throughout the building.
- Installing Screed - The screed will then be pumped in and poured to the depths set by the tripods. Once this is done, the tripods are removed. To make sure that it is smooth, without any tide marks or air bubbles, we will then agitate the screed using a dappling bar. The installation is then complete.
- Requirements – We will require an outside tap and a washout bay/skip, away from the area of screed. As detailed in the section General.

COMMON MISTAKES TO AVOID WHEN PREPARING FOR YOUR LIQUID SCREED

Measuring the space incorrectly

Often sub-floor slope or unevenness may cause unexpected differences in the overall floor level and in the quantity of screed required. It is the customer's responsibility to measure each room/area appropriately.

You will need to consider critical features such as door openings, minimum thicknesses/cover and required differentials in floor height between rooms. It is very important that you must ensure your sub-base is adequate to take the additional weight of the screed, as this is not our responsibility.

Prior to installation, the required depth must be marked on the wall above the level of the finished screed, so that they are present for comparison should a disagreement be raised about finished floor levels.

Any such disagreement must be brought to our attention within 48 hours of the screed being laid. Should these marks be removed or altered prior to any investigations then we will not be held accountable for any level issues.

Ordering less screed than required

Should extra liquid screed be required over that originally ordered and a separate delivery needed, the client will be charged extra costs, so it is essential that your measurements are accurate to avoid this.

INSTALLING LIQUID SCREED WITH UNDERFLOOR HEATING

- All pipes and cables for under floor heating should always be installed to the manufacturer's guidelines and spacings.
- Install on top of the tanking membrane, not beneath it.
- All heating pipes are to be firmly fixed to the insulation using supplied clips/staples, piercing the insulation. The clips are self-sealing so will not leak when liquid screed is poured.
- Install underfloor heating pipes and ensure they are appropriately fixed at every 400mm along the length of the pipes more frequently on bends. It is important to note; that there should be no unfixed lengths of pipe or cable greater than 400mm long, as if they are left unfixed, all under floor heating elements will float to the surface of the screed. Flo Pro Southern is not liable for the securing of the pipes.
- Pressurising the system should take place prior to the installation of the screed. This allows any issues/sign of leaks to be addressed by your fitters ahead of our installation.

- Make sure that the system is full of water prior to the liquid screed being laid. This avoids the pipework floating to the surface of the screed. It also means that your pipes are expanded in preparation of the screed and therefore avoids any expansion issues from the heat once the screed cures.
- If you are using an 'eggbox' type pipe system, the membrane should be laid under the eggbox, and you should avoid using small off-cuts of eggbox to avoid any possibility of floating.
- The minimum cover above underfloor heating pipes is 30mm therefore minimum screed thickness is normally 50mm when using.
- After you have read through this guide, if you have any other questions about your preparation, please don't hesitate to contact us, as we will be glad to answer your questions 0118 229 3366

Bay Sizes and Joint Requirements

Heated

Maximum Length	20m
Maximum Aspect Ratio	6:1
Maximum Bay Size	300m²

- Movement joints should be placed at Door Thresholds, between independently controlled heating zones and where heated and unheated screeds meet.

Unheated

Maximum Length	40m
Maximum Aspect Ratio	8:1
Maximum Bay Size	1000m²

GENERAL

- The customer shall protect any thresholds or edges the pump pipes may be laid over getting the pipeline to the job.
- The customer shall also protect any surfaces they do not want to be compromised by splashing as this may occur during laying. This is especially important for finished surfaces (walls, windows and staircases etc).
- Expansion joints shall be placed in positions specified by your floor design engineer. It is important for foam perimeter expansion strips at all intrusive corners such as doorways and other features such as fireplace hearths, staircases will help to reduce the potential for cracks to develop at these points.
- Please note that we will need to wash our pump out (which contains the remaining product) on site before leaving. It is the customers responsibility to provide a suitable area or washout receptacle and for the final disposal of this waste.

AFTER YOUR LIQUID SCREED IS POURED

- It is essential that the screed is closed to any foot traffic for the first 24-48 hours, to enable it to cure undisturbed.
- Adequate protection must be provided from rapid drying or draughts for the same first period of 24-48 hours.
- Cure & Drying times will vary dependent on the liquid screed material used and the thickness of the screed. Also, the atmosphere conditions of the room/area is very important and the suitability of the building enclosure. It is typically 1mm per day up to 50mm. See below for more information.
- Usually, we recommend between 24-48 hours before you can walk on the screed. We can give you a clearer answer once we know the details of your project, so please contact us to discuss the details of your screed requirements.

4 Factors should be considered when drying your screed:

- **Room temperature** - Should be kept warm (not hot), with windows and doors sealed for the first 24-48 hours. This will assist the screed to dry through improved evaporation. **Remember no draughts!
  Direct sunlight must be avoided during the first 24–48 hour curing period. Windows and glass doors with a southern aspect should be covered temporarily for this period. After the first 24-48 hours of curing doors and windows may be opened to provide ventilation.

- **Humidity** - It is important to provide good ventilation to ensure low humidity is achieved as high humidity will slow the drying process.

- **Screed Temperature -** Underfloor heating can be commissioned at 7 days. Commissioning the screed raises the vapour pressure, greatly improving the drying rate of the screed. This should be combined with good ventilation.

- **Moisture -** The floor should be protected from moisture ingress to prevent rehydration which will delay the drying process dramatically. Where windows and/or doors are not installed, a temporary provision must be made using appropriate materials to ensure the room is weather tight.

DRYING TIME

It is important to note that drying times relate to ambient humidity, temperature, and number of air changes. In general, liquid screed installed as an un-bonded system dries at a rate of 1mm per day for the first 50mm of depth and 0.5mm per day for any depth over and above this. This is provided a temperature of 20 degrees Celsius is maintained and 65% relative humidity. Where drying temperatures are high, and humidity is low, drying time will be less.

Unlike conventional cement / sand screeds, dehumidifiers may be used to accelerate drying. These should only be used 7 days after placing screed.

Where under floor heating is installed, this can be used to decrease drying times but should only be used after the first 7 days. The heating system temperature should be built up gradually at a rate of 5 degrees Celsius per day. Prior to the installation of a floor covering, liquid screed must have dried to an approved level.

For moisture sensitive coverings the code of practice value is stated as 75% relative humidity, which equates to 0.5% moisture content by mass. Below this value impermeable floor finishes may be applied.

During the Drying Out Period (after 24 –48 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 be regained when it dries out. Open windows on all sides of the building to achieve good cross ventilation and air changes thus accelerating the drying out process. A typical 50mm thick screed can be expected to dry to 0.5% moisture content in 40 days under ideal conditions. This can however be affected by actual conditions.

FORCED DRYING

Unlike cement-based screeds, calcium sulphate screeds can be forced dried, by commissioning the underfloor heating system (if applicable) or by utilising a dehumidifier. Commissioning Underfloor Heating: After 7 days of installation of the liquid 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 to achieve low air humidity (65% RH). Continue with above procedures for approximately 4 weeks or until a moisture content of 0.5% (tiling/vinyl) or 1% (carpet) is achieved. Please refer to a moisture testing expert or flooring installation company for further details.

USING A DEHUMIDIFER

After 7 days of the installation of the liquid screeds, introduce heat and utilise a dehumidifier with enough capacity for the m3 area of the building. Use several dehumidifiers if required. Keep windows and doors closed for the dehumidifier to work efficiently. Continue with above procedures until a moisture content of 0.5% (tiling/vinyl) or 1% (carpet) is achieved. Moisture testing is recommended.

FLOOR COVERING PREPARATION

Liquid screeds – just like all other screeded surfaces – need to undergo appropriate preparation and finishing before the subsequent bonded floor coverings are applied. This is to ensure the best possible adhesion and a flawless finish; laitance removal is performed prior to application of the floor covering. In the absence of laitance removals, the risk of de-lamination of the new floor covering is significantly higher.

The preparation of all liquid screeds ready for floor coverings can vary depending on 4 areas:

- Laitance / Sanding
- Drying and moisture testing
- Underfloor Heating Commissioning
- Priming

WHAT IS LAITANCE?

Laitance is the crumbly coating of fine particles which forms on the surface of a screed floor during the curing period. Its presence indicates that excess moisture is finding its way to the surface, which could inhibit the rapid drying times normally associated with liquid screed. Due to the properties of the laitance, it has the potential to cause serious problems when flooring is laid directly on top, without first removing this residual layer, as the layer is too weak to hold the finish.

REMOVING LAITANCE FROM SCREED

The appropriate treatment for laitance removal / floor sanding should be carried out 7-14 days after the application of screed. The use of a sanding machine is also known as 'abrading'. This means that the surface is scoured to ensure the removal of all dust and fine particles clinging to the screed finish.

Due to the potential dangers associated with silica inhalation, it is strongly advised that laitance removal is carried out by trained professionals with the appropriate machinery and safety gear.
In addition, attempting to remove laitance without sufficient experience and expertise can cause severe damage to the surface of the screed.

Once the sanding is complete, all excess dust is removed using an industrial vacuum cleaner. The resulting surface is now durable, and stable enough for the installation of the flooring finish. We would always recommend to clients that a primer is applied to the screed surface before tile adhesive is applied.

We offer efficient, cost-effective approach to screed sanding and laitance removal surfaces to all our clients, please contact us to arrange.

WHY REMOVE LAITANCE?

Failure to remove laitance represents one of the most common causes of flooring installation failures. When laitance appears following the anhydrite or cement screed curing process, the resulting crust is unsuitable for safe and reliable adhesion to the final floor covering.
Depending on the material used, laitance varies significantly in thickness, ranging from a thin coat of dust to several millimetres or more. The thicker the laitance, the more important it is to ensure it is comprehensively and professionally removed.

MOISTURE TESTING

As with all screeds, in good conditions anhydrite has a natural drying time of 1mm per day up to 50mm and 0.5mm after that, drying times can be greatly affected by site conditions, so it is advised that the atmosphere is kept as warm and dry as possible. Commissioning the UFH and/or using dehumidifiers can greatly improve the figures above, prior to coverings the screed moisture must be tested and be below 75% RH (0.5% Moisture).

UNDEROOR HEATING COMMISSIONING

Where under floor heating is used it must be commissioned and run prior to floor coverings regardless of how dry the screed maybe, this is in line with CFA, TTA, Vinyl/Tile Manufacturers and UHMA guidelines.

This process forces additional moisture from the screed and conditions it to thermal movement prior to coverings, typically the commissioning cycle is 21 days and can be started as early as 7 days with anhydrite screeds.

The guidelines state that the underfloor heating should be: -

- Commissioned at ambient floor temperatures, approx. 20 degrees (or lowest manifold temperature).
- This temperature should be maintained for 24 hours, then raised by up to 5 degrees per 24 hours thereafter until the optimum running temperature is reached (Maximum 55 degrees).
- This should then be maintained for 7 days prior to the temperature being reduced by 5 degrees per day back to the starting point.
- The system can be turned off and allowed to cool for 48 hours prior to moisture testing by digital hygrometer.