

Data Sheets

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Why Gyvlon?

	GYVLON SCREED	Sand Cement SCREED
Productivity	Up to 1500 m ² per day	Up to 150 m ² per day
How quickly can you walk on the floor?	Within 1 to 2 days Self curing	7 days Requires covering to cure
Joints	Maximum 1000m ² bay size* Maximum 40m bay length* Maximum 8-1 aspect ratio*	Maximum 36m ² bay size Maximum 6m bay length Maximum 2-1 aspect ratio
Performance	Greater compressive strength Greater flexural strength Nominal shrinkage Will not curl	Compressive and flexural strength Dependent on compaction Shrinks Curls
Surface Finish	Achieves SR2 under BS 8204	Dependant on contractor
Floating Construction	No reinforcement required 40mm minimum - Commercial applications. 35mm minimum - Domestic applications.	D49 or fibre reinforcement required 75mm minimum – Commercial applications 65mm minimum – Residential applications
Typical Drying Times	40 days at 40mm Can be force dried after 7 days	65 days at 65mm Cannot be force dried Should be cured for one week
Unbonded Floor Construction	1200 gauge polythene laid directly to substrate No reinforcement 30mm minimum thickness	1200 gauge polythene laid directly to substrate D49 or fibre reinforcement required 50mm minimum thickness
Installation	Produced to BS EN 13454 Designed to BS8204:7 Self compacting	Often mixed on site by hand Inconsistent quality Requires extensive compaction
Environmental Credentials	1 tonne of binder = 980kg Recycled material Screed average 36% recycled	1 tonne of cement = 1500kg Raw material Screed average 0% recycled
Health & Safety	Ergonomically friendly No cement burns	Very labour intensive High cement contents
Underfloor Heating	2.2W/mK** thermal conductivity Reduced cover to heating pipes	1.1W/mK** thermal conductivity
Savings	Gyvlon offers Environmental, Time and Cost Benefits	

* Bay sizes stated are for non-heated screeds, please refer to 'Bay size/Joints Document'

** W/mK Quantity of heat transferred through a set thickness over a set period of time



Gyvlon Benefits

Gyvlon's range of screeds are manufactured from our recycled calcium sulphate binder (a by-product of the production of Hydrofluoric acid), selected aggregates and additives to produce a free flowing self compacting screed manufactured to BSEN 13813:2002.

Gyvlon screeds are designed to provide a level surface in both commercial and domestic buildings prior to the application of floor finishes. It can be used as a bonded, unbonded or floating construction, it is particularly suited to use with underfloor heating.

Gyvlon is available in various mix designs and used as part of many building systems to offer specific solutions, for further advice on our screeds and building systems please speak to the Specification Team.

Liquid Screed

Gyvlon, due to its fluid nature is up to ten times quicker to install than sand cement screeds. Gyvlon greatly reduces the amount of manual labour required allowing up to 1500m² to be installed in one day.

Following installation, Gyvlon cures quickly giving sufficient strength to allow foot traffic after 24-48 hours, the floor can then be loaded after 7 days. Gyvlon forms a self curing membrane removing the need for polythene sheeting, eliminating curling and reducing shrinkage.

Gyvlon is liquid in application and self compacting this results in a SR2 surface finish (BS8204) which can greatly eliminate the need for smoothing compounds prior to the application of some floor finishes.

The self compacting nature coupled with the gypsum crystallisation process provides excellent compressive and flexural strength even at reduced screed thickness.

Thickness (Minimum)

Bonded	–	25mm
Unbonded	–	30mm
Floating Residential	–	35mm
Floating Commercial	–	40mm
Underfloor heating	–	Minimum 25mm Nominal 30mm Cover to pipe work

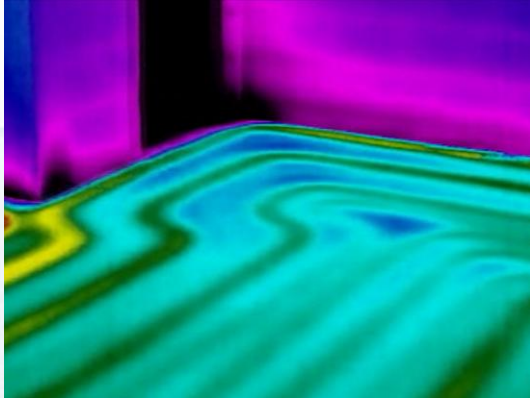
NB. Where floor zones are in excess of these thicknesses, we recommend additional insulation is used and the screed reduced to the depths above



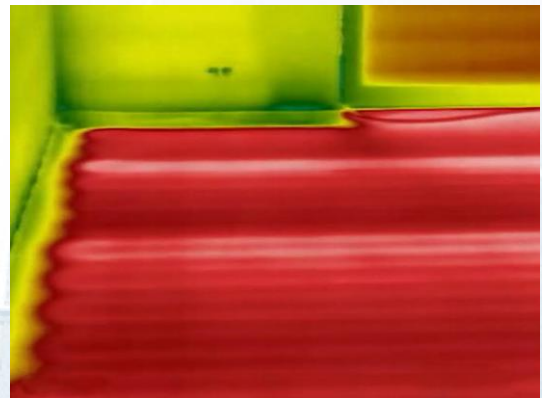
Gyvlon Benefits

Underfloor Heating

Gyvlon is ideally suited to underfloor heating as it achieves full encapsulation of the heating conduit eliminating entrapped air and honeycombing, this provides a superior heat transfer between pipe and screed. This combined with Gyvlon's higher thermal conductivity (2.2W/mk) and minimal pipe covering results in a greatly improved reaction time and reduced flow temperatures.



75mm Sand Cement



50mm Gyvlon Screed

Drying Times / Force Drying

Following installation, Gyvlon dries at a rate of 1mm per day up to 40mm and 0.5mm per day thereafter, as Gyvlon can be installed thinner than sand cement this can allow for reduced drying times.

The drying rate per day can be increased by good site management and use of force drying, refer to 'Floor covering preparation and Drying'

Joints and Bay Sizes

Gyvlon has a smaller shrinkage profile than is associated with sand cement screeds, allowing for a reduction in expansion joints, this creates fewer weak points in the screed finish. Reducing the number of expansion joints having to be reflected in the floor finish will provide a more aesthetically pleasing appearance. Refer to 'Joints and Bay sizes' for more information.

Protein Free

Unlike sand cement screeds Gyvlon is 100% protein free, making it ideal for application in medical or other areas of hygienic importance as it cannot harbour bacteria.

Availability and Delivery

Gyvlon screeds are produced and manufactured to BSEN13813:2002 at readymix plants and delivered in truck mixers or by Transmix/Brematt mobile mixing vehicle.

Gyvlon is also available for smaller areas as a pre-blended bagged material.



Gyvlon Screed Range

GYVLONEco

The most common Gyvlon screed in the range, **Gyvlon Eco** has been used successfully for years in many applications where the common theme is foot traffic. A general purpose screed for use in most applications.

GYVLON SoundBar®

This mix is specifically designed for use in the SoundBar timber floor system. SoundBar is exclusive to Metsa wood (formally Finnforest) engineered wood building systems. This system gives a concrete "feel" to a timber deck floor and exceeds all the requirements of the building regulations.

GYVLONXTR

Having higher strength than Classic Gyvlon screed, **XTR** has been formulated for use where higher than normal loads are expected. Attention should be paid to the type of insulation being used in these applications

GYVLONSky

Gyvlon Sky has been specially designed for use in high rise situations. It can be pumped into multi story buildings from ground level with ease. For use in applications over 12 floors.

GYVLONThermoplane

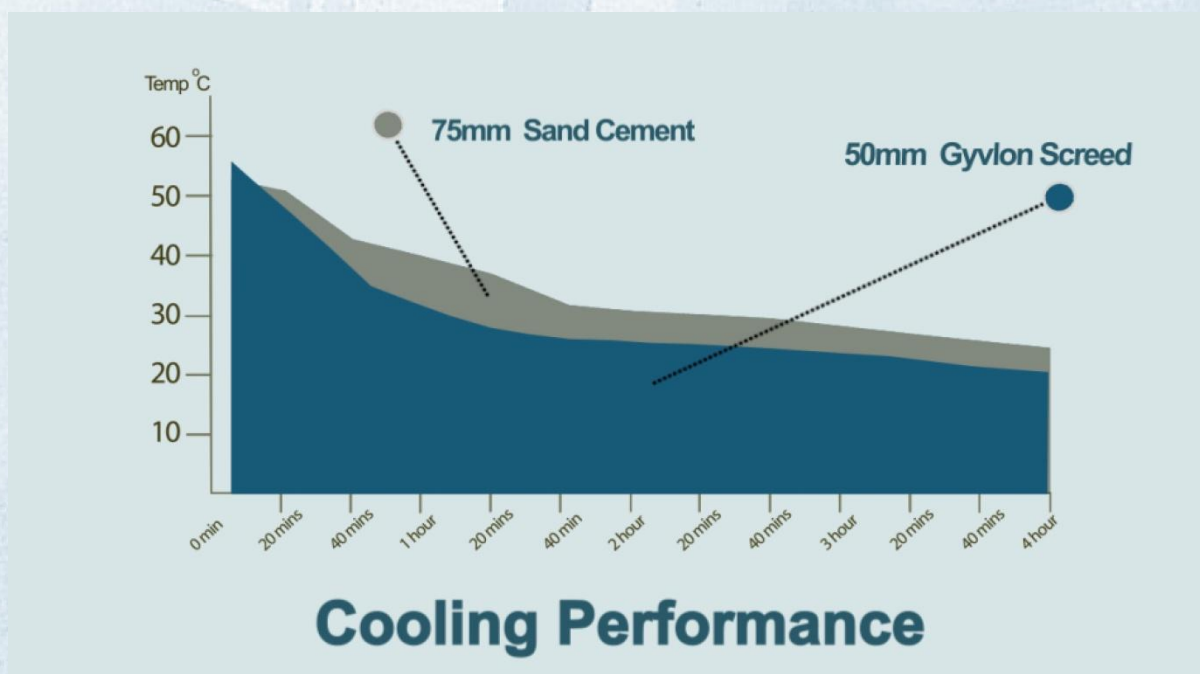
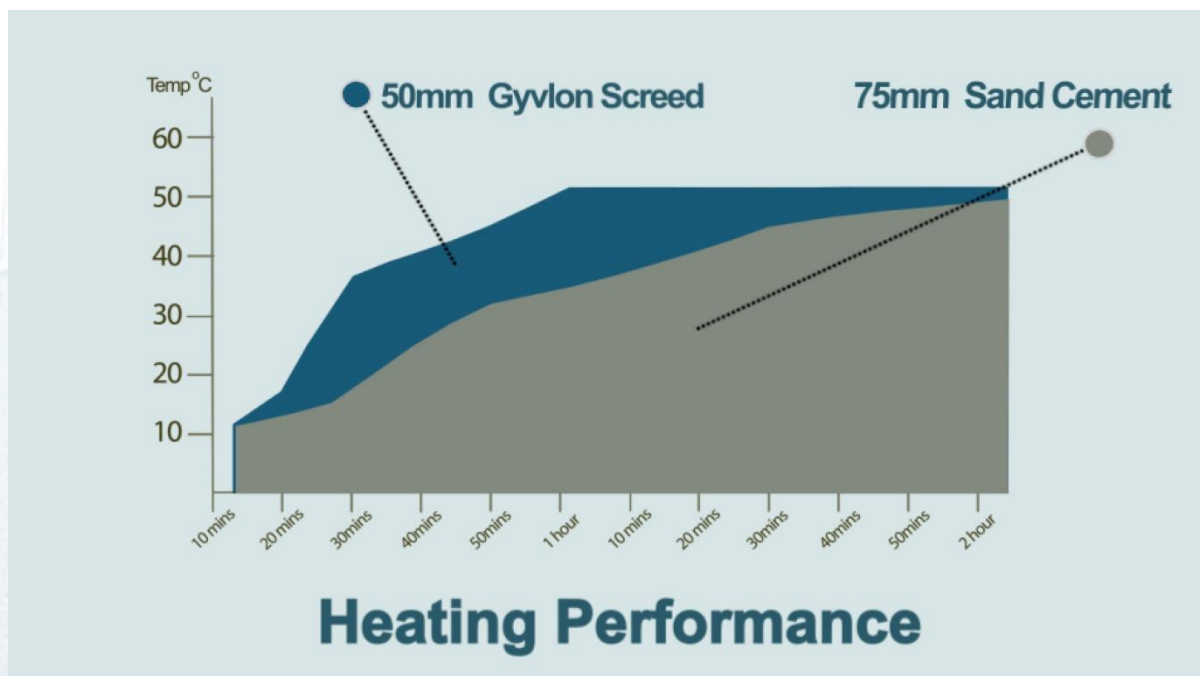
This mix design is specifically for use with **Thermoplane** under floor heating systems. **Thermoplane** is in an exclusive partnership with Gyvlon providing a complete floor package. The testing carried out has provided numerous amounts of data regarding heating performance vs. traditional construction techniques.

GYVLONSteelDeck

Gyvlon SteelDeck screed is designed specifically to be used with the Lewis Deck dovetail sheeting, for use with either timber, metal web or steel joists in masonry, timber or light weight steel structures. To form either ground, separating or mezzanine floor constructions



Heating Performance Data





Site Preparation

Building Envelope

Prior to Gyvlon being applied the building should be as weather tight as possible, with at least the roof in place and any missing glazing or door openings should be temporarily sealed using polythene, insulation or ply.

General Preparation

Where Gyvlon is to be applied floating over insulation the boards should be installed flat to substrate and be free from excessive movement/rocking. The perimeter strip should be installed to all walls and abutments within the screed. The strip should be installed without over stretching and should be pushed fully into all corners.

The insulation should then be overlaid using minimum 500 gauge polythene overlapped by 100mm and taped, cut flush to the perimeter strip. The polythene should be laid flat with minimal ridges (Gyvlon recommend single wound roll).

The perimeter strip's skirt can then be sealed to polythene using tape*.

Underfloor heating pipes should be installed to manufacturer's spacing's and guidelines, as a minimum the pipe should be secured using either a clip rail or staple every 400mm. The pipe should be well secured to prevent floating during the application of Gyvlon.

It is essential that the pipe work be pressure tested (preferably with water) prior to installation of screed, this is to ensure there are no leaks.

Finished preparation should be completely water tight to prevent leaking, polythene and other materials should be grease free and sitting flat to the insulation boards and all pipes and conduits running in the screed must be fully secured.

After Screeding

The building/area should be left as sealed as possible to prevent through draft or rain entering the building. Once the screed is 48 hours old the building can be opened to allow air movement and encourage the drying of the screed.

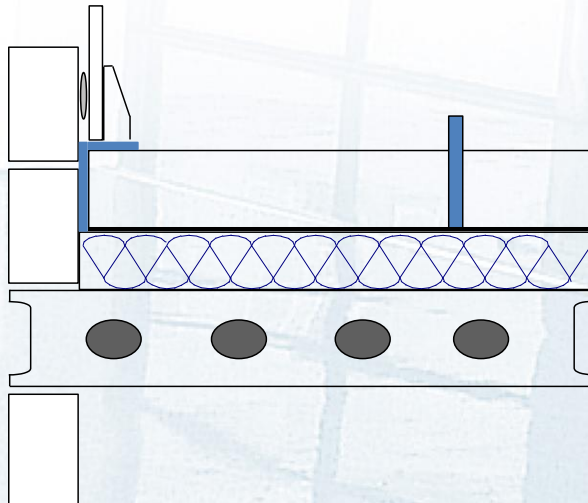
In the interest of optimum drying performance efforts should be made to prevent moisture ingress to the screed.

Please consult the 'Floor Covering' Datasheet ahead of placing and final floor finish

*Please note foil back tape supplied with insulation boards should never be used with Gyvlon screeds

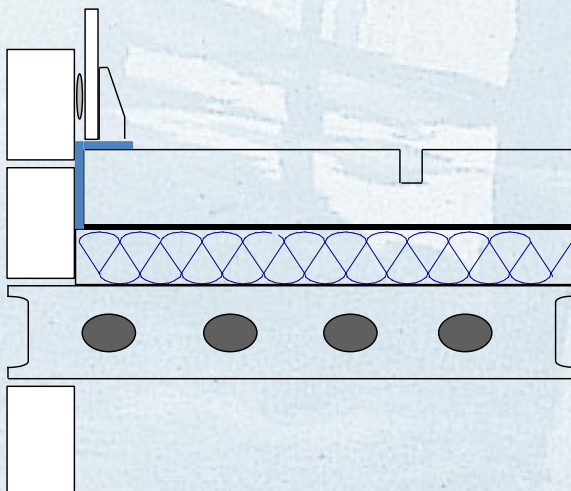


Joints



Expansion joints can be made using pre formed 8 or 10mm closed cell Polyethylene foam with a self adhesive t-bar base known as a vertical control joint. Joints may be needed due to large areas, door thresholds or in between under floor heating circuits, this detail is particularly well suited to under floor heating as it eliminates cutting the screed.

- Insulation, DPM and Edge detail installed as Normal.
- Joint strip attached to DPM where expansion joints are required using self adhesive base, they should also be secured using additional screed tape to improve bond.
- Where the strip meets either walls or door frames these joints should be sealed using tape.
- Install Screed as per Gyvlon Installation Guide and Gyvlon NBS M13 Specification
- Once the screed has cured the joint Strip can be trimmed to screed level using a suitable knife.



Contraction joints can be cut into the screed following its installation.

- Insulation, DPM and Edge detail installed as Normal.
- Install Screed as per Gyvlon Installation Guide and Gyvlon NBS M13 Specification
- Saw cuts should be formed as early as possible following the screed being installed (2-3 Days)
- Saw cuts should be made to half the screeds depth using a floor saw with suitable blade.
- Saw Cuts should be a minimum of 5mm wide
- Joints can be filled using a flexible sealant.

Note: Saw cut joints should be avoided when using under floor heating, for under floor heating joint please see preformed joints.

Note: For maximum bay sizes and dimensions please see Gyvlon Installation guide, or contact our team of Technical Specification Managers



Bay Sizes, Expansion Joints & Edge Detail

Gyvlon screeds are suitable for application to all structural substrates. Gyvlon has excellent dimensional stability (Maximum shrinkage/expansion while drying of 0.02%) but will still require expansion joints based on the criteria below.

MAXIMUM BAY LENGTH

Floating on Insulation	40m
Unbonded/Bonded	40m
Underfloor Heating	20m

MAXIMUM BAY SIZES

Floating on Insulation	1000m²
Unbonded/Bonded	1000m²
Underfloor Heating	300m²

ASPECT RATIO

Unheated	Max 8 : 1
Heated	Max 6 : 1

Edge Detail

The perimeter strip recommended for use with Gyvlon screeds is minimum 8mm (10mm with under floor heating) closed cell polyethylene with an attached polythene skirt, this thickness relates directly to the maximum allowable positive movement within the screed.

Eg. 40m bay length x 0.02 Maximum expansion = 8mm expansion zone

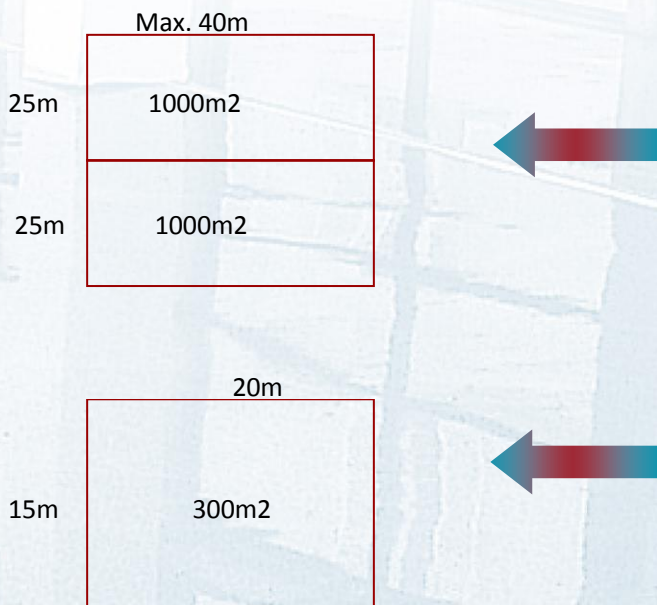
As with all types of screed a joint must be formed above all structural movement joints



Bay Sizes, Expansion Joints & Edge Detail

EXPANSION JOINTS

On larger pours the following guidelines should be used when considering the layout of expansion joints.



NORMAL SCREEDING CONDITIONS

A bay joint is required at this position as the total screed area is in excess of 1000m²

Note: As with all types of screed a joint must be formed above all structural movement joints

SCREEDING CORRIDORS

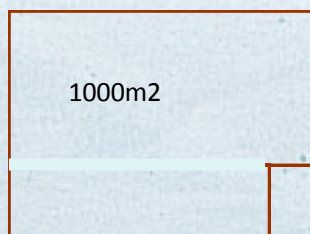
Particular attention should be paid to corridors, aspect ratio must be adhered to and joints may be required where change in direction occur

UNDERFLOOR HEATING

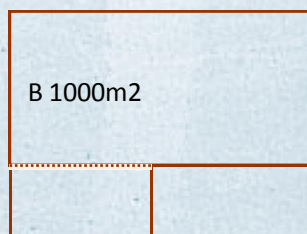
Gyvlon recommends that the maximum bay size when used in conjunction with for underfloor heating is 300m². However it is important to note that a joint should be present between two independent heating zones and door thresholds to allow for thermal movement within the screed and differential temperature gradients.

Note: A joint should be allowed for at the interface between heated and un-heated screeds

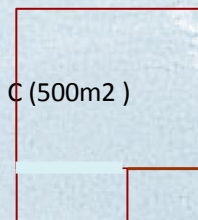
It is also necessary to note that the shape of the room can also affect the requirements for bay joints. The following guidelines highlight our recommendations with regards to placement of joints in relation to the shape of the room and area screeded



No joint required as the proportional area is the main bay and the corner reflects into this space



Joint required as the corner makes up over 50% of the areas length



No joint required unless specified as a construction or day joint. Corner is under 50% of length

N.B. Corridor returns may require an expansion joint. Please contact the technical team for information



Drying a Gyvlon Screed

Following installation, Gyvlon screeds should be provided with adequate protection from rapid drying or draughts for the first 48-72 hours. Thereafter the building should be kept warm and as well ventilated as possible to encourage the screeds drying process.

Four factors should be considered with drying,

Room temperature – Elevating the room temperature will assist the screed to dry through improved evaporation

Relative humidity – It is important to provide good ventilation (dehumidification) to ensure a low RH is achieved as a high RH can slow the drying performance of the screed.

Screed temperature – UFH can be commissioned at 7 days, this raises the vapor pressure greatly improving the drying characteristics of the screed. This should be combined with ventilation (dehumidification)

Moisture ingress – Gyvlon should be protected from moisture ingress to prevent rehydration which will delay the drying process

SCREED DRYING TIME

Under good drying conditions (a warm, well ventilated room) Gyvlon Screed dries at a rate of 1mm/day up to a thickness of 40mm and then at a rate of ½ mm/day for thicknesses above this:

Example:

50mm Gyvlon Screed Drying time: (40mm*1 day) + (10mm*2days) = 60 Days (2 months)

The above example is for guidance only and will be site condition dependent.

Drying times can be reduced by the provision of good ventilation (dehumidifiers), removal of laitance as recommended and by force drying of the screed using underfloor heating.

ASSISTED DRYING

Dehumidifiers:

Dehumidifiers can be used as early as 72 hours after the installation of Gyvlon screed to assist with drying. It is important that a closed system is employed to ensure that any moisture extracted from the environment during operation is removed. Any water collected should be removed regularly.

FORCE DRYING

- Force drying of a Gyvlon screed can begin as early as 7 days following installation of the screed by various methods.
- Commissioning (heating & cooling procedure) of under floor heating systems.
 - Commissioned at ambient floor temperatures, approx 18 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 50 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 should be turned off and allowed to cool for 48 hours prior to moisture testing by digital hygrometer
- Space Heaters & Dehumidifiers in combination.
Fossil fuel fired heaters (E.g. Gas heaters) must be avoided as they will raise humidity.

IMPORTANT

After drying the screed, the residual moisture content must be determined using either digital/hair hygrometer, carbide bomb or oven test.

NB: Drying of screeds can be greatly influenced by individual site conditions.



Floor Covering Preparation

The preparation of Gyvlon screeds ready for floor coverings can be split into four areas:

- **Sanding**
- **Drying and moisture testing**
- **UFH Commissioning**
- **Priming**

Sanding

Gyvlon screeds are available in both a traditional mix which can produce a surface laitance and a Low Laitance which uses a special additive to prevent laitance forming.

Gyvlon screeds will require a surface sanding prior to any adhered floor coverings, this is to be carried out immediately prior to the floor finish application. This is to remove any surface contamination that may have occurred and create a surface key prior to priming and bonding.

NB If using a traditional mix it is advisable to either surface sand or stiff bristle brush after 7-10 days to remove loose surface laitance, this will improve drying performance, the screed will then be sanded prior to cover if required.

Sanding should be carried out using an orbital sanding machine with integrated vacuum. This should be fitted with a 60 grit sand paper or carborundum disc.

NB. Sanding is to remove laitance/surface contamination and create a surface key it is not to remove screed depth.

Moisture Testing

As with all screeds, in good conditions Gyvlon has a natural drying time of 1mm per day up to 40mm 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 using either a hair hygrometer, carbide bomb or oven test and be below 75% RH (0.5% Moisture).

NB: It may be possible to use Gypsum based products at 87% RH (1.5% Moisture), manufacturers must be consulted.

(Please refer to the Gyvlon 'Drying Screed' Datasheet)

Under floor 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 Gyvlon screeds.

The guidelines state that the underfloor heating should be: -

- Commissioned at ambient floor temperatures, approx 18 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 50 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



Floor Covering Preparation

Priming

As with all screeds Gyvlon will require priming prior to application of floor coverings for two reasons:

- 1) To seal the porous surface to prevent suction of moisture from the adhesive or smoothing compound.
- 2) To form a barrier between the screed and any cement based smoothing compound or adhesive that may be used. (Gypsum based adhesive and smoothing compounds are also available)

Primers are to be either Acrylic dispersion or Water based epoxy and generally perform best when used as a two coat system. However the manufacturers of these primers should be consulted for advice prior to use.

NB In our experience neoprene or SBR's are not suitable primers for Gyvlon screeds.

(Please refer to 'Post Installation Products')

Use of DPM's with Gyvlon Screed

If necessary surface applied liquid DPM's can be used under the following conditions

- Gyvlon has been installed for over 28 days
- Moisture level be below 87% RH (1.5% Moisture)
- No Underfloor heating

NB. Installation advice should be sought from DPM manufacturer.



Post Installation Products

Gyvlon cannot make specific recommendation for primers, adhesives and smoothing compounds but have worked with the companies below who can offer suitable products and specification for Gyvlon screeds.

Where bonded covering are being used Gyvlon will always recommend the use of a primer (as described in 'floor covering preparation'), we would recommend that the primer be supplied by the adhesive manufacturer to ensure system compatibility.

Smoothing compounds and tile adhesives can be Cement or Calcium sulphate based. Those products based on cement will require the screed to be 75% RH (0.5% moisture) or less. Calcium sulphate based product can often be installed at 87%RH (1.5% moisture), manufacturer should be consulted.

Where possible Gyvlon will always recommend the use of calcium sulphate based product due to their increased compatibility.

Below is a list of manufacturers who have a range of products or systems which have been used successfully with Gyvlon screed. Final recommendations should be made by the adhesive manufacturer.

Tile Adhesive Manufacturers	
Calcium Sulphate Based	Cement Based
Creative Impressions 01772 335435	Bal/Dunlop 0845 6001222
Nicobond 0208 568 4600	Instarmac 01827 871871
Norcross 01782 524140	Tilemaster 0845 2080040
Granfix 01773 607778	

Timber Adhesive Manufacturers
Havwood Timber Accessories 01772 696600
Sika Adhesives 01707 394444

Vinyl Adhesives and Smoothing Compounds	
Calcium Sulphate based	Cement Based
Creative Impressions 01772 335435	Laybond 01785 272727
Uzin 01926 431447	Ardex 01440 714939
F Ball 01538 361633	Tremco 01942 251400
Eurocol 01773 740688	Instarmac 01827 871871
Mapei 0121 5086970	