



# Agilia

CONCRETE IN MOTION



Agilia™ Gyvlon Screed A is a pump-applied, free-flowing floor screed.



### Applications

- Sub-floor levelling
- For use with underfloor heating
- Unbonded, bonded or floating construction
- Ideal for both new build and renovation work
- Suitable for all residential and commercial floors carrying pedestrian traffic within BS 8204 classification

### Characteristics

- Lafarge's Gyvlon Screed A binder is used as a composite reactive filler in this pump-applied, free flowing, self compacting synthetic anhydrite floor screed.
- Provides smooth, flat surface for the application of most floor coverings.
- Provides a high-quality surface finish, with minimal cracking and no curling.
- Reduced need for construction joints and no need for reinforcement.
- Ideal for use in all warm water underfloor heating applications.
- Environmentally friendly – it is protein free so will not harbour bacteria.

### Advantages

- **Ready in 24 hours** – Suitable for foot traffic usually within 24 to 48 hours. Partitions can be erected seven days after placing.
- **High strength** – Typical compressive strengths up to CA25F4/mm<sup>2</sup> (BRE Test Category A to BS8204) BSEN 13813.

## Minimum thickness

Bonded	=	25mm
Unbonded over a soil base		
Nominal	=	35mm
Minimum	=	30mm
Floating over thermal / sound insulation	=	40mm
Cover over conduits / heating pipes		
Minimum	=	30mm
Maximum	=	80mm



## SPECIFICATION

Flow range = 230mm – 260mm	Density = 2,200kg/m <sup>3</sup>	Fire rating (BS 476: Part 4) = non-combustible
Maintenance of fluidity = 2 hours	Thermal expansion = 0.012mm/moK	Drying time at 20°C 60% RH: Up to 40mm thickness – 1 day/mm
Compressive strength at 28 days = CA25F4	Drying shrinkage at 28 days = 0.02%	Over 40mm thickness – 0.5 per day
Flexural strength at 28 days = 4-6N/mm <sup>2</sup>	Thermal conductivity = 2.2W/ moK	

## Using Agilia™ Gyvlon Screed A based screed:

### Application

- All Agilia™ Screeds are installed by contractors approved by the Lafarge Pro Network. These contractors have the correct equipment and are suitably trained. An up-to-date list of members of the Pro Network is available from your local Lafarge representative.
- A typical gang size will be three to four people depending on the size of the pour; four people should be expected to comfortably lay 1,000m<sup>2</sup> but with favourable conditions they may pour up to 2000m<sup>2</sup> a day.

### Site conditions

- The building should be weatherproof before screeding commences.
- The screed should only be laid when the internal air temperature is between 5°C and 30°C.

### Delivery

- Agilia™ Gyvlon Screed A products are batched and mixed off site under strict quality controlled conditions to BS.EN.13813. The material is delivered ready-to-use to the site by truck mixer.
- On-site quality control is carried out by the applicator using a simple flow test to DIN 1060 to verify the consistency of the mix.
- Adjustment of the flow may be carried out by the addition of water when necessary. The Agilia™ Gyvlon Screed A is then simply pumped into place.
- No curing is required, however the floor should not be subjected to severe draughts, direct sunlight or heating for the first 72 hours to prevent rapid drying during this important early stage.

### Drying

- The ambient conditions must be suitable for the drying of the screed with low air humidity (preferably 60% RH or less) and good ventilation.
- Please note that moisture in the sub-base will impede the drying of the screed.
- Before floor finishes are laid, the moisture content of the screed should be ascertained to be at, or below the required level.
- The British standard for testing a base to receive a resilient floor covering is to use a Hair Hygrometer. This non-destructive test, when used strictly to the method defined in BS8203:2001, will give reliable results on Agilia™ Gyvlon Screed A floor screeds.
- Product may need light sanding to remove any surface laitence.



## Installation guide

### Substrate types

- Agilia™ Gyvlon Screed A can be used where the substrate is any of the following:
  - > concrete slab,
  - > pre-cast concrete floor,
  - > asphalt,
  - > timber or timber-based panel supports.
- For timber, chipboard or similar substrates the Agilia™ Gyvlon Screed A must be non-adherent and you should ensure that the timber structure receives adequate ventilation via the underside of the floor once the topping has been laid.
- Asphalt toppings must be at least 20mm thick.

### Bond to substrate

- The screed can be laid on bonded, unbonded or floating constructions.

### Edge detail

- Polythene strips or other forms of compressible material must be placed around the perimeter and other vertical upstands.
- If insulation boards are not fully supported they may be laid into a grout or weak screed mix to ensure full support.
- The polythene sheet should be of 150µm – 350µm thickness.
- This product is not suitable to be laid over aluminium-backed insulation boards.

### Joints

- Control joints are only required where continuous areas exceed 40m in length.

### Limitations

- Agilia™ Gyvlon Screed A is not suitable as a wearing surface itself or for external or permanently wet areas such as swimming pool surrounds.

### Cavity flooring

- Agilia™ Gyvlon Screed A can be used in conjunction with cavity floor systems to provide a solid jointless surface with a high load-bearing capability.
- Through the provision of a continuous underfloor cavity, a range of cable management and air conditioning systems can be accommodated.

### Overall environment

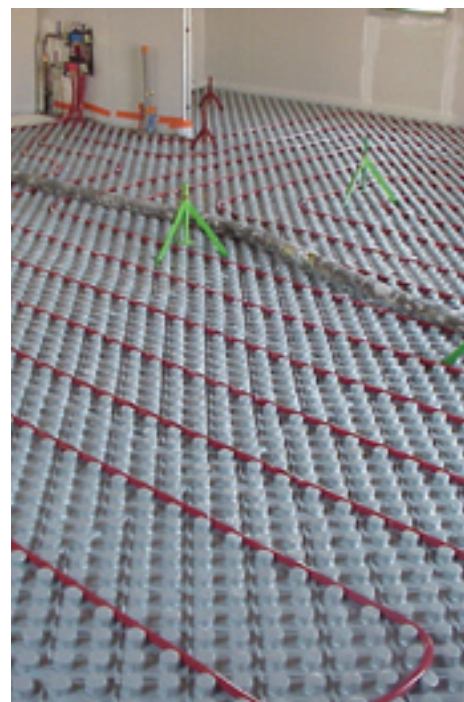
- The building should be weatherproof before screeding. Where applicable, especially on ground floors, there must be a damp-proof membrane below the screed or base.

### Ambient conditions

- Agilia™ Gyvlon Screed A must only be laid when the air temperature is between 5°C and 30°C.
- The substrate must not be frozen and ideally should be within the indicated temperature range.
- The ambient conditions must be suitable for the drying of the screed - low air humidity (60%RH or less) and good ventilation.
- No curing is required, however the floor should not be subjected to severe draughts, direct sunlight or heating for the first 72 hours.

### Setting out levels

- To adequately set out the levels before placing the screed the highest point of the room should be found.
- To easily identify the thickness to be laid, a series of tripods with height adjustable indicators should be used.
- A tripod should be placed at the highest point within the room to denote the top of the finished floor.



- Other tripods should be placed at 2m-3m intervals throughout the floor and the indicators set using a laser levelling device with the first tripod as the datum point.

### Slump-flow measurement

- When Agilia™ Gyvlon Screed A arrives on site the slump-flow of the material should be 250mm +/- 20mm when measured using the appropriate equipment.
- If the mix is outside of the target range then advice should be sought from your Lafarge Readymix representative as to the appropriate course of action.
- A water addition table is also available to assist in bringing the screed up to the required workability.

### Pump priming

- Prior to the screed being pumped it is essential that the pump is primed.
- The pipes must be systematically lubricated with a slurry made up of wallpaper paste mixed with 10l of water.
- The slurry should be fed through the pipes and fully recovered at the other end before any of the screed is discharged from the truck mixer to the pump.
- If wallpaper paste is unavailable then water should be used.

### Placing

- When placing the product the hose should be held approximately 500mm from the substrate.
- The pipe should be moved in a sweeping motion and should not be held stationary above any fixed point.
- Agilia™ Gyvlon Screed A should be poured until the pre-set levels, as denoted by the tripods, have been reached.

### Dappling

- When the material has been placed to the desired levels it should be dappled immediately to obtain the best surface finish.
- The T-bar should be moved across the surface of the screed with a tamping motion to generate a wave-like ripple across the surface.
- The dappling should occur in two directions, the second being perpendicular to the first.
- The first pass should be deep (approximately two-thirds of the depth of the screed), the second a light skim over the surface.

### Following placing

- The room in which the screed has been laid should be sealed for a minimum of 48 hours.
- The room will be suitable for light foot traffic after this period and can be worked on after 72 hours.

### Floor finishes

- Any type of floor finish can be applied to an Agilia™ Gyvlon Screed A. The method for surface preparation is the same as for any other type of screed.
- Consideration should be given to priming which will be necessary if adhesion is required.
- Any surface laitence should be removed by lightly sanding the surface.

### Residual moisture content

- Before floor finishes are laid, the moisture content of the screed should be checked by the floor finish contractor.
- At a thickness of 30mm, with ambient temperature of 20°C and with good ventilation, Agilia™ Gyvlon Screed A should reach a moisture content of 0.5% within 30 days, necessary to receive most subsequent floor finishes.
- Forced drying of Agilia™ Gyvlon Screed A is possible if required: after seven days heaters and dehumidifiers may be used to improve drying conditions.



## Compatibility with cementitious products

- Whenever a cementitious product is to be laid on Agilia™ Gyvlon Screed A, the screed must be dry and primed with a suitable epoxy of polyurethane primer or an acrylic polymer primer.
- Contact your Lafarge Readymix representative for information on suitable primer products.

## Thermal and acoustic flooring & underfloor heating

- Agilia™ Gyvlon Screed A can be laid as a floating construction over most types of rigid insulation board or acoustic foam at a minimum thickness of 35mm.

## Underfloor heating

- Agilia™ Gyvlon Screed A is well suited for underfloor heating applications as it is laid much thinner than traditional screeds with only 30mm required for the cover of the pipes.
- This enables the system to release the heat much more quickly and efficiently in response to the users' requirements.
- Good compaction around the heating pipes is assured due to the flowing nature of the screed which eliminates voids and air pockets, common with traditional screeds.

## Timber frame systems

- Agilia™ Gyvlon Screed A is also suitable for use with many timber flooring systems.

## Bonded screeds

All residues must be removed to provide a dry, dust-free surface which is free from laitence or other contamination. The base should be treated with an SBR-based primer or similar which is allowed to dry before application of the screed.

## Partially bonded screeds

All residues must be removed by vacuum to provide a dry, dust-free surface free from contamination. The base should be treated with a primer which is allowed to dry before application of the screed.

## Unbonded and floating screeds

The base is to be swept clean, should be smooth enough to ensure that a polythene sheet will lie flat on the floor without risk of puncture, and be level enough to ensure insulation boards are fully supported and cannot rock on high points. If insulation boards will not be fully supported they may be laid into a grout or weak screed mix to ensure full support. The polythene sheet should be 150µm – 350µm thickness. This product is not suitable to be laid over aluminium backed insulation boards.

## Avoiding potential problems

*Over-watering of the mix leads to:*

**Extended setting time** – Material remains workable for an increased period.

**Excessive laitence** – Final surface finish has a greater degree of dusting than would normally be expected.

**Segregation of mix** – The Agilia™ Gyvlon Screed A mix has been formulated taking into account appropriate water/ binder ratios, if this is increased then the chance of the mix segregating is increased.

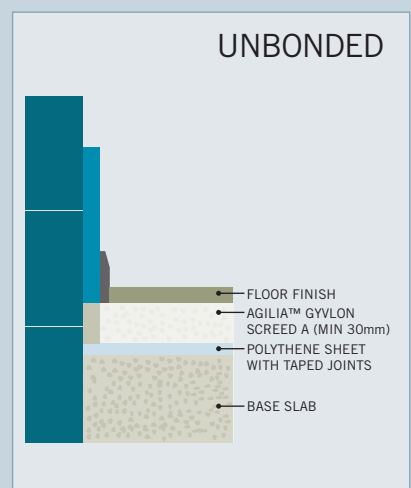
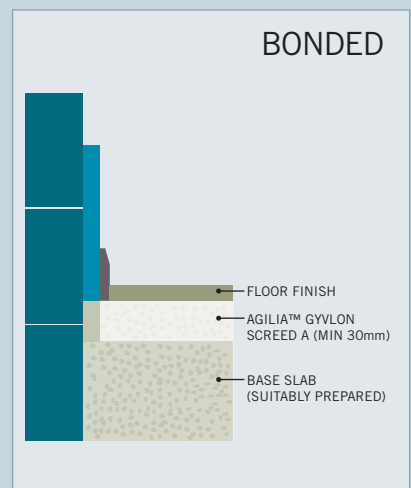
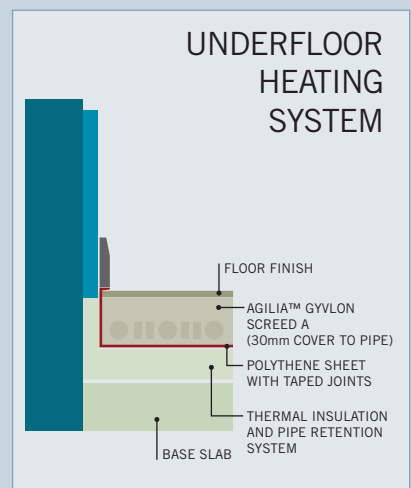
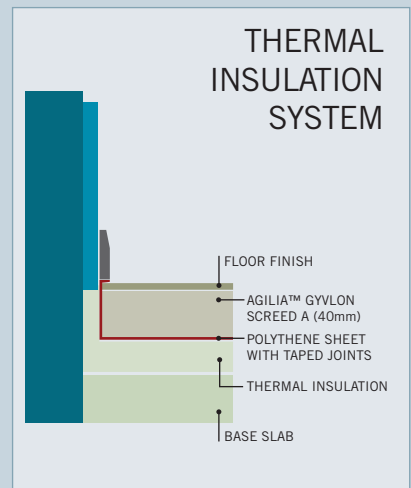
**Pump blockage** – This is as a direct result of the segregation of the mix, the sand particles segregate from the paste and block the lines of the pump.

**Extending drying time** – The drying time of the screed can be extended by up to 10 -15 days, this will have an impact on the final floor finisher.

**Increased risk of plastic shrinkage** – An increase in shrinkage potential will occur at an early age when the water content is increased; this in turn increases the risk of plastic cracking in the material.

**Decreased strength** – An increased water-content directly correlates to a reduced strength.

**'Wind Tunnel' syndrome** – If the room in which Agilia™ Gyvlon Screed A has been laid is not adequately sealed, or it is subjected to draughts during its drying period, 'Wind Tunnel' syndrome can occur.



**Surface laitence** – The degree of laitence is increased when the surface is subjected to draughts. Rapid drying out of the surface can create a weak surface layer.

**Plastic shrinkage cracking** – Rapid drying of the surface increases the risk of plastic shrinkage cracking.

**Variable surface finish** – Wind tunnel syndrome will cause a variable surface finish in the screed due to different areas being subjected to different degrees of drying.

**Remedial work** – All of the problems listed above lead to remedial work having to be undertaken in order to remedy the defects.

*Poor preparation as a result of incorrect placement of expansion material leads to:*

**Cracking** – Expansion material should be placed around the perimeter of the area to be screeded, it should also be placed around all columns and vertical extrusions in the area. Around corners it may be necessary to place a double layer of the material in order to maintain the required thickness. This is essential as the screed initially retains water it has the possibility to expand; if it cannot expand it will crack.

**Holes in the polythene membrane allowing ingress of water** - Particularly a problem on the ground floors of buildings where the polythene membrane is the DPM and holes can lead to water ingress to the screed. This can result in de-bonding, where layer of water, no matter how small, can potentially cause the screed to de-bond from the substrate.

**Incorrect levels that lead to decreased strength** - If the setting out of the site is inadequate the depth of the screed may be insufficient. This is more likely to occur if the substrate is not of a uniform level. When the cross-sectional area of the screed is reduced there is a lack of strength in the screed.

**Creases in the polythene membrane that cause cracking** - Polythene should be laid flat with an overlap of 100mm between adjacent sheets, sealed with 50mm width adhesive tape. Creases should be taped flat as they can cause cracking by acting as crack inducers.

## Low laitence

Low laitence Agilia™ Gyvlon is also available from Lafarge Readymix at same locations as Agilia™ Gyvlon. This should be placed and applied in exactly the same manner as Agilia™ Gyvlon.

The development and innovation behind Lafarge's Agilia™ Gyvlon Low Laitence offers a product with significantly reduced surface laitence which is likely, dependant upon clients' requirements, to require no further surface treatment after placement other than the removal of dust and construction debris prior to any surface treatments such as priming and sealing.

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**Lafarge Aggregates & Concrete UK**  
**Granite House, PO Box 7388**  
**Watermead Business Park, Syston**  
**Leicester, LE7 1WA**

**Tel: 0870 336 8258**

**agilia@lafarge.com**

**www.lafarge-aggregates.co.uk**

Lafarge Aggregates Limited registered in England and Wales 297905

