HOGAN

Concrete

MASTERFLOW

Flowing Screed

MASTERFLOW

Why change to Masterflow?

	HOGAN Masterflow	Sand and Cement
Productivity	✓ Easily up to 2000M² per day ✓ Average 500 - 1000M² per day	✗ Only 100 to 150M² per day
How quickly can you walk on the floor?	✓ Within 24 to 48 hours ✓ No curing needed	✗ Should not be walked on for 7 days ✗ Requires covering and curing
Joints	✓ 30 - 40 linear meters ✓ Following building construction joints	✗ Can only be laid in small bays of between 5 - 7 linear meters
Performance	✓ Very low shrinkage ✓ Minimal cracking ✓ Will not curl	✗ Shrinks ✗ Cracks ✗ Curls
Surface Finish	✓ Easily achieves SR2 under BS 8204	✗ Dependent on contractor ✗ Curls and cracks at joints
On Insulation	✓ No reinforcement required ✓ 40mm minimum thickness in commercial buildings ✓ 35mm minimum in domestic buildings	✗ D49 or fibre reinforcement ✗ 65mm minimum thickness
Un-bonded Floor Construction	✓ Polythene laid directly to substrate minimal preparation ✓ No reinforcement ✓ 30mm minimum thickness	✗ D49 or fibre reinforcement ✗ 50mm minimum thickness
Average Drying Times	✓ 1mm per day up to 40mm ✓ Dependent on site conditions	✗ 11 weeks at 75mm thickness ✗ Dependent on site conditions
Quality Control	✓ Produced under BS EN 13454	✗ Often mixed on site by hand with poor quality control ✗ Labour intensive ✗ Inconsistent quality
Cost	**In most applications Hogan Masterflow gives cost/time savings over traditional hand applied sand and cement screed**	

Applicator Data Sheet
Issue 1 01/05/08
Revision 1

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MASTERFLOW

Description

MASTERFLOW FLOWING SCREED is a blend of ANHYDRITE BINDER and selected aggregates mixed with clean potable water to produce a flowing pumpable screed.

Uses

MASTERFLOW FLOWING SCREED is designed to provide a smooth level surface in both commercial and domestic buildings prior to the application of floor finishes and is particularly suitable to application as a floating screed and for use with underfloor heating systems.

Key Features

- Increased productivity - 2000m²/day can be easily achieved. (average 500-1000 m²/day).
- Can be walked on in 24-48 hours.
- Does not require curing.
- Extremely low shrinkage - does not curl and minimises the risk of cracking.
- Suitable for floating floor construction.
- Avoids the need for reinforcement.
- Ideal for use with underfloor heating systems enabling rapid commissioning of the underfloor heating in accordance with BS1264:2001-Part 4 clause 4.4.
- Significantly reduced thickness when compared to traditional sand - cement screed.
- Weight saving as a result of thinner section.
- Large bay sizes of up to 30-40 linear meters depending on application.
- Dries at a rate of 1mm per day up to a screed depth of 40mm however this can be affected by adverse site conditions.
- Can be force dried as early as 7 days after application.
- Easily achieves SR2 finish as described in BS8204.
- Protein free - cannot harbour harmful bacteria.
- Non combustible (tested to BS476 Part 4).
- Minimal Thermal expansion (0.012mm/mK).
- Excellent termal conductivity (2.2W/mK).

Technical Data

Appearance/Colour:	Off-white fluid mortar
Water demand:	13-15% b.w.
pH:	>10
Wet Density:	2200kg/m³
Dry Density:	2000kg/m³

Composite Screed Properties (Typical)

Nominal 750kg/m3 Anhydrite Binder + Standard Sand to clause 5.1 of EN196-1: 1994 and 13.5% water.

Flow: DIN 1060 Flow Ring 260mm

Setting Time: EN196-3:1994 Vicat

Initial Set	> 300 Mins
Final Set	< 660 Mins
Compressive Strength:	
3 days	> 15N/mm²
28 days	> 30N/mm²
Flexural Strength:	
3 days	> 3 N/mm²
28 days	> 8 N/mm²

Minimum Application Thickness

Bonded:	25mm
In Contact with Substrate:	30mm
Unbonded:	30mm
Floating Commercial:	40mm
Floating Domestic:	35mm
Underfloor Heating:	30mm minimum cover to pipes

Delivery

MASTERFLOW FLOWING SCREED is supplied in bulk via a concrete plant in 5m³ mixer trucks.

Health & Safety

Some of the components of this product may be hazardous during mixing and application. Please consult the relevant Health & Safety Data Sheets, available from Hogan on request and provided with each delivery.

Hogan Masterflow Flowing Screed DATA SHEET

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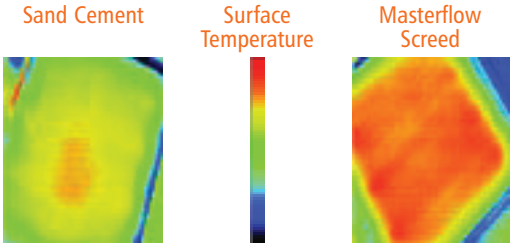
MASTERFLOW

Description

HOGAN MASTERFLOW FLOWING SCREED is a blend of ANHYDRITE BINDER and selected aggregates mixed with clean water to produce a flowing pumpable screed, which is ideal for application over both warm water and electric under floor heating systems.

Key Features

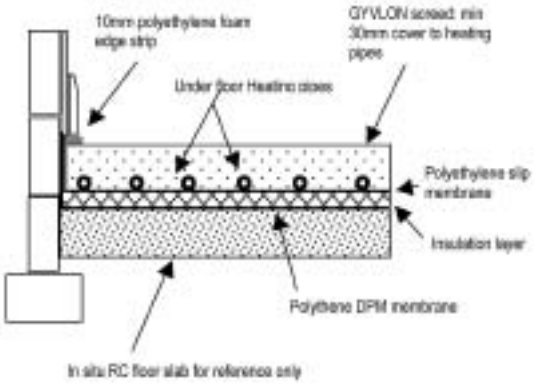
- Produced to a controlled flowable consistency to fully encompass heating pipes.
- Elimination of voids resulting in uniform heat transfer and maximised thermal efficiency of the under floor heating system.
- Reduced screed depth when compared to traditional sand cement screeds minimising heat storage, resulting in a floor which responds rapidly to user requirements.
- Extremely low shrinkage - can not curl and minimises the risk of cracking.
- Does not require reinforcement.
- Increased productivity - 500-1000 m^2 per day can be easily achieved.
- Heating systems can be commissioned in accordance with BS1264:2001-4 clause 4.4, as early as 7 days after application of the screed.
- Minimal thermal expansion (0.012mm/Mk).
- Excellent thermal conductivity (2.2W/Mk).



Temperature across screed surface 80mins after turning underfloor heating on

- Environmentally friendly.
- No curing required.
- Ready for foot traffic in 24-48 hours.

Typical Schematic Installation



Key Installation Points

- The area to be screeded must be made water tight to prevent leakage.
- The polythene slip membrane installed over the insulation must be overlapped and sealed to prevent loss of screed.
- Pipes or cables must be securely fixed to prevent floatation and lifting during application of the screed.
- Best practice is to fill pipes prior to application of the screed to check for leaks, this also reduces the risk of pipes floating whilst the screed is being poured.
- Ideal flow 230-250mm measured using the DIN1060 flow ring.
- Minimum cover to pipes or cables must be 30mm.
- If required surface laitance must be removed prior to commissioning of under floor heating.
- Heating should be commissioned in accordance with BS1264:2001-4 clause 4.4 to accelerate force drying of the screed prior to application of the floor finish.
- Screed moisture content must be a maximum of 0.5% and 1.0% respectively prior to application of subsequent impermeable and permeable floor coverings.

HOGAN MASTERFLOW

First Choice over Underfloor Heating

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Preparation of Hogan Masterflow to Accept Floor Finishes

The surface of a Masterflow screed must be prepared to receive subsequent floor finishes to minimise the risk of failure and ensure that a trouble free installation results for the duration of the service life of the floor. The following guide lines have been drawn up to take the floor layer through the relevant stages of preparation to minimise the risk of failure of the finished floor covering in later life.

1. Removal of Surface Laitance

Occasionally it will be necessary to sand the surface of a Masterflow screed to remove surface laitance, however when subsequent floor finishes are to be fixed to the screed the laitance must be removed prior to application of an approved primer/sealer. In ideal conditions sanding should be possible 1-3 weeks after laying but this can be greatly influenced by conditions within the building envelope with damp or humid environments likely to extend this considerably.

It is advantageous to remove the laitance at early ages whilst it remains weak and friable however if left in place a small delay to drying times may result and effective removal may be more difficult to accomplish.

Sanding of the surface is generally carried out using an industrial orbital sander fitted with a carborundum disk (typically 60's grit) and suitable dust extraction. Due to the fine nature of the laitance it may be necessary to use several grades of carborundum to avoid clogging of the finer disks. Strongly adhered laitance may require the use of an abrasive copper disk followed by the use of a finer carborundum disk to produce the desired surface.

2. Determination of Residual Moisture Content

Prior to sealing/priming and the application of subsequent floor finishes the residual moisture content of a Masterflow screed should be checked by the floor finishes contractor. This can be accomplished by one of the following approved methods.

- **Hair Hygrometer:** This is the British Standard test method for determining the suitability of a base to receive resilient floor coverings. The test is non destructive and when adhering to the test method defined in BS8203 provides reliable results for calcium sulphate based screeds for a Relative Humidity of 75%.
- **Carbide Bomb:** A destructive test method in which a small sample of screed is removed and placed in a test vessel in the presence of a chemical reagent. This method gives a direct reading of the moisture content within the sample of screed tested.
- **Oven Drying:** A sample/core of screed is taken from the floor weighed and dried in an oven at 40ºC for - days. This method again gives a direct measurement of the moisture content within the screed.

In all instances when applying resilient floor coverings the maximum permissible moisture content for impermeable finishes such as vinyl and tiles should be 0.5%, which when using the hair hygrometer test method equates to a reading of 75% RH, and 1.0% for permeable coverings such as carpet.

Note: Electronic meters are not suitable for accurate determination of the moisture content of calcium sulphate based screeds however can be used as a guide to determine the wettest areas of the screed. Once identified it is recommended that the hair hygrometer should be placed in these locations.

3. Repairs to Surface Damage Making Good

The surface of a Masterflow screed may become damaged as a result of general site traffic or may, although unlikely require making up to the correct datum. In both cases remedial action will be required to make up the screed depth produce a surface that is suitable to receive resilient floor coverings.

SURFACE DAMAGE:

- Clean back to sound material removing any dust and other contamination.
- Prime the area with the approved primer in accordance with the manufacturers recommendations.
- Apply the recommended levelling material in accordance with manufacturer's instructions.
- Allow to cure and sand the surface of the screed as previously described.

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Preparation of Masterflow screeds to Accept Floor Finishes

MAKING GOOD LEVELS:

- Lightly sand the surface of the screed.
- Remove dust and other contaminants.
- Prime the area with the approved primer in accordance with the manufacturers recommendations.

Apply the appropriate levelling compound relative to application thickness in accordance with the manufacturer's recommendations.

Note: When applying levelling compound to a Masterflow screed it is important that the residual moisture content has been determined and that the relative humidity should be less than 75% as determined by the hair hygrometer test method. Failure to adhere to this stage of the process is likely to result in failure of the bond between the primer and or the floor covering and the screed.

Whenever cement based leveller or moisture sensitive coating is to be applied to a Masterflow screed the screed should be dry and primed with a penetrative epoxy, polyurethane or acrylic polymer primer as recommended by the manufacturer of the levelling compound.

Failure to follow the installation guide lines and good site practise during the early life of the screed may also result in defects in the screed generally in the form of cracks. Cracks if present will require different treatment, in accordance with the methods given below, dependant on severity.

CRACKS:

The following procedures must only be followed subsequent to drying of the screed. Cracks up to 0.5mm may close during this time and autogeneous healing of the screed will occur.

SMALL CRACKS:

- Rake out loose material from the edges of the crack, vacuum removing any dirt or dust that has been walked into the crack.
- Mix up an appropriate water based polymer with water diluted in a ratio of 1:5.
- Add the diluted polymer to gypsum finishing plaster to produce a fluid pourable consistency
- Pour mixture into the cracks and work in using a trowel.
- Allow to stand and fill up as necessary, where required fill with material of a stiffer consistency.
- Scrape off level with the surface of the screed.
- Sand over the whole area as described earlier.

LARGE CRACKS:

- Open the top of the crack chasing out a minimum of 5mm x 5mm using a disc cutter.
- Rake out any loose material and vacuum to remove any dirt or dust that has been walked into the crack.
- Fill the crack with a low viscosity epoxy resin topping up as necessary. For larger cracks the epoxy can be bulked out with a fine, dry silica sand.
- Sand the whole area as described earlier.

EXCESSIVE LAITANCE:

- Sand the whole area of screed and vacuum to remove all traces of contamination, dust and friable laitance.

  Note: When excessive bleed occurs as a result of high fluidity or ingress of water prior to the screed setting an excess of fines will form at the screed surface. This must be removed prior and may require the use of additional heavy duty sanding to produce a surface suitable to receive floor finishes

- Ensure the screed is dry, < 75%RH.
- Ensure the surface remains free from contamination and apply a suitable penetrating primer in accordance with manufacturer's recommendations.

  Note: Where underfloor heating is present commissioning in accordance with the manufacturer's recommendations must be undertaken prior to application of the primer. Due to increased porosity heavily sanded areas will benefit from the use of a water based epoxy.

- Make good surface levels using a suitable smoothing compound in accordance with manufacturers recommendations.

4. Priming

In common with all types of screed a suitable surface sealer/primer must be applied, in accordance with the manufacturer's recommendations, to the surface of a Masterflow screed prior to adhering the final floor finish.

Note: When applying cement-based products such as levelling compounds or adhesives, the screed must be dry and should be primed with the appropriate primer as recommended by the manufacturer of the cement based product.

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Installation Guide

Hogan Masterflow Screed is Ideal for

- Sub-floor levelling in both commercial and domestic buildings.
- Providing a smooth, flat surface for the application of all types of floor coverings.

Hogan Masterflow screed offers complete versatility of use with both thermal and acoustic insulation, and enhances the performance of most under-floor heating systems due to its thinner section.

Recommended Minimum Construction Thickness

APPLICATION	MINIMUM DEPTH
• Fully Bonded	25 mm
• In contact with the substrate/ Unbonded	30 mm
• Floating Commercial	40 mm
• Floating Domestic	35 mm
• Cover to conduits/ underfloor heating pipes	30 mm

First Choice in Flowing Screeds

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MASTERFLOW

Application and Finishing

Substrate Preparation

- The building envelope should be sealed before preparation commences.
- Where applicable a suitable damp proof membrane must be present below the screed or the base.

  Note: (i) Damp substrates such as concrete bases can result in considerable delays/extension of screed drying time.

  (II) High sub-base moisture contents (>75%) will necessitate the use of the appropriate damp proof membrane.
- Remove all dust and debris ensuring any items which may puncture the surface membrane or resilient layers have been removed to leave a substrate free from contamination. Progress as described in the relevant section below.

Unbonded Laid on a Membrane

- Fit an 8mm expansion strip with polythene skirt to the perimeter walls and any up stands.
- Lay polythene membrane ensuring it is free from punctures and lies flat on the base (substrate).
- Lay separating membrane in accordance with screed manufacturers recommendations lapping joints a minimum of 100mm.

  (Note: if specified membrane should be DPM grade)
- Tape all joints.

In Contact with the Substrate

- Prime base with a suitable primer in accordance with the manufacturers recommendations.
- Allow primer to dry.
- Fix 8mm expansion strip to the perimeter walls and any upstands.

Bonded on Concrete

- Remove laitance and surface contamination exposing the main aggregates by suitable mechanical means (shot blasting or scabbling).
- Vacuum to remove all dust and debris.
- Prime surface with a suitable primer following manufacturers recommendations.

Floating on Insulation Boards

- Ensure insulation lays flat on base (Where necessary lay a grout or screed to remove high points and ensure boards lay flat).
- Lay insulation boards with tightly butted joints.
- Fix 8mm expansion strip with polythene skirt to the perimeter walls and any upstands.
- Lay separating membrane in accordance with screed manufacturers recommendations lapping joints a minimum of 100mm taping all joints.

  (Note: if specified membrane should be DPM grade).
- Ensure membrane lies flat and is free from folds.

NOTE: 1. When using foil faced insulation boards a fully sealed separating membrane must be applied over the foil prior to application of the screed.

2. It is important to consider the type and nature of the insulation with regards to the specified installation depth and the manufacturer must be consulted for advice on product suitability.

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Floating on Extruded Polyethylene or Similar Impact

- Ensure insulation lays flat on base (Where necessary lay a grout or screed to remove high points and ensure boards lay flat).
- Lay insulation on base lapping joints a minimum of 100mm, tape all joints. Alternatively lay insulation with butt joints and overlay with polythene.
- Fix 8mm expansion strip with polythene skirt to the perimeter walls and any upstands.
- Lay separating membrane in accordance with manufacturers recommendations ensuring it lies flat and is free from folds.

Underfloor Heating

- Ensure insulation lays flat on base (Where necessary lay a grout or screed to remove high points and ensure boards lay flat).
- Lay a suitable DPM layer overlapping joints a minimum of 100mm ensuring all joints are fully taped.
- Fix 8mm expansion strip to the perimeter walls and any upstands- Note: The expansion strip may be formed of a proprietary strip of compressible material with a polythene skirt.
- Lay heating system insulation boards in accordance with manufacturers' recommendations lapping and taping joints as required.
- Where appropriate lay a separating membrane over the insulation in accordance with manufacturers recommendations ensuring it lies flat and is free from folds.
- Securely fix down underfloor heating pipes/cables- Note: If using warm water systems pressurise the pipe work prior to application of the screed to check for leaks.

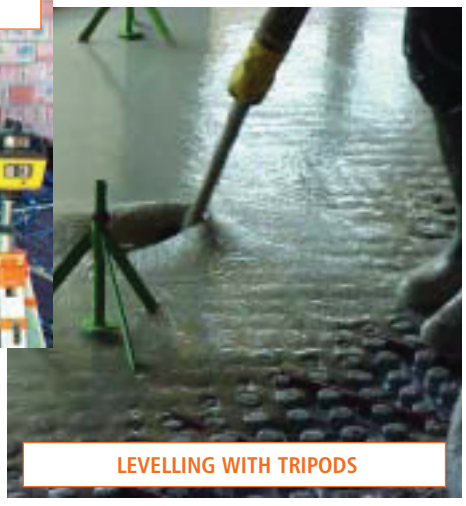
Setting Levels

Screed levels can be set by laser, stand/tripods or in small rooms directly from datums.

Masterflow Flowing Screeds

PLACING SCREED MASTERFLOW

USING A LASER LEVEL



LEVELLING WITH TRIPODS

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Acceptance Testing: Flow

- The screed mortar is tested for flow on arrival by the applicator. The flow should be between 230mm and 270mm.
- Flow can be adjusted by addition of water within pre determined limits set by the mortar producer with further mixing in the truck before being retested and applied.

Flow Test - DIN 1060 Ideal Flows:
- **230mm - 270 mm**
- **Underfloor Heating 230mm -250mm**

- If the flow on delivery is higher than required, it should be re-tested after a further 5 minutes mixing in the truck. If still out of specification it is recommended that the load is not used until the mortar producer has been contacted.

NOTE: When ordering material the required flow rate should be stated. Many production plants require a "margin" of ±25mm and this must be taken into account when ordering.

Best practice is to record the results of all flow tests and details of water addition so that in the event of any problems the information is available to both Hogan Masterflow and the producers' technical department. Flow test equipment is available to purchase from our Bangor Office.

Placement

- Placement is via a pump at a delivery rate of approximately 5m^3 every 20-30 minutes. Such machines are readily available for hire and sale in the UK and can be towed behind most cars or vans.

NOTE: The performance and operation of pumps varies, however most suppliers offer training and advice if required.

- Hogan Masterflow screed should be placed within 3 hours of manufacture, and the drum of the mixer trucks should be turning at an appropriate speed constantly throughout this period.

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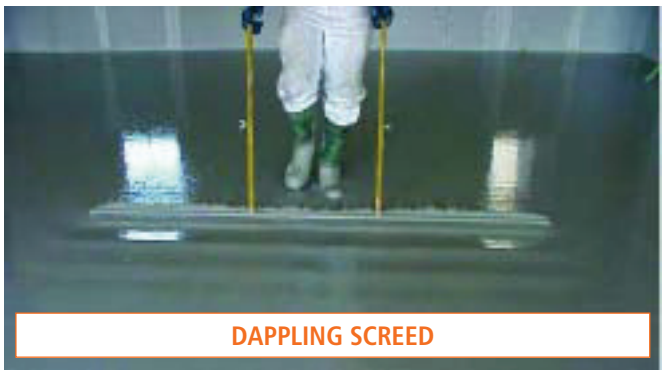
Installation of the Screed: Site Conditions During Application and the First Three Days Following Installation

As with all screeds the performance and finish achieved with Masterflow can be affected by the conditions on site in which it is installed and for a short period afterwards. The following watch points should be adhered to during this time.

- Protect from frost. Apply the same winter working restrictions as when placing concrete, i.e. work should stop at temperatures of 5°C and falling and may resume again at 3°C and rising.
- Providing internal temperatures are maintained work may continue when the outside temperatures are as low as 2ºC.
- Do not lay at temperatures of 30°C and over - high temperatures extend setting times and may be reduce. the final strength of the screed.
- Maintain a relative humidity of 50% and above in the air above the screed during the first 48 hours after application.
- Immediately after application and until the screed has hardened protect the surface of the screed from water ingress, severe draughts and direct sunlight.
- Wherever possible avoid water ingress to completed screeds removing any standing water as soon as possible. Whilst under water the screed may suffer a minor loss of strength, however this will be regained when it dries out.

Finishing/Final Placement

- The final finish on a Masterflow screed is achieved by dappling the surface with a T-bar in two passes producing a smooth level surface and removing any air bubbles.
- The first pass with the dappling bar should be heavy enough to create a small wave in front and behind the bar helping the screed to achieve its' final level.
- The second pass, at right angles to the first, is lightly drawn across the surface, taking care not to break contact with the dapple bar and surface of the screed.
- The second pass is the final finish so care with this operation prevents remedials later.
- Dappling should be carried no more than 15 minutes after placing.



DAPPLING SCREED

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Joints

In some buildings it will be necessary to include joints in the screed which can be formed as detailed.

- **Large Areas:** Unbonded or floating constructions greater than 30 but less than 40 linear meters without a break such as a dividing wall require a bay joint of compressible material (see stockist list). Alternatively the joint can be formed by a full depth saw cut in the screed on hardening.
- **Day Joints:** If required shuttering should be used to create a vertical edge on the screed. After removal the next day's pour can be butted up against the first days work.

  Note: If several days have passed between pours and the screed is beginning to dry out, the edge should be primed with an appropriate acrylic or epoxy primer before commencing the next pour.
- **Structural or Movement Joints:** As with all floors, it is necessary to continue such joints through the full section of the screed.
- If long delays between two deliveries of Masterflow occur, a temporary shutter should be used to hold the screed in place and will avoid the formation of a "cold" joint.
- **Underfloor Heating:** In such applications any joints must follow the heating circuits and it is recommended that the manufacturer of the Underfloor heating should be consulted with regards to layout.

After Application

- Hogan Masterflow screeds do not need curing.
- Do not cover the screed, this is not necessary and will only delay final drying.
- Access to the screed should be restricted for between 24 and 48 hours to prevent damage to the screed surface before it hardens.
- The screed can be walked on 24 to 48 hours after application dependant on site conditions with normal site traffic and erection of non-load bearing partitions after 7 days.
- Masterflow screed is not a wearing surface, and protection from other construction trades may be necessary in areas of heavy use such as loading bays.
- Depending on the following floor coverings it may be necessary to remove any surface laitance. This is accomplished by a light sanding 1-3 weeks after the screed has been laid dependant on site conditions.
- Removal of the laitance will help drying of the floor.

Drying

- Under like for like conditions Masterflow screed dries at the same rate as a traditional sand and cement screed (approximately 1mm/day up to 40 mm thickness. This increases for screeds thicker than 40 mm and in poor drying conditions).
- Masterflow screed should be protected from rapid drying within the first 3 days after application however in common with other screeds, it is very important that good drying conditions are provided as soon as the screed is laid.
- Forced drying of Masterflow using dehumidifiers or commissioning of underfloor heating systems in accordance with BS1264 Part 4-2001, can begin 7 days after application of the screed.

Surface Finish

The British Standard (BS8204) classifies the surface finish of a screed by Surface Regularity according to SR1, SR2 and SR3. Masterflow screed will easily achieve the requirement of SR2 however by paying particular attention it is possible to achieve SR1.

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Construction Joints and Bay Sizes

Hogan Masterflow screeds are suitable for application to most types of sub bases demonstrating an excellent degree of dimensional stability (max shrinkage/expansion on drying of 0.02%) when compared to traditional sand cement based screeds.

1.0 Maximum Bay Length

Floating on Insulation	Nominal 30m (max 40m)
Unbonded on Polythene/visqueen	Nominal 30m (max 40m)
Bonded	Nominal 30m (max 40m)
Underfloor Heating	Maximum of 20m

Recommended maximum bay lengths for Hogan Masterflow screed without the introduction of joints

2.0 Maximum Bay Size

Floating on Insulation	1000m^2
Unbonded on Polythene/visqueen	1000m^2
Bonded	1000m^2
Underfloor Heating	300m^2

Recommended maximum bay size for Hogan Masterflow screed without the introduction of joints

3.0 Movement Joints

The edge strip recommended for use with Masterlow screeds is generally 8-10mm foamed polyethylene with an attached polythene skirt, this thickness relates directly to the maximum allowable positive movement within the screed

40m x 0.02% → 8mm

It is recommended that very large pours of floating or unbonded construction with a dimension >30m but <40m without a break such as a dividing wall should include a bay joint of compressible material such as Flexcell or Ethafoam. Alternatively, on hardening a saw cut to the full depth of the screed can be included to form the day joint.

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

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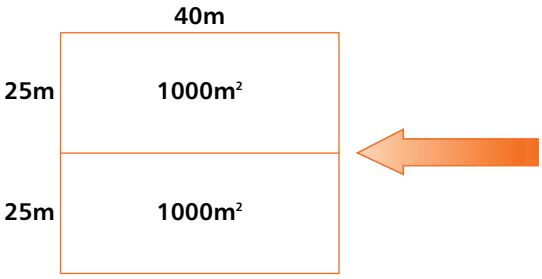
Construction Joints and Bay Sizes

4.0 Joint Placement

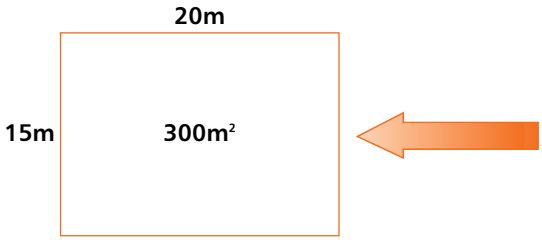
On larger pours the following guidelines may be of use when considering the layout of any day-work or bay joints during screed placement.



Normal Screeding Conditions

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

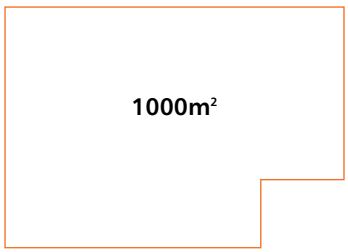
Note: If construction joints are present in the base then additional jointing will be necessary



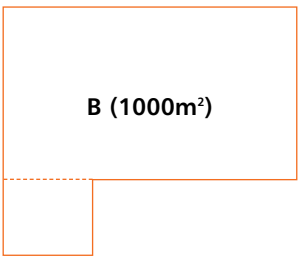
Underfloor Heating

Hogan Masterflow recommends that the maximum bay size when used in conjunction with for underfloor heating is 300m² Underfloor Heating manufacturers have their own guidelines for the positioning of movement joints within the screed; however it is important to note that a joint should be present between two independent heating circuits to allow for thermal movement within the screed and differential temperature gradients.

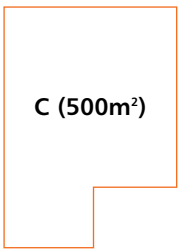
It is also necessary to note that the shape of the room can also affect the requirements for bay joints. The following guidelines highlight our recommendations with regards to placement of joints in relation to the shape of the room and area screeded.



No joint required as the proportional section is the main bay and the corner reflects into the main bay



Joint required as the corner reflects outwards



No joint required unless specified as a construction or day joint

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HOGAN Concrete

MASTERFLOW

Drying a Masterflow Screed

In common with other screeds it is very important that good curing conditions are provided as soon as a Masterflow screed has been laid. Adequate protection from rapid drying or draughts should be provided for the first 48-72 hours but thereafter the relative humidity of the building should be low to allow moisture release from the screed and facilitate drying. Failure to provide the desired conditions can prolong screed drying times considerably and may lead to delays in the construction schedule.

1. Screed Drying Time

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

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

Drying times can be improved by the provision of good ventilation, open windows and doors in good weather, removal of laitance as recommended, the use of dehumidiers and by force drying of the screed using underfloor heating.

2. Assisted Drying

Laitance removal: During the hardening process a friable film may form on the surface of a Masterflow screed slightly reducing the rate at which moisture can escape from the screed prolonging drying time. Removal of this film 1-3 weeks after application using the recommended equipment will open the surface assisting the screed to dry.

Dehumidifiers: Dehumidifiers can be used as early as 7 days after placing of Masterflow 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 whilst the warm air dries the screed. Failure to seal the water collection vessel will result in the moisture being recirculated delaying drying times.

3. Force Drying

Force drying of a Masterflow screed can be accomplished by commissioning of underfloor heating systems in accordance with BS1264: 2001 Part 4 clause 4.4 as early as 7 days after the screed has been placed.

Raise system water temperature in 4-5ºC increments from ambient to 20-25ºC, maintain for a minimum of 3 days and then gradually increase the temperature again in 4-5ºC increments too maximum operating temperature which should be maintained for a further 4 days (water temperature should not exceed 55ºC for a calcium sulphate screed), prior to returning to ambient temperature in readiness to receive floor finishes.

Please note that it maybe necessary to commission and run the U/F heating system for greater than the 7day commissioning period to enhance the drying. The time that is required for force drying is directly proportional to the age of the screed at the time of commissioning. In all cases it is important to remember that adequate ventilation is required to maintain good drying conditions.

The screed must be dry before application of the floor finish and failure to follow this procedure prior to the application of subsequent impermeable floor coverings such as vinyl is likely to lead to failure of the floor finish at a later date.

Subsequent to drying the screed by one of the above methods the residual moisture content must be determined using one of the approved test procedures to demonstrate suitability for acceptance of floor finishes (0.5% for impermeable finishes such as vinyl, and tiles and 1.0% for carpets)

Once proven to be dry it is important that the surface of a Masterflow screed is protected from accidental spillages and leaking fixings (central heating pipes etc). Should these occur the exposed screed will require further drying to attain the required moisture content and in the worst case, full saturation of the screed drying times will be as with freshly placed screed leading to possible delays in the construction schedule.

The information provided above is given in best faith as a guide to drying of Masterflow screeds and can be greatly influenced by individual site conditions.

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