

Heidelberg Materials EasyFlow

Technical data sheet

1.0 Method statement

1.1 Introduction

Heidelberg Materials Easyflow is a flowing, highly workable concrete, which does not require powerfloating to achieve a suitable finish on which to lay tiles etc.

1.2 Materials

Conventional concrete materials with liquid admixtures and polypropylene micro fibres. We can also incorporate macro polypropylene or steel structural fibres for replacement of steel mesh.

1.3 Minimum thickness

75mm.

1.4 Base preparation

Where applicable, the structure must include a damp proof membrane against rising damp which could be above or below the base slab. Note that damp concrete bases (e.g. with residual construction moisture) can result in considerably longer drying times for a concrete laid over that base. Consideration should therefore be given to the need for a damp proof membrane over the base. The designer and main contractor are responsible for determining the need for a damp proof membrane.

1.5 Unbonded on a membrane

Remove dust and debris immediately prior to concreting. Lay separating membrane as per manufacturer's instructions including minimum 50mm lapped and taped joints, and including a lap up the walls. The membrane can be of dpm grade if specified.

1.6 All constructions

Ensure that all gaps in the base (particularly on precast or beam and block floors) are sealed to prevent leakage of the EasyFlow material. Where used, polythene sheet must be laid flat on the base or insulation with no folds that might float into the concrete and promote cracking. If necessary, folds can be taped down onto the adjacent polythene sheet. If turned up at a wall or column, or if taped to a perimeter strip 'skirt', it must be ensured that there is sufficient slack in the construction to allow EasyFlow to reach the wall to the full depth of the floor.

1.7 Joints

Very large pours of unbonded concrete with a dimension exceeding 6m without a break (such as dividing walls), should have a bay joint of compressible material such as Flexcell or Ethafoam. Alternatively, a full depth saw cut might be made as soon as the concrete has hardened, to form a bay joint. With all concrete types it is necessary to form joints above the line of structural movement joints.

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1.8 Laying and finishing

EasyFlow should be accessed for consistence by carrying out a slump/flow test with the approved steel cone on a dry level plate.

Nominal Flow Rates

750-850mm.

Installing

Each load of EasyFlow must be placed and finished as soon as practical, it should not be placed and then finished at a later stage as this may lead to a poor finish on the surface. EasyFlow contains water and as such is susceptible to damage by frost attack. Winter working conditions are therefore similar to those for laying conventional concrete, i.e. work should cease at temperatures of 5°C and falling and may resume again at 2°C and rising. Providing internal temperatures are maintained as above, work may continue when the outside temperature is as low as 2°C. Work should also be halted in ambient temperatures of 30°C and over, as high temperatures can considerably affect hardening times and may also reduce final strengths.

Levels for the EasyFlow concrete are usually found by using a laser level set from a given datum. Levelling tripods are a useful tool for regulating the finished concrete. The concrete is finished by dappling the surface of the slurry using a floating T-bar to help remove any air bubbles, and then drawing (with a lighter dappling motion if preferred) the T-bar across the surface at 90° to the first pass. Dappling should be carried out as quickly as possible following placing but in any event no more than 15 minutes should elapse.

Checks must be carried out as laying proceeds to ensure that minimum thicknesses are being maintained. This may be done by means of a dipstick or, where levelling tripods are used, by measuring the distance to the base. Levels must be accurate to meet the requirements of the specification. The British Standard (BS8204: Part1: 2002) has three classes of Surface Regularity – SR1, SR2, and SR3. SR2 will be the normal requirement, but it is important to verify what is required, including the tolerance from datum. Where day joints are required, shuttering should be used to create a vertical edge. The next day's pour may be butted up against the first pour. The edge should be primed with Sikadur 32 once the shuttering has been removed before commencing the next pour.

1.9 Curing and trafficking

The area concreted should ideally be weather-tight (i.e. all roofs, windows and doors are covered). Draughts and strong sunlight must be avoided during the curing period or surface crazing and cracking may occur.

Immediately the finishing process has been completed, Proseal 90 (curing agent) should be sprayed over the surface in accordance with the manufacturer's instructions.

1.10 Protection

Do not cover the concrete, e.g. with polythene, as this is not necessary for curing and will only delay final drying of the concrete.

Access to the concrete should be restricted for at least 24 hours to prevent damage to the concrete surface. Thereafter light foot traffic should be possible. Normal site traffic and erection of non-load bearing partitions off the concrete is permitted 7 days after laying of the concrete. The finished surface should be protected, by suitable sheet material, in areas where it may be subjected to intensive or heavy use before the final floor finish is laid. The responsibility for this protection should be made the main contractor's.

1.11 Drying

Concrete drying time is 1mm/day up to 40mm thickness in warm and well-ventilated drying conditions. This will increase for concrete thicker than 40mm and in poor drying conditions.

In common with other concretes, it is very important that good drying conditions are provided from as soon as the concrete is laid. The concrete should be protected from very rapid drying or draughts during the first 3 days, but hereafter air humidity should be low (ideally 65% RH or below) so that moisture can be released. Good ventilation or the use of dehumidifiers can assist in reducing the ambient humidity.

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1.12 Floor finishes

It is the responsibility of the main contractor to check the moisture content or relative humidity of the base before floor finishes are laid. The concrete and base should be checked to establish that it meets the requirements of the flooring material.

The British Standard for testing a base to receive a resilient floor covering is to use a hair hydrometer to the method defined in BS8203: 2001. This provides a non destructive test method and will give reliable results on EasyFlow for Relative Humidity's near to 75% (which is generally the required limit for floor finishes). Above this level of moisture the hair hydrometer does not provide a meaningful reading. For correct results, the BS8023 method must be strictly adhered to, including the use of a correctly sized and insulated box sealed to the floor, a sufficiently long test for equilibrium to be reached and the use (where appropriate) of an impervious sheet around the instrument.

1.13 Priming

Where cement-based products are to be laid over the EasyFlow, such as levelling compounds or adhesives, the concrete must be dry and must be primed first with Sikafloor 155W or a primer recommended by the manufacture of the cement based product.

1.14 Testing

Bonded, partially bonded and unbonded concretes may be tested using the BRE Concrete Tester, to Category A or B as specified.

1.15 Repairs

Surface damage

Prime surface with Sikafloor 155W and use the appropriate levelling/repair material for the thickness required.

Cracks

If cracks do occur, due to physical damage or incorrect early conditions, then a suitable repair material should be used. Contact Heidelberg Materials for advice.

1.16 Site conditions

The performance and finish achieved by EasyFlow is dependent on the conditions in which it is installed and for a period thereafter. The following site conditions must be provided:

During the pour and for three days thereafter:

- The entire area where the concrete is to be installed must be frost-free and not subjected to temperatures of less than 2°C or more than 30°C.
- The surface of the concrete must be protected from water, severe flow of air and direct sunlight.
- The temperature of the subfloor should not differ from that of the environment by more than 5°C.
- The temperature of the concrete should not fall below 5°C.
- The relative humidity of the air above the concrete must not fall below 50% (this is most important for the first 48 hours).

During the drying period

A typical 40mm thick concrete can be expected to dry to 4.0% moisture content in 40 days under ideal conditions. This can however be greatly affected by actual conditions. After 70 hours the following should be observed.

The relative humidity should be kept below 70%. This is assisted by good ventilation.

Further information

Contact enquiries@uk.heidelbergmaterials.com

Further copies of this technical data sheet may be obtained from Heidelberg Materials UK