

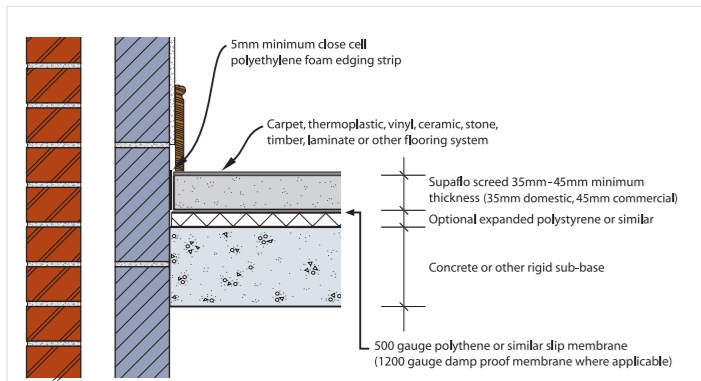


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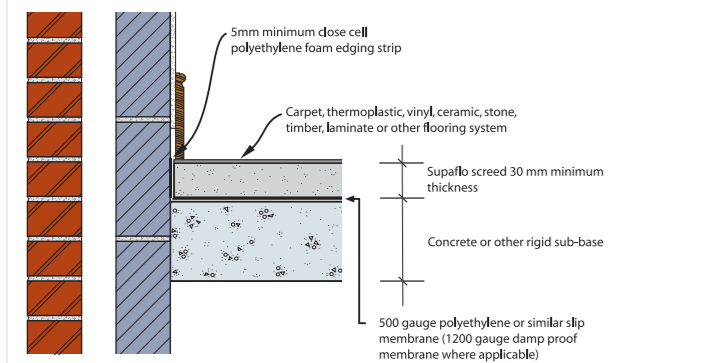
CEMEX Readymix produce an extensive range of high quality, ready to use screed products, covering a wide variety of applications including traditional and flowing methods. All of our products are designed with the final surface finish in mind and are tailored to meet the specific needs of our customers.



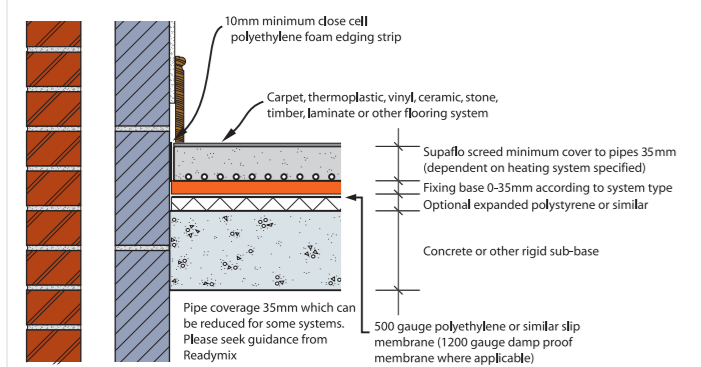
Supaflo® technical datasheet



Supaflo® floating floor with insulation



Supaflo® 'normal' or 'typical' unbonded



Supaflo® with underfloor heating

- All thicknesses are based on current BS 8204 Part1 recommendations.
- The use of an uncoupling layer should be considered for ceramic and natural stone flooring.

About CEMEX

CEMEX is a global supplier of building materials with leading positions in cement, ready-mixed concrete, mortar, screeds and aggregates.

We believe in building. And building a better future, for everyone.

We are committed to working collaboratively to provide innovative solutions that are more sustainable and socially responsible. All backed by industry-leading customer service.

To balance the needs of the built environment with our commitment to the natural environment.

For more information contact our Screed Helpline
Tel: 0800 667 827
E-mail: gb-enquiries@cemex.com

Or visit our website at
www.cemex.co.uk/screed

For more information on CEMEX's RIBA CPDs please contact our Screed Helpline
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The information contained in this publication was accurate at the time of production, however CEMEX reserves the right to introduce modifications or changes to detail at any time, as part of a policy of continuous improvement.

This paper is produced from pulp sourced from properly managed sustainable forests, is elemental chlorine free, uses up to 20% best white waste and is totally biodegradable.





SUPAFLO®

Introduction

- CEMEX Supaflo® is a self-compacting, pumpable screed based on a calcium sulfate binder.
- Supaflo® has been developed over many years and is at the forefront of screed technology.
- It provides significant benefits over traditional cementitious screed to the extent that in some European countries over 50% of all screeds used are of this type.

- Supaflo® is only supplied to approved contractors.

- The advantages over traditional floor screed include; speed of application – leading to reduction in labour cost and increased site/logistical efficiency, attainable accuracy of placement and finishing, reduction in thickness and elimination or substantial reduction of movement joints and elimination of curling and lifting at slab/bay joints and edges.

Composition

- Supaflo® is composed of precisely weighed batched calcium sulfate binder and selected aggregates.
- The formulation includes sophisticated admixtures, which enhance the plastic properties to aid ease of placing and surface finishing, as well as contributing to improved final hardened properties.

Manufacture

- In the UK there is a network of over 30 specialist production units, which can supply the vast majority of the country (however, please check local availability).
- The addition and mixing of all constituent materials is carried out under precisely controlled conditions in computer controlled plants to ensure complete dispersion of the mix components.

Compliance & testing

Supaflo® has been designed to comply with the requirements of:

- European Standard BS EN 13813. Screed material and floor screeds. Screed material. Properties and requirements.
- British Standard BS 8204-7. Screeds, bases and in situ flooring – part 7. Pumpable self-smoothing screeds. Code of practice.
- All constituent materials comply with their relevant British and/or European Standards.
- The calcium sulfate binder used in Supaflo® is produced under the stringently controlled conditions of ISO 9001.
- Every load of Supaflo® is inspected prior to delivery by CEMEX quality control staff. An acceptance test is also carried out by the approved installer before it is pumped, using flow table equipment conforming to the requirements of EN 13454-2.

Productivity

The table below compares typical daily on-site productivities of Supaflo® and conventional screeds. Using a flowing screed like Supaflo®, installation thicknesses can be reduced, the area installed in a day can be increased 5 to 10 times, surface regularity of SR2 or better can be achieved and the possibility of curling eliminated due to minimal differential shrinkage.

Screed type	Number of operatives	Volume / tonnage	Achievable installed area @ thickness per day
Site mixed cement: sand screed	2	11 tonnes	100m ² @ 60mm
Factory produced cement sand screed	2	15-18 tonnes	140-170m ² @ 60mm
Supaflo®	3-4	40m ³	1000m ² @ 40mm

Characteristics

- **Compaction** – The flow characteristics of Supaflo® mean that voids and poor compaction are virtually eliminated. The material self compacts as it flows in to position, this gives good resistance to abrasion and impact during the construction phase of the development when compared with conventional screeds. Supaflo® also complies with the Building Research Establishment Screed Test and indentation requirements of BS 8204.

In addition, as the material flows around and encapsulates underfloor heating pipes, it maximises even heat distribution and eliminates the voids that occur under heating pipes in semi-dry cement: sand screeds.

- **Shrinkage** – Supaflo® has virtually no drying shrinkage. Movement joints are rarely necessary however large the floor, as long as the aspect ratio does not exceed approximately 1:6 or a total area of about 2000m², or the floor contains thin sections or “dog leg” returns. This lack of shrinkage means that lifting and curling will not occur.

- **Fire protection** – Supaflo® is non-combustible as defined by BS EN 13501-1 and rated Class A1(f).
- **Acoustic performance** of Supaflo® is far superior to that of conventional screeds (part E regulations).
- **Effect of frost** – It is recommended that suitable precautions be taken against frost during cold weather conditions before final strength is achieved.
- **Durability** – Supaflo® as with virtually all screeds, is not a wearing surface and requires covering with a suitable surface finish.
- **Wet areas** – Supaflo® should not be used in areas where it will be continuously wet, or in regular contact with water. It is not recommended for use in communal showers, changing/washing areas of sports centres, abattoirs, external works, yards or similar.

Technical properties

Physical

Appearance	Light coloured fluid mortar	Compressive strength	30-35N/mm ²
Plastic density	2060-2200kg/m ³	Drying shrinkage	Less than 0.02%
Dry density	1950-2050kg/m ³	Drying time (at 20°C and 65%RH)	1 day/mm up to 40mm screed thickness, then 2 days/mm
Flow (DIN 1060 test)	230-270mm	Fire rating	Non combustible
BRE impact test	Less than 3mm	Thermal expansion coefficient	0.01 mm/mK
Flexural strength	5-7N/mm ²	pH	11-12

Performance

Setting time	Initial: >240 minutes	Drying time (at 20°C and 65%RH)	Up to 40mm: 1mm per day
	Final: >660 minutes		>40mm: 0.5mm per day
Time to light foot traffic	1 to 2 days	Heating	After 5 days
Loading	5 to 7 days	Workable life	Not less than 3 hours

Environmental

Recycled content	Binder: 98%	Carbon emissions	Binder: 10 to 20 kg/tonne
	Mortar: Up to 40%		Mortar: 20 to 40 kg/m ³
VOC	Zero	Recyclability	100%

Thickness and area

- The high flexural strength of Supaflo® and the lack of voids, means that in general it may be laid substantially thinner than conventional materials.
- For instance, in most cases 35mm of Supaflo® will replace 75mm of conventional screed.
- In many cases conventional material will have been specified originally on the basis of a 75mm thickness of cement sand screed.
- If it is replaced by Supaflo®, the screed thickness may be reduced and the overall thickness of 75mm made up with appropriate floor grade insulation material. This will provide economies in the usage of screed and will enhance the acoustic and thermal properties. Drying time will also be significantly reduced allowing the wearing surface to be laid sooner.

- The minimum depths of application should be as shown in the following table.

Minimum depth			
Bonded	25mm	Cover to conduits	30mm
Unbonded	30mm	Acoustic	80kg/m ² @ 40mm
Floating	35mm – domestic 40mm – commercial		
Maximum depth	80mm		

- For unbonded and floating floors it is recommended that Supaflo® is laid on a 500-gauge polyethylene slip membrane. When overlaying recently cast concrete a 1200 gauge polyethylene damp proof membrane should be used.

- Supaflo® may be laid in larger bays than traditional floor screeds. Where the approximate shape of the bay is square up to 2000m² can be achieved. Where the area becomes elongated and approaches an aspect ratio of 1:8, or when a right angled return is made, a movement joint should be considered. For floors containing under floor heating pipes an aspect ratio of 1:6 applies, together with a maximum bay size of 40m².

Site work

- Supaflo® is delivered to site ready to use and is then pumped directly to the point of use. This means that there is no site mixing, only placing.
- A typical pump output can cope with 150m horizontal distances and up to 60m vertically.
- In practice it takes about 25 ± 5 minutes to pump 5m³ of Supaflo®.

- It is preferable during construction to ensure a steady supply throughout the placement, with no break in continuity that exceeds about 1 hour.
- A temporary stop end should be formed where there is a break in supply of greater than 1 hour.
- Stop ends can be constructed using timber, scaffold battens, dense concrete blocks or other convenient temporary barriers. They should form a vertical barrier, which can be removed when the next section is placed.
- The stop end should either form a separate but continuous run, without mixing the two areas, or if appropriate use very firm and thorough mixing of the two, to achieve homogeneity.
- It is recommended that the Supaflo® system be treated as debonded, but bonded screeds may be used, and ducts, services and similar sealed against fluid loss in the flowing system.

- The material should be pump placed onto a prepared membrane, with minimum 5mm compressible plastic strips on all perimeter edges. For floors containing underfloor heating the perimeter edge strip should be a minimum 8mm thick. The membrane may be plastic with taped joints or building paper, either heat sealed or taped.

- Only contractors who are fully trained in its application should lay Supaflo®.

Post installation

Curing

- Care should be taken to avoid excessive water loss in the first 24 hours.
- Any unglazed or missing windows or doors should be temporarily blocked using plastic sheeting or similar to avoid excessive drying for the first 24 hours.
- After 48 hours, all windows and doors should be opened during the day and then closed for the night to allow circulation, or de-humidifiers may be used to force dry the material.

- Direct sun must also be avoided during early life.

- Supaflo® may be lightly trafficked after 1 to 2 days, depending on drying conditions.

Hardening and drying

- The most important consideration when covering Supaflo® is that the screed is sufficiently dry for the end application.
- For permeable coverings such as carpet, a moisture content of less than 1% is required.
- For moisture sensitive coverings, such as vinyl, a moisture content of less than 0.5% is required (this equates to a relative humidity of 75%, which is the term that is usually specified).
- Significant reductions in screed thickness can be achieved by using Supaflo® over conventional screeds in many construction applications, and this in turn will reduce overall drying times.

- Typically, for 2 days after installation, the screeded rooms must be well ventilated during the day, with doors and windows kept open as this will ensure quick drying and rapid strength development.
- Optimum drying time can only take place when warm, moist air is exchanged with cold, dry air, which can absorb moisture again with a rise in temperature.
- Forced air movement using fans can aid the drying process.
- At night when temperatures drop, all doors and windows must be shut to prevent condensation.
- This procedure must be carried out until the screed has dried completely.
- Underfloor heating may be used 5 days after placing the screed, however the temperature should be increased from ambient by no more than 5°C a day until full operating temperature is reached.

Application of floor covering

- If the floor covering is to be applied directly to the screed then the surface may require sanding to remove surface laitance.
- This is usually carried out at between 3-7 days, using a rotary floor sander with a medium grit sanding disk or other suitable means of removal.
- The surface must be free from the ground material before applying the floor finish.
- When bonded floor coverings are applied directly onto Supaflo® it is necessary to prime the screed to regulate suction over the entire area.
- The type of primer used will depend on the chemical make up of the adhesive. In situations where calcium sulfate based adhesives are used, an acrylic, epoxy or similar primer should be applied between the two materials.
- Cementitious adhesives will require the two materials to be separated by an impermeable layer, which would be a polymeric sealer.

Contractors

- CEMEX will only supply Supaflo® to approved contractors.
- CEMEX can either provide the necessary training or can recommend an approved contractor.
- Approved contractors take responsibility for sub-base approval and preparation of your site sub-base, design and provision of all movement joint detailing, including supply of materials, provision and installation of debonding membranes etc.

Yield

The table below shows the yield per cubic metre for typical application thickness.

Thickness (mm)	Area/m ³ (m ²)
30	33
35	29
40	25
45	22