TECFLOOR® EC 500

High Performance, Epoxy Resin Based Floor Coating

THERMAX

TECFLOOR® EC 500 is a solvent free system based on epoxy resins and curing agents specially selected for their ability to withstand chemical attack. The system consists of pre-weighed base & hardener components all of which contain reactive elements that are essential to the installation of the system.

A slip resistant texture can be provided by the use of one of a range of Floor Anti slip Grains which have been carefully graded to ensure an even texture.

Uses

TECFLOOR® EC 500 provides a hard wearing, chemical & abrasion resistant floor finish. It is ideally suited for use in wet areas where a high degree of resistance to chemicals, oils and grease is required such as:

- Dairies
- Soft drinks production facilities
- Chemical manufacturing plants
- Car parks and workshops

Benefits

- Durable, low maintenance costs
- Proven against a wide range of industrial chemicals
- Solvent-free: No odor during application
- Slip-resistant: Different textures available to suit conditions to avoid slipping
- Liquid applied providing complete protection
- Available in a wide range of colours to improve the working environment and identify slip hazard areas

Technical Support

Thermax offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance.

Specification

The epoxy resin floor coating shall be TECFLOOR® EC 500 from Thermax. The total dry film thickness of the coating shall be a minimum of 300 microns and shall have a compressive strength of 70 N/mm^2, flexural strength of 40 N/mm^2 and tensile strength of 20 N/mm^2. The floor shall be prepared and the coating mixed and applied in accordance with the manufacturer's current data sheet.

Design Criteria

TECFLOOR® EC 500 is applied as a floor coating system comprising of two top coats (depending on the substrate conditions a primer might be required), each top coat to be a minimum of 200 microns thick. To provide a slip resistant texture, the first top coat can be dressed with Floor Anti-slip Grains.

Properties

The following values were obtained when tested at 20°C and 30°C.

	@ 20ºC	**@ 30ºC**
Mixed Density	Approx. 1.4 gm/cc	
Pot Life	40 minutes	30 minutes
Tack Free Time	6-12 hours	5-7 hours
Maximum Time between Coats	24-30 hours	10-12 hours
Light Traffic Use After	24 hours	18 hours
Full Traffic Use After	48 hours	24 hours
Resistance to Chemical Spillage	7 days	5 days

Compressive Strength	70 N/mm^2
Flexural Strength	40 N/mm^2
Tensile Strength	20 N/mm^2
Water Absorption (ASTM C 413: 1996)	0.06%
Shore D Hardness (ASTM D 2240)	85
Adhesion Bond Strength (ASTM D 4541)	>2 N/mm^2

Chemical Resistance

Fully cured TECFLOOR® EC 500 samples have been tested in a wide range of aggressive chemicals commonly found in industrial environments. Tests were performed in accordance to ASTM D 543 standards over 168 hours (7 days).

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Acids

Lactic Acid, 10%	Resistant
Citric Acid, 10%	Resistant
Acetic Acid, 10%	Resistant
Hydrochloric Acid, 50%	Resistant
Sulphuric Acid, 50%	Resistant
Nitric Acid, 25%	Resistant

Alkalis

Sodium Hydroxide, 50%	Resistant
Ammonia (0.880), 10%	Resistant

Instructions for Use

Surface Preparation

The long term durability of any resin floor system is determined by the adhesive bond achieved between the flooring material and the substrate. It is most important therefore that substrates are correctly prepared prior to application.

New Concrete Floors

These should normally have been placed for at least 28 days and have a moisture content of less than 5%. Floors should be sound and free from contamination such as oil and grease, mortar and paint splashes or curing compound residues. Excessive laitance can be removed by the use of mechanical methods. Dust and other debris should then be removed by vacuum cleaning.

Old Concrete Floors

A sound, clean substrate is essential to achieve maximum adhesion. As for new concrete floors dry removal of laitance by use of mechanical methods is preferable. Oil and grease penetration should be removed by the use of a proprietary chemical degreaser or by hot compressed air treatment.

Any damaged areas or surface irregularities should be repaired using epoxy based repair mortar.

Priming

Priming is not normally required provided the substrate is sound, untreated and good quality nonporous concrete. If any doubts exist of the quality of the concrete, or if it is porous it should be primed with TECFLOOR® PR. Contact the local Thermax office for advice.

TECFLOOR® PR should be mixed in the proportions supplied. Add the entire contents of the hardener can to the base can. When thoroughly mixed, preferably using a slow speed drill and paddle, the primer should be applied in a thin continuous film, using rollers or stiff brushes. Work the primer well in to the surface of the concrete taking care to avoid ponding or over application.

The primer should be left to achieve a tack-free condition before applying the top coat. A second coat of primer may be required if the substrate is excessively porous.

Mixing the Coating

The base and hardener components of TECFLOOR® EC 500 must be thoroughly stirred before the two are mixed together. The entire contents of the hardener container should be poured into the base container and the two materials mixed thoroughly, for at least 3 minutes. The use of a heavy-duty slow speed, flameproof or air driven drill fitted with a Mixing Paddle is desirable. Mix these components in the quantities supplied taking care to ensure all containers are scraped clean. Do not add solvent thinners at any time.

Standard Application

The first coat of TECFLOOR® EC 500 must be applied using a good quality medium haired pile roller, suitable for epoxy application, or squeegee to achieve a continuous coating. Ensure that loose hairs on the roller are removed before use. A minimum film thickness of 200 microns should be applied. This can be increased where specifications demand. When the base coat has reached initial cure (12 hours @ 20°C or 5 hours at 35°C). The top coat can be applied by medium haired roller, at minimum film thickness of 200 microns. Care should be taken to ensure that a continuous film is achieved.

Anti-slip Application

If a slip resistant texture is required, the base coat shall be applied as per the standard application, but at a minimum film thickness of 250 microns. The base coat should then be dressed with the chosen Floor Antislip Grain. This should be done as soon as possible after laying. The recommended procedure

is to completely blind the base coat i.e. apply excess dressing aggregate to completely obliterate the base coating.

Alternatively, the Floor Anti-slip Grains can be broadcast in alight random dressing to provide a less dense finish.

When the base coat has reached initial cure (12 hours @ 20°C or 5 hours at 35°C), the excess aggregate should be vacuum cleaned from the surface.

The top coat can now be applied by medium haired roller, at a rate of 4.0m^2/litre. Care should be taken to ensure that a continuous film is achieved and the rough surface, caused by the aggregate, is completely sealed. This top coat must be applied within 36 hours @ 20°C (15 hours @ 35°C) of the application of the first coat.

Expansion joints Expansion joints in the existing substrate must be retained and continued through the TECFLOOR® EC 500 topping. Thermax have range of joints sealants specially designed for flooring, contact local Thermax office for advice.

Cleaning

Tools and equipment should be cleaned with Cleaning Sol immediately after use. Spillages should be absorbed with sand or sawdust and disposed of in accordance all with local regulations.

Limitations

- TECFLOOR® EC 500 should not be applied on to surfaces known to, or likely to suffer from, rising dampness, potential osmosis problems or have a relative humidity greater than 75% as measured in accordance with BS 8203 Appendix A or by Protimeter thermo hygrometer.
- Thermax does not recommend acid etching as a method of floor preparation. If used, the method should be approved by the project consultant.
- In common with all epoxy materials, some slight shade changes may be experienced over the long term when placed in adverse exposure conditions. Any such change in shade is not regarded as being detrimental to performance.

Shelf Life

TECFLOOR® EC 500 has a shelf life of 12 months when stored in warehouse conditions below 35°C in the original, unopened packs.

Storage

Storage Conditions

Store under warehouse conditions, below 35°C in the original, unopened packs. For further information, refer to the Product Material Safety Data Sheet.

Cleaning and Disposal

Spillages of component products should be absorbed on to earth, sand or other inert material and transferred to a suitable vessel. Disposal of such spillages or empty packing should be in accordance with local waste disposal regulations.

Packing

TECFLOOR® PR: 1 & 4 ltr packs
TECFLOOR® EC 500: 4.5 ltr packs
Floor Anti-slip Grains: 20 kg bags
Cleaning Solution: 5 & 20 ltr containers

Standard Coverage

TECFLOOR® PR: 5.5 - 6.5 m^2/ltr
TECFLOOR® EC 500: 22.5 m^2/pack @ 200 microns WFT per coat
(Two coats application are recommended)

Coverage with Anti-slip Grain (approx. for medium texture)

TECFLOOR® PR: 5.5 - 6.5 m^2/ltr
TECFLOOR® EC 500 (Base Coat): 4.0 m^2/ltr @ 250 microns WFT
Floor Grain No 2: 1.25 - 3 m^2/kg
TECFLOOR® EC 500 (Top Coat): 4.0 m^2 /ltr

Note: Coverage figures given are theoretical - due to wastage factors and the variety and nature of substrates, practical coverage figures may be reduced, this will vary with site and application conditions.

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