a.b.e.® Construction Chemicals

# METHODOLOGY
# Floor joint repairs using epidermix 324

## CONCRETE

The surface has to be clean, sound, dry, free of oil and deleterious matter prior to applying the system.
See datasheet "Preparation of Surfaces".

## PREAMBLE

- Saw cut the spalled edge of the concrete a minimum of 75mm back from the joint and the depth to be down to sound concrete, this applies to either side of the joint.
- These dimensions only apply provided that the cut is beyond the spalled area , else increase the dimensions until sound and clean concrete is obtained.
- The saw cut which is perpendicular to the floor surface is important in order that the repair mortar applied is never feather edged.
- These surfaces must be roughened in order to remove the smooth finish resulting from the cutting process.
- Any unsound concrete below this must be removed i.e. any cracks etc will reflect through the repair material

## SURFACE PREPARATION

All surfaces against which **epidermix 324** will come in contact must be CLEAN, SOUND and DRY.

Concrete shall be free of laitance, dust, fractured aggregate, oil, grease and foreign matter. For maximum adhesion, surface should be scabbled to expose main aggregate.

Steel must be free of oil, grease, old paint, other foreign matter, millscale and rust. For maximum adhesion, surface should be abrasive blast cleaned.

Dryness of concrete should be proved by the "plastic sheet" test. There should be no condensate on the underside of a sheet fixed in contact overnight nor should the concrete show a colour change. See "Preparation of Surfaces" specification sheet for details of test.

## MIXING

Premix the silica aggregate to obtain even distribution of the various gradings.

Add the entire contents of the Activator tin to the Base component and, without splashing, stir with a flat paddle until an even, streak free mixture results.

This takes at least FIVE MINUTES. Once liquid components have been thoroughly mixed, the aggregate may be added.

When using a mechanical mixer, place mixed liquid in the pan and slowly add premixed aggregate, mixing until an evenly coated, wetted mix results. Use this procedure also if manual mixing is carried out in a drum. All lumps must be broken down and an evenly wetted mass obtained.

## APPLICATION

If the unit to be filled does not form a natural shutter, a tight shutter will have to be provided to retain the epoxy mortar until it has set. Release from the shutter may be obtained through the use of conventional mould oils but a better finish will be obtained by facing the shutter with plastic sheeting. Remove all wrinkles in the plastic to prevent transfer into the epoxy face.

Operations must be so designed that there is no chance of air entrapment in the mortar. Pouring must be done from one point, or side and must continue from there until the section is completely filled. A maximum thickness of 25mm to be adhered to, deeper sections may be carried out in a number of lifts. This is done as soon as the material has lost its exotherm before following with the subsequent layers. Should a layer be applied the following day, then score the surface of the previous layer to provide a good anchor profile.

The volume of **epidermix 324** that can be placed in one lift depends on several factors:

- The ambient conditions prevailing in the immediate vicinity of the repair;
- The heat absorbing properties of the shuttering and the substrate;
- The cross sectional area of the repair;
- The area of surface contact;
- The ease of access for placing the mortar.

As a rough guide, a single placing should not involve more than about 6 x 5 litre kits of **epidermix 324** (i.e. about 30 lt. mortar). Shuttering may be stripped as soon as the last lift has set. If appearance is important, rub down any nibs immediately, using a carborundum stone.

## PROPERTIES DURING APPLICATION

**Application by: Pouring**

| | |
|---|---|
| Work life 5 litre kit of mortar: | 15°C – 60 mins<br>20°C – 45 mins<br>25°C – 30 mins<br>30°C – 22 mins<br>35°C –15 mins |
| Volume solids: | 100 % |
| Curing time @ 25°C: | Touch dry: 8 hours<br>Practical cure: 24 hours<br>Full cure: 7 days |
| Application temperature range: | 10°C to 40°C |
| Application rate: | At 5mm thickness, 5 litre kit covers 1 m² – with no wastage allowance |
| Equipment clean-up: | **abe® super brush cleaner** |

## SAFETY PRECAUTIONS

Uncured **epidermix 324** contains diethylene triamine which is toxic. Prolonged skin contact can result in dermatitic reaction. Always ventilate a working area very well during application and curing.

Always wear gloves when working with the material and avoid excessive inhalation and skin contact. If material is splashed in the eye, wash with copious quantities of clean water and seek medical advice.

## JOINT

The joint is to be cut totally through the repair mortar and reamed out to roughen the edges to a width of 10mm.

The surface is to primed with **epidermix 326** and the sealant **dura.®kol G HM** to be applied on top of a compressible joint filler like ethocord. The sealant when applied should be slightly recessed in the joint and not stand proud of the surface.

**Preparation Of Joint Surfaces**

Thorough preparation of joints is essential if a satisfactory seal is to be obtained. For concrete surface all traces of dust, laitance, mould oil, any previous sealant and all other foreign material must be removed by mechanical grinding, followed by blowing out with dry oil-free compressed air. All surfaces must be completely dry. See datasheet "Preparation of Surfaces"

**Priming Of Joints**

Porous surfaces must be fully primed with **epidermix 326** (twin pack) brushed well into the faces of the joint, to ensure complete coverage. The primer film should be allowed to lose its solvent (approximately 30 minutes drying) before sealant is applied. PRIMER OPEN TIME IS 4 HOURS.

If however, the primer is allowed to dry longer than 6 hours, then the surface must be reground and reprimed.

Non-porous surfaces must be primed with **epidermix 391**. This is a one-pack material which is brushed on the surface in the normal way. The primer film should be allowed to lose its solvent (approximately 30 minutes drying time) before sealant is applied. It is usual to allow one 250ml pack of primer per 6 litre sealant.

## BACK-UP MATERIAL

Suitable back-up material must be used to adjust sealant depth in the joint to comply with the joint geometry cited overleaf. Backing cord is a self releasing material, but if soft-board or cork is used as the joint filler, a plastic strip bondbreaker must be placed on the filler surface before sealant is applied. Under a pressure head of liquid, backing cord should be at least 2,5 times greater in diameter than the width of the joint slot.

## MIXING OF SEALANT

**dura.®kol G HM** is supplied in a single container. The polysulphide (Base) is covered by a cellophane sheet to protect the traveller plate which is provided to ease filling of sealant guns. On top of the traveller plate is the plastic container of activator paste.

To prepare the material for use, remove the Activator, traveller plate and cellophane sheet. Remove any Base adhering to the cellophane and replace the Base in the container.

Remove the entire Activator paste from its container and add to the Base. Mix the material thoroughly, preferably with a slow speed drill (not in excess of 250 rpm) fitted with a suitable paddle, until an even colour, free form streaks, is obtained.

Periodically scrape the sides and base of the container with a spatula or small trowel to ensure complete blending of components. To obtain a complete mix will take FIVE TO TEN MINUTES of mechanical mixing. If hand mixing is to be carried out, a minimum period of 15 minutes of vigorous mixing is required.

Caution: If material is not mixed thoroughly, its performances will be impaired.

## APPLICATION

Application to primed surfaces can be by hand or pressure-operated gun or by trowel or by pouring, according to the cross-section of the joint to be filled. It is essential to ensure complete contact between the sealant and the joint surfaces.

**Protection Of Adjacent Surfaces**

Masking tape applied to areas adjacent to joint will protect them from smearing and enable the joints to be finished to a neat line. The tape should be applied after the joint has been prepared, prior to any priming or sealing operation and removed after all finishing and tooling operations have been completed, but before the sealant has cured.

**Tooling**

Tooling of sealant is necessary for complete air-free filling of voids and to assist in making contact by wetting the surfaces to which the sealant is applied.

The surfaces of the joint should be smoothed with a clean knife or spatula which may be moistened with a little clean water or water containing a little liquid detergent.

**Joint Geometry**

Minimum width of any joint must be 6mm depending on the movement accommadation factor (MAF). The width of joint to be sealed should be four times that of calculated movement. For joints up to 12mm in width the sealant depth equals the joint width ; for joints greater than 12mm in width , the sealant depth is half the width. The movement must never exceed 25 % of neutral width of joint.

**The joint faces must be parallel.**

Clean hands well before smoking or eating. If material is splashed in the eye, wash well with copious quantities of clean water and seek medical attention.

CURED **dura.®kol G HM** IS NON-TOXIC

**Properties During Application**

Application by: Extrusion gun or spatula

| | |
|---|---|
| Work life @ 25°C: | 2 – 8 hours |
| Slump resistance: | Shows no slump in joints of 38mm x 19mm cross section |
| Cure time @ 25°C to 35°C: | Tack free: 72 hrs<br>Full cure: 7 days |
| Application temperature range: | 4°C to 35°C |
| Fire resistance of wet film: | Non-flammable |
| Equipment clean-up: | **abe® super brush cleaner** |

## SAFETY PRECAUTION

Wet **dura.®kol G** is toxic. Always ventilate a working area very well during application and drying to remove fumes. Always wear gloves when working with the material and avoid excessive inhalation and skin contact.

## IMPORTANT NOTE

This datasheet is issued as a guide to the use of the product(s) concerned. Whilst **a.b.e.® Construction Chemicals** endeavours to ensure that any advice, recommendation, specification or information is accurate and correct, the company cannot – because **a.b.e.®** has no direct or continuous control over where and how **a.b.e.®** products are applied – accept any liability either directly or indirectly arising from the use of **a.b.e.®** products, whether or not in accordance with any advice, specification, recommendation, or information given by the company.

## FURTHER INFORMATION

Where other products are to be used in conjunction with this material, the relevant technical datasheets should be consulted to determine total requirements. **a.b.e.® Construction Chemicals** has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.

## FLOOR JOINT REPAIRS