



Chem Coats (Pvt) Ltd.

ChemBond 344

Structural wet-to-dry concrete adhesive

DESCRIPTION

ChemBond 344 is a two-component, solvent-free, polysulphide modified epoxy adhesive.

USES

Bonding fresh (plastic) concrete to existing concrete, plaster to brickwork. Can be used to provide a damp-proof barrier within the concrete matrix. If applied onto reinforcing steel **ChemBond 344** will cause no loss of concrete/steel bond strength.

FEATURES AND BENEFITS

- May be used in structural situations.
- Excellent bond to damp or dry surfaces.
- High ultimate tensile strengths.
- High ultimate lap shear strengths.
- Bonds to rock.

SURFACE PREPARATION

The existing concrete surfaces must be clean and mechanically sound. They must be free of dust, laitance and any foreign matter as well as cracked or loose stone.

Maximum bond strength is only achieved if main aggregate of existing concrete is exposed. This may be done by scabbling, grinding, abrasive blasting or manual chipping. All cracked or loose aggregate must be removed.

In repairing spalls all loose and friable material must be broken away. If damage has exposed reinforcing, this should be undercut and hammered back into position, if so directed by the engineer. If exposed reinforcing has rusted badly it should be cleaned by abrasive blasting.

The existing concrete surface should ideally be dry. **ChemBond 344** will bond to green concrete. It will not, however, penetrate free water on the surface of any concrete.

BONDING / PRIMING

Self bonding.

MIXING

Stir well the contents of both containers individually and ideally use a can opener to remove the lip from both cans. Add the entire contents of the activator tin to the base material and stir with a flat paddle until an even, streak-free, grey mixture results. This takes at least five minutes.

If only a small quantity of material is required, pre-stir contents of each can use separate clean paddles. Remove two volumes of base and one volume of activator into a clean, separate container and mix together, to obtain an even grey colour. If the ambient temperature is between 10 - 15° C pre-condition the unopened cans by standing them in the sun or in warm water until the temperature of the contents is approximately 20° C. This makes mixing and spreading much easier.



TYPICAL PHYSICAL PROPERTIES OF WET MATERIAL	
Density (mixed)	1.5 g/cm ³
Flash point	> 120° C
Dilution	Do not dilute
Consistency	Semi-fluid paste
Toxicity	Uncured material toxic

TYPICAL PHYSICAL PROPERTIES DURING APPLICATION	
Application temp range	10° C - 40° C
Recommended wet film thickness	500 - 600 µm - thicker if the surface is rough and has exposed aggregate
Volume solids	100%
Practical cure	Bond develops strength at a greater rate than concrete
Full cure	14 days
Fire resistance of wet material	Will not support combustion

TYPICAL PHYSICAL PROPERTIES OF CURED FILM	
Toxicity	Cured material is non toxic
Maximum service temperature	90° C
Compressive strength	100 MPa
Tensile strength	18 MPa
Bond strength in concrete (ASTM C882-87)	Not <10.3 MPa after a 14 day moist cure period
Steel/steel lap shear	8 MPa

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	Pot life (minutes)				
	15° C	20° C	25° C	30° C	35° C
1 l kit	50	37	25	18	12
2 l kit	40	30	20	15	10

COVERAGE

1.7 - 2 m²/l.

APPLICATION

ChemBond 344 should be spread onto the surface as soon as possible after complete mixing. Apply the compound in a thin rough layer and only once the can is emptied should an attempt be made to spread to working thickness.

ChemBond 344 is best spread by means of a stiff bristle brush such as a kitchen scrubbing brush. A paint brush with bristles shortened by 50% may also be used.

On large areas use of a stiff-bristled yard broom is feasible.

Compound should be spread at a rate of about 1.7 – 2 m²/litre to give a film thickness of some 500 - 600 µm. Coverage is very much controlled by texture of the surface.

The plastic concrete mix should be of as low a slump as feasible and **may be cast into the adhesive layer up to 4 hours after mixing**. If the original film has over-cured it must be roughened before application of the new layer of epoxy. Where a featheredge is needed, the aggregate size of the concrete must be adjusted accordingly.

VIBRATION OF NEW CONCRETE

Once the plastic concrete has been placed it should be punned with a steel or wooden rod to force main aggregate into the adhesive layer. When this has been done, vibration may be commenced. The vibrator head must be kept away from the adhesive layer. Poker vibrators have been found to give better results than vibrators clamped onto the shuttering.

CURING OF NEW CONCRETE

Care must be taken to see that the new concrete is adequately cured as is required in good concreting practice. This curing is particularly vital where thin concrete layers are involved and should be continued for at least 5-7 days.

See **ChemCure** range of curing agents.

CLEANING

Tools, brushes and mixing equipment should be cleaned immediately after use and before material has set with **Chem Coats super brush cleaner** followed by washing with soap and water.

PROTECTION ON COMPLETION

Not required.

TEMPERATURE AND RELATIVE HUMIDITY

Application temperature range:
+10°C - +40°C

MODEL SPECIFICATION

Two-component, epoxy compound for structural wet-to-dry concrete adhesive applications.

The adhesive will be **ChemBond 344**, a two-component, epoxy compound applied in accordance with the recommendations of **Chem Coats Construction Chemicals**. The adhesive will have bond shear strength of not less than 10.3 MPa in accordance with ASTM C882-87.

PACKAGING

ChemBond 344 is supplied in 1 l and 2 l kits.

HANDLING & STORAGE

This product has a shelf life of 12 months if kept in a dry cool place in the original packaging. In more extreme conditions this period might be shortened.

HEALTH & SAFETY

Wet **ChemBond 344** is toxic and flammable. Ensure the working area is well ventilated during application and drying. Avoid flames in vicinity. Always wear gloves and eye protection when working with the material and avoid excessive inhalation and skin contact. If material is splashed into the eye, wash with plenty of clean water and seek medical attention.

Cured **ChemBond 344** is inert and harmless.

IMPORTANT NOTE

The information given in this data sheet is based on current development work and many years of field experience. Whilst every effort is made to ensure that the information is reliable, we cannot accept responsibility for any work carried out with our materials as we have no controls over methods of applications, site conditions etc. In view of the continuing research and development being undertaken in our laboratories we advise customers in their own interest to ensure that this data sheet has not been superseded by a more up-to-date publication. All products are sold subject to our standard conditions of sale which are available on request. Field services, where provided, does not constitute supervisory responsibility. For additional information, please contact your local **Chem Coat's** representative.

RANGE OF PRODUCTS

<u>WATERPROOFING SYSTEMS</u> <u>INDUSTRIAL FLOOR SURFACES</u> <u>PROTECTIVE COATINGS</u>	<u>PREPACKED REPAIR MORTARS</u> <u>CEMENTITIOUS & EPOXY GROUTS</u> <u>CONCRETE ADMIXTURES</u>	<u>SEALANTS</u> <u>CRACK INJECTION</u> <u>CONCRETE ADHESIVE</u>
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