Concrete Works
Construction Chemicals
Private Limited

CWC® Smart Bond EP

Epoxy Resin Concrete Bonding Agent

Description

Smart Bond EP is based on solvent-free epoxy resins containing pigments and fine fillers. It is supplied as a two-component material in pre-weighed quantities ready for on-site mixing and use.

Pack –A: Resin (white), Pack –B: Hardener (black)
Smart Bond EP conforms to ASTM C 881 Grade 3 Type II.

Advantages:

SMART BOND EP may also be used as part of a repair system where a substrate/repair barrier is required or where the substrate is likely to remain permanently damp or wet.
Can be applied on to dry or damp substrates

- Exhibits high mechanical strength
- Positive adhesion - exceeds that of the tensile strength of the host concrete
- Slow cure allows time to erect steel reinforcement and formwork
- Solvent-free - can be used in enclosed locations

USES

For bonding fresh wet cementitious materials to existing cementitious surfaces. For use on horizontal surfaces or on vertical surfaces where mortar or concrete can be supported by formwork. The long 'open' life makes it suitable for use with formwork or where additional steel reinforcement has to be fitted. The product is ideal for roads, bridges, pavements, loading bays and factories, and for bonded or granolithic floor toppings. SMART BOND EP is equally suited to internal and external applications.

Indicative characteristics

Appearance of cured film	Grey
Specific Gravity at 27^{o}C	1.3 ±0.1
Solid content, % (w/w)	>98
Mixing Ratio, Pack –A:B (by wt.)	2:1
Pot life, minutes at 27^{o}C, 100 g mass	>40
Application Temperature, ^{o}C	5 to 40
Coverage (Theoretical)	0.3-0.8 kg /m2 per coat depending on surface profile
Initial cure at 270C, for pedestrian traffic	After 24hours
Slant- Shear Bond Strength, at 14 days, N/mm2	12 (minimum) or concrete failure
Compressive Strength, 14 days, MPa	>70

Standards compliance

ASTM C881: Type II, grade 3 class E & F.

Instructions for use

Preparation

Clean all surfaces and remove any dust, unsound material, plaster, oil, paint, grease, corrosion deposits or algae. Roughen the surfaces, remove any laitance and expose the aggregate by light scrabbling or grit-blasting.
Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. The effectiveness of decontamination and soundness of the substrate should then be assessed by a pull-off test.

Mixing

Any steel reinforcement and formwork should be prepared, cut to size and shape, and made ready for assembly before mixing commences.
Care should be taken to ensure that SMARTBOND EP is thoroughly mixed. The 'hardener' and 'base' components should be stirred separately before mixing to disperse any settlement.
The entire contents of the 'hardener' tin should then be poured into the 'base' tin and the two materials thoroughly mixed using a suitable slow-speed drill and mixing paddle for 2 minutes until a fully uniform colour is obtained. The sides of the tin should then be scraped and mixing should continue for a further 2 minutes.

Application

SMARTBOND EP should be applied as soon as the mixing process has been completed. It should be brush or roller applied to the prepared surfaces, being sure to achieve an unbroken coating across the entire substrate.
SMARTBOND EP should be tacky before the new concrete, screed or mortar is placed.
The maximum overlay times (see Properties) should also be carefully observed. Failure to apply the new concrete, screed or mortar within the maximum overcoating time will result in SMARTBOND EP becoming 'hard', thus creating a slip plane rather than a bonding action.

If the maximum overlay time is missed, then the SMARTBOND EP must be mechanically removed and a fresh application made. The concrete, screed or mortar should then be applied in accordance with the overcoating minimum and maximum stated above.
As soon as the SMARTBOND EP has been applied, any required steel reinforcement and/or formwork should be erected and fixed securely in place.

Cleaning

SMARTBOND EP should be removed from tools, equipment and mixers with CWC Solvent 102 immediately after use. Hardened material can only be removed mechanically.
High temperature working
Whilst the performance properties of SMARTBOND EP at elevated temperatures are assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35ºC, the following guidelines are adopted as a prudent working regime:

- Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.
- Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.
- Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight.
- Have a ready supply of CWC Solvent available for immediate cleaning of tools after use.

Safety Precautions

Wear hand gloves, safety shoes and safety goggles while using and handling the product.
Before use, refer to the Material Safety Data Sheet.
The MSDS is available on www.cwcchemicals.com

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Estimating Supply

SMARTBOND EP : 1 and 4 litre packs
CWC Solvent 102 : 5 litre cans

Coverage

SMARTBOND EP : 3.5 - 4.0 m^2/litre

Note: The coverage figures for SMARTBOND EP products are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Storage

Shelf life

SMARTBOND EP has a shelf life of 6 months. CWC Solvent 102 has a shelf life of 24 months if kept in a dry store in the original unopened packs.

Storage conditions

Store in dry conditions in the original unopened packs. If stored at high temperatures, the shelf life may be reduced.

Limitations

- SMARTBOND EP should not be applied when the temperature is below 5ºC or is 5ºC and falling.

Regional Offices

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