

Condur® EA1/SB

STRUCTURAL SEGMENTAL BRIDGE ADHESIVE

DESCRIPTION

Condur EA1/SB is a two component, thixotropic epoxy structural adhesive. **Condur EA1/SB** is specifically manufactured for use as a segmental bridge adhesive. It cures with minimal shrinkage at temperatures above 5°C to a very strong, dense solid material. The mixed material is applied to a suitably prepared surface and quickly cures to form a complete impermeable adhesive unaffected by many forms of chemical attack. It is supplied as a two pack colour coded material in pre-weighed quantities ready for on-site mixing and use. It conforms to ASTM, FIP & BS standards.

Condur EA1/SB meets the requirements for segmental adhesives and conforms to ASTM C881-78 VI Grade III Class D, E & F.

USES & ADVANTAGES

Condur EA1/SB is used for segmental bridge construction and bonding precast concrete components.

Advantages include:-

- Early development of initial hardness, minimizes maintenance disruption.
- Pre-weighed quality controlled materials ensure consistency and reduce risk of site errors.
- Two pack colour coding gives visual check on correct mixing.
- High early strength without shrinkage.
- Unaffected by a wide range of acids, alkalis and industrial chemicals.
- 3 to 4 times stronger than typical concrete.
- Excellent resistance to abrasion and impact.
- Natural grey colour sympathetic to aesthetic requirements.
- Two grades pourable & paste.
- Non sag. (paste), Easy to apply.
- Suitable for dry and damp (wet) surface moisture tolerant.
- Solvent free.
- Lubricates surface.
- Tailor made formulas.
- High strength and modulus of elasticity.

PROPERTIES

Appearance: Grey, when mixed (may yellow and/or darken when exposed to sunlight or certain chemicals)

Initial Hardness: 4 hours.

Full Cure: 7 days, below 20°C the curing time will be increased.

Setting Time (3mm): Approx. >60 min. (+35°C)

Condur EA1/SB	Paste	Pourable
Specific Gravity: (Mixed Approx.; kg/ltr)	1.75-1.85	1.65-1.75
Compressive Strength: ASTM D695 (N/mm ²)	70-80	70-80
Flexural Strength: ASTM C580 (N/mm ²)	30-40	30-40
Tensile Bending Strength: FIP 5.14 (N/mm ²)	Concrete failure	Concrete Failure

Bond Strength to Concrete: ≥2 Mpa (both grades)
(Concrete Failure)

Bond Strength to Steel: 20 Mpa (both grades)

Chemical Resistance:

Citric Acid 10%	Excellent
Tartaric Acid 10%	Excellent
Sodium Hydroxide 50%	Excellent
Diesel Fuel/Petrol	Excellent
Sugar Solutions	Very Good
Lactic Acid 10%	Very Good
Hydrocarbons	Very Good
Phosphoric Acid 50%	Very Good

Data quoted is typical for this product and does not constitute a specification.

Note: To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.

Below are typical results achieved with this product.

Average compressive strength results:

ASTM, N/mm ² at 7 days	25°C	70-75
	35°C	75-80

For strengths at alternative temperatures & ages of material contact Cormix International Ltd.

	25°C	+35°C	+55°C
Open Time: (min) (FIP 5.2)	>70	>60	>20
Slant Shear Strength: (N/mm ²)	-	15-17 (or) concrete failure	18-22 (or) concrete failure
Pot Life: (min) (FIP 5.1)	≥45	≥30	≥20

Note:-

Open Time is effected by volume mixed and may be adjusted to meet specific requirements.

Slant Shear Strength- failure within concrete meets requirements of FIP 5.14.

Thixotropy Sag Flow: No sag at 2-3 mm thickness 5°C to 35°C according to FIP 5.3.

Condur EA1/SB may be adjusted to conform with ASTM C881-78 various Types and Grades as required or to customer's specification.

To obtain maximum pot life, spread **Condur EA1/SB** into a thin (less than 3 mm.) layer immediately after mixing.

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SETTING TIME/POT LIFE

Condur EA1/SB setting time/pot life can be adjusted to meet specific requirements. The greater the quantity mixed the shorter the potlife.

High temperatures reduce potlife.

Squeezability: According to the standard FIP/9/92 and the thickness of the joint is anticipated as follows:

Squeezability	Joint Thickness :	Min-Max (mm)
0.25 N/mm ²		0.25-0.35
7.50 N/mm ²		0.25-0.40

The results are achieved using an adhesive layer between 2 standard 100 mm concrete cubes after curing, saw cutting & measuring the adhesive thickness. Meets the requirements of all loads FIP 5.4.

Modulus of Elasticity:

Instant Modulus to Compression	9,500-12,000 N/mm ²
Deferred Modulus in Compression	9,000-11,500 N/mm ²
Requirements Instant	>8,000 N/mm ²
Deferred	>6,000 N/mm ²

Water absorption: <0.5% passes requirement
Shrinkage: (%) <0.18 passes requirement of <0.4% after 7 days FIP 5.7

Heat Resistance: HDT >50°C
 meets requirements of FIP 5.10

SUBSTRATE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate. Concrete must be at least 14 days old prior to treatment.

Steel surfaces should be grit blasted to white metal. Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

MIXING

Care should be taken to ensure that Condur EA1/SB is mixed thoroughly. The hardener and the resin components should first be stirred separately to disperse any settlement. The entire contents of the hardener tin should then be poured into the resin tin and the two components mixed thoroughly using a low-speed drill and paddle for at least 2 minutes until a uniform colour is obtained.

APPLICATION

Apply the mixed Condur EA1/SB with a notched rowel, putty knife, caulking gun or by hand, etc. depending upon the application. Bonded surfaces should be held rigidly together until the Condur EA1/SB has set.

CLEANING

All tools and equipment should be cleaned immediately after use with Cormix Cleaner. Hardened material can only be removed mechanically.

CONSUMPTION

Condur EA1/SB Paste: 1.80 kg/m² for 1 mm thickness.
Condur EA1/SB Pourable: 1.70 kg/m² for 1 mm thickness.

PACKAGING

1.5 kg set and 6.0 kg set. Two component packs.

STORAGE & SHELF LIFE

Condur EA1/SB has a shelf life of 12 months when stored in a dry place below 35°C in unopened containers.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do not** induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

TECHNICAL SERVICE

The Cormix International Technical Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
 ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.

Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product. Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advice offered.

CONTACT DETAILS

Cormix International Limited
 89 Romklao Rd., Sansab, Minburi, Bangkok 10510
 Tel. (66 2) 917 3955-8 | Fax. (66 2) 917 3959
<http://www.cormix.com> | E-mail: info@cormix.com