

## A Solvent Free Moisture Insensitive Adhesive For Bonding Guardian CF Reinforcement

**Guardian CF Adhesive** is a two component Solvent Free, 100% Solids, moisture insensitive structural Thixotropic Epoxy Adhesive.

Complies to EN1504 Part 9 and EN1504 Part 4

**Principle 4** : Structural Strengthening (SS).

**Method 4.1** – Adding or replacing embedded or external reinforcing steel bars.

**Method 4.3** – Plate Bonding.

## USES & ADVANTAGES

- An adhesive for the bonding of Guardian CF structural reinforcement plates.
- Advantages include:
- High early strength without shrinkage.
- 100% Solids (No Volatile Organic Content)
- High strength.
- Impermeable to liquids.
- Two pack colour coding gives visual check on correct mixing.
- Non sag easy to apply.
- Unaffected by wide range of acids, alkalis and industrial chemicals.
- High mechanical, abrasion and shock resistance.
- Excellent adhesion to many substrates.
- No primer required.

## PROPERTIES

<b>Appearance : Colour</b>	Part A : black paste Part B : white paste
<b>Mix Ratio:</b>	1:1 by weight
<b>Pot Life :</b>	50 min @23°C ASTM C881
<b>Density Mixed :</b>	1.5±0.05 Kg/Lit @23+°C
<b>Sag :</b>	Non sag on vertical surface up to 5 mm thickness @ 35°C (F.I.P.)
<b>Open time :</b>	70-80 min @ 23°C
<b>Full Cure :</b>	7 Days
<b>Compressive Strength :</b>	@23°C
1 day	75 N/mm <sup>2</sup> ASTM C579
7 days	85 N/mm <sup>2</sup> ASTM C579
<b>Tensile Strength :</b>	@23°C
7 days	24.7 N/mm <sup>2</sup> ASTM D638
<b>Flexural Strength :</b>	@23°C
7 days	42.9 N/mm <sup>2</sup> ASTM C580
<b>Bond Strength by Slant Shear :</b>	@23°C
7 days	>4 N/mm <sup>2</sup> (Concrete failure) ASTM C882

\*\*Properties are typical under laboratory conditions and do not constitute a specification.

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### SYSTEM AND APPLICATION DETAILS

#### 1. Substrate preparation

Ensure that the concrete surface is clean and sound. Remove all contaminants including coatings, grease, oil, dirt, excessive laitance, salts and unsound material by grinding, hammering, etc. Where necessary degrease with chemical degreaser.

Any structural cracks should be injected with **Guardian CIR** epoxy resin injection material.

**Note:** *Unsound deteriorated concrete that occurred as a result of corrosion of rebars, needs to be removed to behind rebar. Corroded rebar to be cleaned with rust remover. Apply **Guardian Zinc Primer** on cleaned rebar as a corrosion protective coating. Apply **Guardian WEAP** as a bonding bridge on the prepared concrete surface. Apply **Guardian 600 Series** over **Guardian WEAP** bonding bridge to bring back the profile of concrete.*

#### 2. MIXING

Mix part A and B of **Guardian CF Adhesive** together at the ratio 1:1 by weight for at least 3 minutes with a (300-400 r.p.m.) slow speed electric drill. Avoid entraining air. Use all material within its pot life. The greater the quantity mixed the shorter will be the pot life. The pot life is longer at temperatures below 15 °C & shorter at high temperatures above 30°C. The pot life of **Guardian CF Adhesive** is typically 50 minutes @23°C.

#### 3. Guardian CF adhesive application on Guardian CF plate

Apply **Guardian CF Adhesive** to the substrate with a notched trowel or spatula/scrapper at a thickness of approximately 1 mm.

Clean the side of **Guardian CF YC-CFRP(S) Plate** to be applied to the concrete and apply 1-2 mm thickness of **Guardian CF Adhesive** to the plate using a spatula.

Within the open time of the **Guardian CF Adhesive** place the **Guardian CF YC-CFRP(S) Plate** on to the prepared substrate and press the plate firmly into the Adhesive using a hard rubber roller. Ensure excess material is forced out of both sides of the plate.

In case of **Guardian CF YC-CFRP(S) Plate** intersections allow the 1st application to harden before application of 2nd plate and clean the over lapping plate surface before application of **Guardian CF Adhesive**.

**Note :** ***Guardian CF system** should only be applied by specialist applicators who have had training in the installation of this system. Guardian can provide such training & a list of approved applicators.*

### CLEANING

All tools & equipment should be cleaned immediately after use with Guardian Cleaner. Hardened material can be removed mechanically.

### LIMITATIONS

**Samples:** - Witness samples should be made at site and tested in a laboratory to ensure the material meets the responsible designers requirement.

**Dew Point:** The substrate temperature should be at least 3°C above the dew point. The ambient temperature should be above 8°C. The product should only be used by experienced professionals. In hot or cold conditions precondition the product 24 hours before use.

Protect from rain for 24 hours after application. Consult a structural engineer for load calculations & design. A qualified structural engineer must be responsible for designing the works. Care must be taken in selecting suitably experienced and trained contractors. Protect from permanent exposure to direct sunlight moisture & or water.

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### CONSUMPTION RATE

Approximately 1.5 kg/m<sup>2</sup> @ 1 mm Thickness

### STORAGE & SHELF LIFE

**Guardian CF adhesive** has a shelf life of 12 months from date of production if stored properly in original un-opened, containers in dry conditions at temperature between +5°C to 35°C protected from direct sunlight.

### HEALTH & SAFETY

Please consult the latest Safety Data Sheet available on request.

### PACKAGING

Guardian CF Adhesive : 10 kg set

### TECHNICAL SERVICE

The Guardian Coating 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.

### 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.

Guardian 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. Guardian 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.