

## 3 COMPONENT POURABLE MULTIPURPOSE EPOXY GROUT

### DESCRIPTION

A three component pourable epoxy grout based on a high grade epoxy resin and specially graded aggregates. On mixing a flowable grout is produced for use in heavy engineering and difficult conditions. Various grades are available to suite different requirements.

### USES & ADVANTAGES

Condur EG is a high strength epoxy grout for use in the petrochemical, oil & gas, power mining & other similar heavy industries. With no shrinkage, it is suitable for many grouting applications including bridge bearings, machine bases such as pumps, generators, motors, turbines, compressors etc., fixing bolts, anchors, crane rail tracks, reinforcement, and for filling cavities in concrete etc.

#### Advantages include:-

- Chemical resistance.
- Solvent free.
- Rapid shrinkage free hardening.
- High mechanical strength.
- Curing is not affected by high humidity.
- Good impact and vibration resistance.
- High adjustable flow.
- Good bonding to most substrates.
- Various grades, high strength for elevated temperatures, long pot life for big pours and standard.

### PROPERTIES

<b>Component:</b>	3 (Base, Hardener & Filler)
<b>Form:</b>	Pourable
<b>Colour:</b>	Black (When mixed)
<b>Mixed Density (kg/ltr):</b>	2.1 ± 0.05
<b>Working Time:</b>	50-60 mins.
<b>Compressive Strength (ASTM C579)</b>	
1 day :	60 N/mm <sup>2</sup>
3 days :	70 N/mm <sup>2</sup>
7 days :	85 N/mm <sup>2</sup>
<b>Flexural Strength @ 7days:</b>	30 N/mm <sup>2</sup>
(ASTM C 580)	
<b>Tensile Strength @ 7days:</b>	15 N/mm <sup>2</sup>
(ASTM D 638)	
<b>Bond Strength @ 7days:</b>	>3.5 N/mm <sup>2</sup>
(ASTM D 4541)	(Concrete Failure)
<b>Yield:</b>	2100 kg/m <sup>3</sup>
<b>Application Temperature:</b>	10 °C to 40 °C
<b>Service Temperature:</b>	5 °C to 70 °C
<b>Creep (ASTM C1181):</b>	0.65%
<b>Linear Shrinkage :</b>	Negligible
(ASTM D 2556)	
<b>Thermal Expansion Coefficient :</b>	
(ASTM C 531)	3.44 x 10 <sup>-5</sup> mm/mm/°C

<b>Effective Bearing Area:</b>	>95%
(ASTM C 1339)	
<b>Shrinkage Unrestrained:</b>	Negligible
(ASTM C 531)	
<b>Elongation:</b>	1.85%
(ASTM D 638)	
<b>Water Absorption Coefficient @ 7days:</b>	
(ASTM C 413)	NIL
<b>E-Modulus:</b>	15500 N/mm <sup>2</sup>
(ASTM C 580)	
<b>Grouting Thickness</b>	Min : 10 mm.
	Max : 150 mm.
<b>Chemical resistance :</b>	Excellent most chemicals
(ASTM D543)	

#### Notes:-

- The above data is typical under laboratory conditions at 25°C and does not constitute a specification. Field trials are recommended.
- The working time starts when the hardener is added to the resin material. Do not let the resin and hardener stand still without adding aggregates which may result in shorter working time. Working time will vary depending on the temperature and the quantity mixed. To get the optimum working time keep the material shaded and in a cool place.
- Strengths are typical and may vary according to conditions and Part C content.
- Max depth depends on conditions.

### SUBSTRATE PREPARATION

#### Foundation Preparation

- Concrete should be old enough, if it is newly placed concrete then it needs to be 21-28 days old and to have reached its design strength.
- Concrete should have attained a minimum compressive strength of 21 MPa, higher strength concrete is recommended for optimum performance of grout.
- All surfaces should be dry, clean, free from standing water, grease, curing compounds, mould oils, all loosely adhered aggregates and cement particles, etc.
- Chip the concrete surface so aggregates are exposed to ensure all laitance and weak particles are removed. Alternatively use a spray on surface retarder when placing concrete. The exposed aggregate amplitude should not be greater than 10-15 mm.
- Chamfer the edges of the concrete 45 degrees to 50 mm. width to avoid sharp corners which helps to reduce the potential for cracking.

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- If anchor bolt sleeves are to be placed, be sure all water is removed and the void completely dry.
- Shade the foundation from direct sunlight for at least 24 hours before grouting and 48 hrs after grouting.

### Equipment Preparation

- Ensure the surface of base plate to be bonded with grout is free from rust, coatings, wax, oil, grease or scale. Mechanical methods such as grinding, sanding, etc can be used to remove laitance, scale, etc to give a sound and clean surface.
- Primers can be used when there is a long delay in cleaning and grouting which could allow rusting and contamination of base plate.

### Formwork Preparation

- Before placing the formwork ensure the foundation and equipment is protected from rain or moisture.
- Seal off the areas that will not be grouted.
- Place forms no greater than 50 to 100 mm away from the edge of individual base plate or sole plate. However this may vary depending on the site requirement and application.
- Excessive edges/shoulders, may create thermal stress resulting in cracks.
- For long and narrow placements create a headbox to maintain pressure and to enhance proper placement.
- Forms should be liquid tight, they should be sealed with sealant, putty, foam or caulk.
- For long pours it is recommended to install expansion joints or divide the sections not exceeding 1.1m in length. This reduces the opportunity for cracking due to the exothermic reaction of the material and differences in linear thermal expansion & contraction between the epoxy grout and concrete.

### Deep Pour Recommendations

- Wherever a deep pour is necessary it is recommended to use rebar of 9 to 14 mm diameter to minimize stress cracking.
- Grouting should be done in multiple layers if more than the recommended thickness.
- When pouring in multiple layers ensure the previous layer is hardened and cooled.
- For deep pour applications pouring in a single layer with rebar installed, use **Condur EGLP**.

### MIXING

- Before mixing ensure all the components are cool, shaded and dry. If not preconditioned store all components below 25°C for 24 hrs before using.
- The temperature of grout, baseplate and foundation are more important than the air temperature because they are directly related to the flow of grout.

- Add component A & B in a mixing vessel and mix under slow speed (RPM 400) for approximate 1 minute. Then add component C and continue mixing until a flowing uniform grout is achieved.
- Avoid excessive mixing which will result in reduction of working time and heat generation.

### APPLICATION

- While grouting the base plates ensure there is sufficient pressure head to maintain movement of grout.
- Base plates with a flat base pour the grout from one side through the other across the short dimensions.
- Ensure entrapped air can escape when grouting closed areas.
- Where grout cannot flow or have smooth movement because of the length of pour pushing aids like steel chains, strips of plywood, etc can be used.
- The base plate with anchor bolts, dowel, starter bar, etc. should be grouted first followed by the base plate.
- If grouting in multiple layers, it is necessary to sprinkle a small amount of 2.5 mm aggregate over the first layer before the grout reaches its setting time. Before placement of 2<sup>nd</sup> layer brush out loose aggregates from the 1<sup>st</sup> pour. Another method is to scabble gently the top surface and make it rough when grout reaches near to its setting time.

### FINISHING

A smooth finish may be achieved before the grout reaches its setting time by spraying or brushing the surface with xylene, white spirit or epoxy grade thinner and then by using the steel trowel or wooden trowel level the surface.

### CURING

- Cure time will depend on the ambient and substrate temperature. For the best results pour the grout and cure above 12°C.
- The grouts setting time will be delayed and will not achieve the desired properties at temperatures below 5°C.
- For cold weather grouting please contact CORMIX Technical Department for assistance.

### IMPORTANT NOTES TO ACHIEVE PRODUCT PERFORMANCE

- Do not alter the ratio of resin and hardener. Fillers can be varied as per site requirement.
- Do not thin the grout with solvent or water to make it more flowable.
- Always use a headbox to maintain pressure and the grouts flowability.
- Epoxy based grouts sometimes develop cracks. Cracks are generally caused by thermal stresses, temperature difference, sharp corners and edges, etc. Horizontal edge cracks may occur just below the grout concrete interface especially in outdoor installations. Chamfering the concrete edge helps in reducing such cracks.

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- To reduce/prevent curling use dowels or scabble back to expose rebar.
- Following proper installation procedures will reduce the amount of crack development. The procedures contained in this data sheet highlight generally accepted field practises for successful grouting. These may be followed, modified or rejected by the user, however, it is not Cormix's responsibility for planning & understanding the installation appropriate to the conditions. If planned procedures differ from the data sheet contact Cormix Technical Service Department.
- If cracks develop use **Condur SC** (Low viscosity epoxy resin system) to repair the cracks. Consult **Cormix**.
- Make certain the most current version of the TDS & MSDS are being used by contacting Cormix Customer Service.
- Proper application is the responsibility of the user, field visits by Cormix personnel are for the purpose of making technical recommendations only & not for supervising or providing quality control at the job site.

### CLEANING

Clean all tools and equipment immediately with **Cormix Cleaner**.

### PACKAGING

A+B+C 10&25 kg. pre-measured sets or larger packaging upon request.

### HEALTH & SAFETY

Avoid contact with skin and eyes and avoid breathing vapour. Use only in well ventilated areas away from heat sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. 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, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

### STORAGE & SHELF LIFE

Store in dry conditions between 5°C - 30°C. The shelf life is 12 months when unopened and stored correctly.

### 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 : 2008 verified by TUV Nord.

### CONTACT DETAILS

#### Cormix International Limited

Regional Office,  
89 Romklao Rd., Sansab, Minburi, Bangkok 10510  
Tel. (66 2) 917 3955-8, 543 8890  
Fax. (66 2) 917 3959, 543 8891  
<http://www.cormix.com> E-mail : [info@cormix.com](mailto:info@cormix.com)

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