

HYGROUT 205

High performance epoxy grout

DATA SHEET



HYCHEM

INFRASTRUCTURE SOLUTIONS

HYGROUT 205 is a three component, high performance epoxy grout. It is designed to exhibit high strength, high flow and low exotherm during curing enabling it to be used in pours up to 175mm.

USE

HYGROUT 205 is recommended for:

- Grouting machinery base plates
- Grouting rails
- Grouting anchor bolts
- Repairing damaged concrete

FEATURES AND BENEFITS

- Low heat generated during cure making it suitable for pours up to 175mm
- Low shrinkage allows final levelling of machine base plate before grouting
- Long pot life for easy handling and placement
- High compressive strength
- Excellent creep resistance ensuring it maintains its multi-dimensional support under constant load
- Variable flow capability – can fill gaps from approximately 10mm to 175mm
- Pre-packaged aggregate – optimum design flowability for pour
- Excellent adhesion to concrete and steel
- Chemical resistant – resistant to a wide range of chemicals
- Faster curing and higher strength than cementitious grouts

TYPICAL APPLICATIONS

- Foundation grouting of base plates
- Rail track anchoring and grouting
- Steel and concrete columns/structures grouting
- Structural anchoring of bolts, dowels and re-bars
- Machinery subject to dynamic movements eg: pumps, gear boxes, compressors and generators
- General grouting in corrosive environments

PHYSICAL PROPERTIES (20°C)

Mix ratio by weight	1.8:0.9:20 (Resin:Hardener:Aggregate)
Cure time	Initial - 24hrs Full - 7 days
Compressive strength ASTM D 695-96	100 MPa
Compressive Modulus	8297 MPa
Tensile strength	20 MPa
Creep ASTM C1181-00 60°C 4MPa	0.013 mm/mm

APPLICATION GUIDELINES

The resin, hardener and aggregate of HYGROUT 205 need to be conditioned to a temperature of approximately 22°C before grouting. The grouting area needs to be protected from cold, hot and wet conditions before grouting start and for at least 24 hours after grout placement.

Surface Preparation

- Concrete shall be fully cured for a minimum of 28 days and with a compressive strength of 25MPa and surface tensile strength of 2.0MPa minimum.
- Remove surface laitance, contaminants, coating, curing compound and all weak and loose materials.
- Roughen concrete surface by Chipping, Diamond Grinding, Scarifying or Grit Blasting to provide the appropriate surface profile for optimum bonding. 50% of the surface should be exposed aggregate.

If the grout will extend out horizontally beyond the machinery base by more than about 25cm then edge lifting may become an issue. If this is the case there are a number of ways to combat it including installing dowels. Consult a Hychem representative for further information.

Pre-conditioning product

It is important to note that even when the application environment is warm, products which have been stored in cold or cooler conditions should always be pre-conditioned ideally to 20-25°C to ease mixing, application and help avoid other potential issues such as amine bloom or blushing.

Applying a cold product in a warm environment is not recommended.

Application guidelines continued...

Base Plate Preparation

- Base plate surfaces that will be in contact with the grout should be sand-blasted to white metal surface. No oil, grease.
- The plate can be coated with an epoxy primer if the grouting is not happening immediately. If left for more than a few weeks then the surface should be prepared again.
- Sharp edges in contact with grout should be rounded reduce stress concentration in the grout. Sharp edges can result in stress cracks in the grout.

Form Work

- Use good quality form material and ensure it is strong and leak proof. Any gaps should be sealed with an appropriate material such as silicone sealant. The forms should be coated multiple times with a grease or floor wax to aid removal after curing.
- Forms should rise about 25mm above the base plate to contain the flowing grout.
- Forms at the sides of the plate should be placed at about 40mm from base plate edge. Forms at the grout entry and exit ends should be placed at least 75mm out to allow room for flow and manoeuvring. To aid the placement of grout under sizeable base plates it is beneficial to use a moveable header box. This controls the flow of grout and directs it forward under the machine while minimising the incorporation of air. It should be slanted away at an angle of 45 degrees.
- When grouting long sections it is recommended to install expansion joints. This reduces the chance of cracks, due to differences in linear thermal expansion and contraction between the grout and concrete.

Mixing

- Mix HYGROUT 205 liquid components (resin and hardener) together using a slow speed power mixer at a speed of approximately 250 rpm until the mix become homogeneous (~ 2 minutes).
- Add the resin mix to a mortar mixer, add the aggregate and mix at approximately 25rpm until all aggregate has been wetted.
- Avoid over mixing as this will increase air incorporation.
- The amount of aggregate can be reduced slightly to increase the flow in cold conditions or where application requires. The aggregate must not be reduced by more than 15% since it will adversely affect the properties and increase the likelihood of a resin rich layer at the surface. Hychem should be consulted.

CLEAN UP

Xylene can be used for cleaning tools and equipment before the mixed compound begins to harden.

PACKAGING

- 22.7 kg - includes 1 x 20 kg aggregate
- yields approximately 10.6 litres
- 113.5 kg - includes 5 x 20 kg aggregate
- yields approximately 53 litres

SHELF LIFE

HYGROUT 205 has a shelf life of 12 months from date of manufacture if stored under shelter and at 25°C in original un-opened container.

SAFETY PRECAUTIONS

- Wear gloves, eye protection and overalls during mixing and application
- Ensure there is adequate ventilation and avoid breathing the vapour

WARNING - ENVIRONMENTAL CONDITIONS

Temperature and the surrounding atmospheric conditions will play a part in the curing process of all epoxy products. Under conditions of low temperatures and high humidity the final cured surface finish can be adversely affected potentially resulting in poor gloss retention, discolouration over time, poor overcoatability and intercoat adhesion. Quite often these conditions will result in the formation of a white film over the surface often evident after contact with water. This chemical reaction with the atmosphere is commonly referred to as "amine bloom" or "amine blush".

If this occurs then the existing coating will need to be abraded to completely remove the affected surface to ensure the adhesion of subsequent applications. In some cases partial or complete re-priming may be necessary.

Attention also needs to be paid to the substrate temperature which should be at least 3°C and preferably 5°C above the dew point during the curing phase.

Industry standards recommend the accurate recording of times and dates, batch numbers, consumption rates and environmental conditions including substrate and air temperatures, humidity levels and dew point readings during both the application and curing processes. Full material warranties cannot be provided unless all the relevant data has been recorded accurately.

If in doubt consult the Hychem technical department for advice.

NOTE: Customer responsibility

The technical information and application advice given here is based on the best information available at the time of print. As the information herein is of a general nature, no assumption can be made as to the products suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation.

Field support, where provided, does not constitute supervisory responsibility. Suggestions made by HYCHEM either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not HYCHEM are responsible for carrying out procedures appropriate to a specific application.

If unsure contact Hychem for further technical advice before proceeding.