



a.b.e.<sup>®</sup> Construction Chemicals  
**dura.<sup>®</sup>grout E**  
 Expansive

**EXPANSIVE CEMENTITIOUS GROUT**

**DESCRIPTION**

**dura.<sup>®</sup>grout E** is a ready-for-use (merely add water) expansive Portland cement-based grouting compound. It contains graded siliceous aggregate and chemical reagents that control expansion by the formation of time expansive gas bubbles within the grout. Rapid expansion before hardening ensures positive surface contact between grout face and face of adjoining material.

**USES**

- For **BEDDING** - machinery base plates, bearing plates, column base plates.
- For **GROUTING** - anchor bolts, starter bars.
- For **PACKING** - dry pack concrete, precast concrete, pipe joints

**ADVANTAGES**

- Quickly develops placeable consistency.
- Remains cohesive.
- Does not segregate.
- Expands on setting.
- Is free of chlorides.
- Is free of metallic particles.

**SURFACE PREPARATION**

Concrete on which the grout is to be placed should be lightly scabbed or chipped to remove all traces of laitance. If oil or grease has been spilt, this may be removed using **abe<sup>®</sup> super brush cleaner** followed by clean water flushing. If any grease or oil remains the process should be repeated. Material that is totally saturated with oil or other contaminants should be broken out prior to grouting. Before placing **dura.<sup>®</sup>grout E** the concrete should be thoroughly prewetted with clean water but should be free from surface water. Surface temperature should not be less than 5°C.

**PROPERTIES OF WET MATERIAL**

Bulk Density	1,8 kg/litre
Colour	Grey
Volume of 1 kg fresh mortar	±0,57 litre
Workability time @ 25°C	15 minutes
Approximate yield per bag	±12,0 litre
Physiological effect	As cement
Shelf life	1 year from date of manufacture
Packaging	25 kg paper bags
Setting time @ 20°C	Initial set – 10 - 20 minutes Final set – ±30 minutes

**Compressive strength** using 100 mm cubes – MPa

Water content	1 day	3 days	7 days
3L/25 kg	18	38	56
2,5L/25 kg	22	46	62

**Modulus of rupture** on 40 x 40 x 160 mm beams - MPa

Water content	1 day	3 days	7 days
3L/25 kg	2,99	3,66	4,73
2,5L/25 kg	3,31	4,09	5,53

**Pull-out adhesive bond strength**

Using 12 mm HT ribbed steel bars grouted into 50 mm diameter steel pipe using 150 mm embedment. At 7 days age the bond strength between steel bars and grout exceeded the characteristics yield stress of the steel bars. At a load of +78 kN the bars yielded and fractured.

## MIXING

When mixing **dura.®grout E** best results are obtained by using a mechanical, vertical shaft, high-speed mixer. Pour the necessary quantity of clean water into the container and then add the dry powder with continuous stirring until the mixture is free from lumps.

Two minutes mixing should be enough to obtain a smooth consistency. Using slower type mixers up to five minutes mixing time will be needed. Thorough mixing to a smooth consistency is essential in order to achieve maximum results. Water content will vary depending upon desired result.

### **Using a 25 kg bag of dura.®grout E:**

- Approximately 3 liters of water will yield a FLOWABLE GROUT.
- Approximately 2,5 liters of water will yield a PLASTIC MORTAR.
- Approximately 1,75 - 2 liters of water will yield a DRY PACK MORTAR.

These figures are merely a guide as site conditions such as temperature may require adjustments to the mix. It is recommended that small trial mixes be made to arrive at the required working consistency.

**Note:** Use clean equipment at all times. Wash equipment with clean water immediately after use.

## APPLICATION

**dura.®grout E** must be placed within 15 minutes of mixing and material still in the mixer should be intermittently agitated. Mixture more than 15 minutes old must be discarded. Areas to be grouted must be pre-dampened.

FLOWABLE GROUT may be used with standard low pressure cement grout equipment or may be hand compacted into restrained areas. High points must be adequately vented to allow entrapped air to escape.

PLASTIC MORTAR may be hand compacted or trowelled into place where freedom of movement permits. Consistency can range from thick cream to smooth plastic.

DRY PACK MORTAR must be firmly pressed or rammed into place. Consistency should allow pressing into firm ball without cracking.

### **Under machine bases, footplates**

1. If required, prepare formwork to restrain the grout in the position required. The top of the formwork should be at least 50 mm above the final levels sought.
2. When viewed in plan, a suitable gap between the formwork and bedplate is required. The provision of the gap allows for placing, rodding and vibrating the grout. In addition, the movement of the grout may be monitored to ensure complete support. At points where pouring is to be carried out, the gap should be at least 75 mm wide, but should not be less than the final depth of grout.
3. If long flow distances are required, use a grout box to provide a larger head of material. The dimensions should be large enough to allow the use of a poker vibrator. Alternatively, if the machine base can accommodate the siting of extra grout holes, these should be provided. Consult **a.b.e.®** for a more fluid grout for long flow distances.
4. Pouring should be carried out from one side of the unit, to ensure the elimination of entrapped air. A flexible rodding tool, such as a strip of thin flat metal plate or rod, should be used to keep the grout moving while pouring. A poker vibrator should also be used to agitate the material.

### **Cavities in concrete:**

1. All loose and deleterious material must be removed prior to repairs being carried out. Where possible, chase out a high point vent. If this is not possible and high points are present, vent tubes must be positioned to allow air to be vented and the void totally filled.
2. The surrounding concrete must be fully saturated before **dura.®grout E** is placed. Provide grouting boxes to allow a head of material to be built up. Alternatively, the grout may be packed into position, if mixed as a dry pack material. If hand packed, trowel off to a smooth finish using a metal float.

## CURING

Grout surfaces should be protected from wind or high temperatures, which can cause rapid drying. Cover the surface with damp sacks or spray with **Chryso Cure** curing compound.



## MODEL SPECIFICATIONS

Expansive cementitious grout. The grout will be **dura.®grout E**, a prepacked, expansive cementitious grout applied in accordance with the recommendations of **a.b.e.® Construction Chemicals**. The grout will have a minimum one-day compressive strength of 18 MPa.

## PACKAGING

**dura.®grout E** is supplied in 25 kg polyethylene lined paper bags.

## HANDLING & STORAGE

This product has a shelf life of 12 months if kept in a dry cool place in the original packaging. In more extreme conditions this period might be shortened.

## HEALTH & SAFETY

**dura.®grout E** is alkaline and must not be allowed contact with skin and eyes. Avoid inhalation of dust during mixing by wearing dust masks. The use of gloves, eye protection and dust masks is advised. Immediately wash with water in the event of contact with skin. Splashes into eyes should also be washed immediately with plenty of clean water and medical advice sought.

## IMPORTANT NOTE

This data sheet is issued as a guide to the use of the product(s) concerned. Whilst **a.b.e.® Construction Chemicals** endeavors to ensure that any advice, recommendation, specification or information is accurate and correct, the company cannot - because **a.b.e.®** has no direct or continuous control over where and how **a.b.e.®** products are applied - accept any liability either directly or indirectly arising from the use of **a.b.e.®** products, whether or not in accordance with any advice, specification, recommendation, or information given by the company.

## FURTHER INFORMATION

Where other products are to be used in conjunction with this material, the relevant technical data sheets should be consulted to determine total requirements. **a.b.e.® Construction Chemicals** has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.



a.b.e.® is an ISO 9001:2008 registered company  
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DATE UPDATED: 06/11/13