

Pillars with integral root

INSTALLATION INSTRUCTIONS

Pillar Installation

- 1 Determine the size of hole required based on the overall size of the pillar, size plus a minimum of 200mm (8") all round. The depth of the hole should be 300mm to the finished ground level – this is indicated on the front of the pillar.

R150	R300	R460
550mm x 550mm x 300mm	700mm x 550mm x 300mm	860mm x 630mm x 300mm

The finished ground level will include flagging, tarmac, block paving etc.

- 2 Place the pillar in the hole making sure that it is well supported and that the ground level indicator on the pillar is at the finished ground level.
- 3 Insert the conduit / ducting / armoured cable through the appropriate entry point(s) at the bottom of the pillar
- 4 If necessary, adjust the position of the pillar to make sure it is perfectly vertical in both planes.



- 5 Fill the hole, in and around the pillar, with concrete making sure that the pillar remains perfectly vertical in both planes during and after the pouring of the concrete. We recommend a concrete mix of ST4/C20.
- 6 Allow the concrete to cure.
- 7 Seal the base of the pillar with a minimum 6mm layer of epoxy resin (or other impermeable material) preferably over a bed of dry sand.
- 8 If appropriate, finish the ground around the pillar to the level indicated on the front.

**Condensation in pillars and cabinets can be a real problem.
Please see our leaflet – “Sealing the bottom of a cabinet”**

Preparation

Prepare the bottom of the cabinet by removing any debris and rubbish. Make sure that whatever is in the space at the bottom of the cabinet or plinth is not loose. If it is loose, compact it as well as you can.



Pour a layer of gravel so that it is level or just above the level of the bottom of the cabinet. Again, compact the gravel as well as you can.



Next, pour and spread the sand so that it is just a thin layer. The sand is intended to blind the top of the gravel to prevent the grout flowing through the gravel before it sets.

So it is very important to make sure that all areas of the gravel are covered by the sand.



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For best results, compact the sand using a tamp or a square trowel.

Brush any loose sand off the edges of the cabinet - any loose lumps of sand can seriously effect the sealing ability of the grout if not removed.

Finally, mix the grout and pour to a thickness of 20 – 25mm. The grout, when mixed correctly, will self-level, so there is no need to spread it. Please check that the grout covers the whole area and that there is nothing preventing it from flowing evenly across the bottom of the cabinet.



Materials Required – (gravel and sand can be obtained from any good builders merchant)

10mm gravel

Building Sand

Water

Grout – can be obtained from most builders merchants

Febgrout Universal (See product data sheet **Febgrout Universal**)

(Mixing ratio – 25kg of grout to 2.3 – 3.9 litres of water. Mix with a slow speed drill and paddle.)

Equipment required:

Shovel / spade

Tamp or Square trowel

Small brush (1" paint brush)

14 litre Flexible Mixing Tub

Drill

Paddle



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FEBGROUT UNIVERSAL

High Precision Flowable Grout

Description of Product

FEBGROUT UNIVERSAL is a ready to use, non-shrink construction grout. It can be used as fluid or plastic consistencies for grouting of equipment and machinery, bearing pads, rails and anchoring.

Typical Uses

FEBGROUT UNIVERSAL is recommended for:

- Grouting bearing pads and plinths.
- Grouting under machinery base plates, stanchion bases and crane rails.
- Anchoring bolts, reinforcing bars and rods.
- Underpinning.

Features and Benefits

- Non shrink for effective contact and support.
- High early strength for rapid installation and use of plant.
- Durable, uniform dense structure.
- Good workability into gap widths of down to 5mm for up to 1 hour at 20°C.

Instructions for Use

Surface Preparation

All surfaces must be clean and sound. Remove all surface laitence by acid etching or grinding, also dust and debris. All surfaces should be thoroughly wetted 6 – 24 hours before starting and be in a moist condition during placing. Any free surface water must be removed before application.

Mixing

For optimum results a high shear paddle or vane grout mixer should be used. Colloidal impeller mixers are not suitable for use with this product. Air entrainment should be avoided. For large or continuous placement ensure that adequate mixing capacity and sufficient labour is available. Add the correct amount of water for the required consistency to the mixer and then add the complete pack(s) slowly while mixing. Mix for a further 3 – 4 minutes until smooth and cohesive. Allow to stand for 1 minute before use. Re-mix and use immediately.

Strength Development: The strength of the grout is often the determining factor in deciding when loads can be put on structural members or machinery. The strength of the grout is dependent on the amount of mixing water, temperature of the object grouted, curing and age of hardened grout.

Application

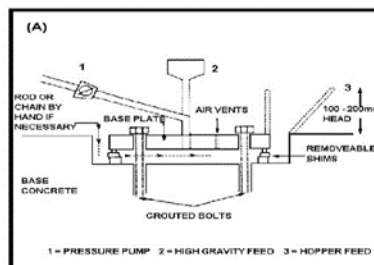
Under plates: Ensure sufficient material is available to complete the work and obtain a continuous fill. Pour from one side only to avoid air entrapment, keeping a head on the grout to promote flow. DO NOT vibrate but rods, straps and chains can be used to aid complete filling. A high gravity feed may also be used.

Grouting large volumes: FEBGROUT UNIVERSAL may be used up to 75mm thick sections. Above this the addition of clean, graded 10mm aggregates at up to one to one by weight is recommended. In this instance normal concrete mixers and pumps may be used.

Pumping: FEBGROUT UNIVERSAL may be placed using piston, ram or diaphragm type grout pumps fitted with ball valves. In all cases, ensure maximum restraint is maintained; otherwise compressive strength will be reduced.

Placing

Diagram (A) illustrates typical placements of FEBGROUT UNIVERSAL in the flowable state utilising straight pouring or pumping techniques to place a bedding mortar under bearing plates. Note that unrestrained areas around baseplates should always be kept to a minimum (<150mm).



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Unrestrained areas: Even with good curing, unrestrained areas of grout, for example around baseplates, may exhibit drying shrinkage cracking some time after placement. This is not detrimental to the performance of the grout where it is restrained under the plate or bearing, but may affect the cosmetic appearance of the application.

Curing Good curing is essential on all exposed surfaces particularly in dry, sunny conditions. Failure to do so will reduce bond, strength and durability. Immediately after finishing apply 1 coat of FEBCLEAR SUPER to all exposed surfaces. Alternative methods are water ponding, mist spraying and the like, but in all cases these must be maintained for at least 7 days. Keep the grout above 5°C at all times during application and cure.

Coverage

25Kg of FEBGROUT UNIVERSAL mixed with 4.5 litres of water produces approximately 13.4 litres (0.0134 m³) of grout. (Approximately 75 x 25Kg bags per m³), using more or less water to meet consistency requirements, will increase or decrease the yield accordingly

Storage

Store in cool dry conditions away from direct sunlight and at ambient temperatures.

Shelf Life

9 months from date of manufacture when stored as directed.

Technical Data/Typical Properties

Colour	Grey	
Specification	Complies to specification for "Highway Works" Clause 2601 (DOT)	
Gap Width (minimum and max)	10mm- 100mm	
Joint Depth	5mm minimum, 75mm maximum	
Workability @ 20°C	approx 2 hours	
Setting time (initial) @ 20°C	approx 8 hours	
Final set @ 20°C (trafficable)	approx 12 hours	
Coverage	approx; 22kg/m ² @ 25mm depth	
Minimum application temperature	+1 °C (when mixed as directed above)	
Yield per 25kg (mixed as directed)	13.25 (fluid) -13.50 ltrs (flowable)	
Density (wet)	2160kg/m ³	
Expansion characteristics (ASTM C87)	0.35%-1.1% (unrestrained)	
Static modulus of elasticity (ASTM 469-87A)	23KN/mm ²	
Flow Characteristics (efflux time) ASTM C-939-87	25.25 seconds	
Chloride ion content (BS1881 Part 124)	<0.002% w/w	
Cement content (BS4551)	44.3% w/w	
Typical strengths (BS1881; Part 116) @ 20°C		
TIME AFTER PLACEMENT	COMPRESSIVE STRENGTH (N/mm ²)	FLEXURAL STRENGTH (N/mm ²)
1 day	29	-
7 days	60	9.25
28 days	70	9.55



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www.ritherdon.co.uk +44 (0)1254 819100