CINTEC

Masonry Anchoring & Reinforcement Systems

NOTES FOR APPROVED INSTALLERS
USING THE
CINTEC ANCHORING SYSTEM

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THE CINTEC TRAINING COURSE

The object of this training course is to give the installer a complete knowledge of the Cintec Anchoring System.

References to “Cintec” in this document are to the companies Cintec International Ltd (UK), Cintec America Inc., Cintec Canada Ltd or Cintec Australasia Pty Ltd , or to the product manufactured and marketed by those companies, unless contrary to the context.

During the course you will be shown and given hands on experience in the installation techniques used in the Cintec Anchoring System.

Upon completion of the course, successful trainees will be certificated and issued with an identity card

Your company will then be entered onto our list of approved installers.

Identity cards

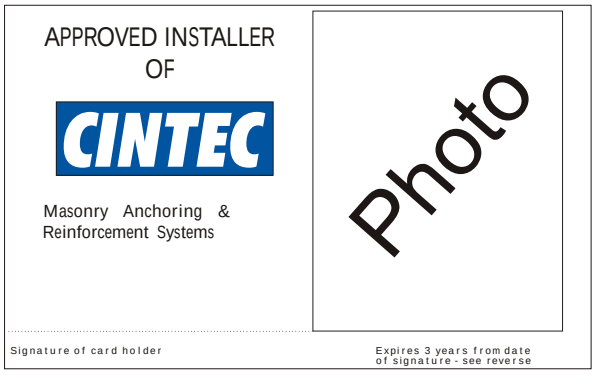
You will be required to carry this identification card on site whilst undertaking all work requiring the use of the Cintec Anchoring System.

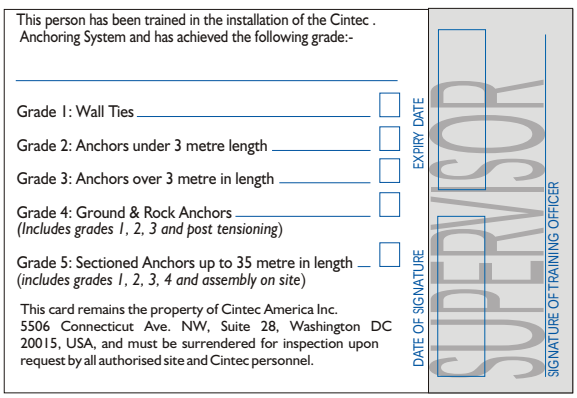
This card must be shown to all authorized site and Cintec personnel upon request. Failure to carry and produce your identity card may terminate your right to remain an approved installer.

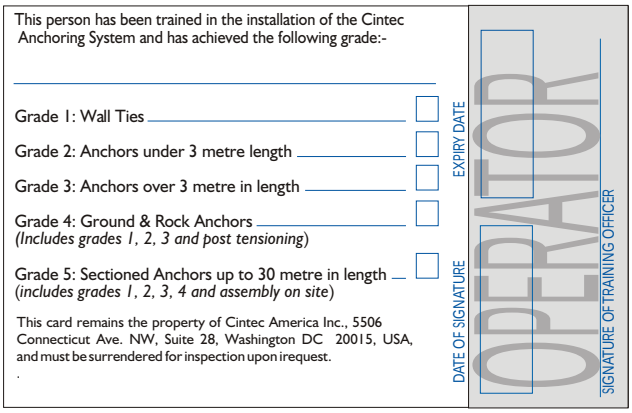
As manufacturers, we carry the responsibility of the product thus giving you the responsibility to carry out the work in a workmanlike manner.

This identification card is valid for three years only, after this time period reassessment will be necessary.

Any new employees joining an approved company must receive training from a Cintec representative before they can install the Cintec Anchoring System.







EQUIPMENT REQUIRED FOR THE INSTALLATION OF THE CINTEC ANCHORING SYSTEM

Equipment for installation of Cintec anchors consists of:

- 25 litre (6.6 US Gal) or 2 1/2 Litre pressure pot with manual agitator. These can be supplied adapted for Cintec anchor installation by Cintec. Contact Cintec for pressure pots which are accpetable and available in your area (See Appendix D).

(An equivalent pressure pot may be used but it must be able to be pressurized from 200 kPa to 600 kPa.)
The outlet on the pressure pot needs to be altered to accept a ½" (1.27 cm) BSP hose adapter with 4 metres (12'0") of reinforced ½" (1.27 cm) tubing and a ½" (1.27 cm) quarter turn ball valve. A ½" (1.27 cm) hose adapter or threaded attachment needs to be screwed into the valve to enable plastic mastic nozzles to be pushed or threaded onto the front of the valve. This assembly will then serve as the grout delivery hose and control valve. For large anchors using grout delivery tubes, quick-connect hose fittings may be used. Contact Cintec for details.)

- 7 to 10 c.f.m compressor (minimum).
- Mixing paddle or whisk with a 6" (15.24 cm) cage.
- Electric drill for mixing (560 r.p.m. e.g. Bosch GSB90-2E.)
- Two large mixing buckets (18 litre/5 US Gal min.)
- Measuring jug marked in litre (or less) increments.
- A large flour sieve (small mesh of 1 - 2 mm or .03-.07 inches)
- Power supply with earth leakage circuit breaker protection.
- An adequate supply of mastic nozzles to suit control valve on delivery hose.
- Safety goggles and gloves.

All equipment must be kept in a clean condition. Do not use oil or releasing sprays inside the pressure pot as this may contaminate the grout.

Safety goggles and gloves must be worn at all times when mixing and injecting grout.

INSTALLATION

Drilling

Carefully set out the anchor position using a wax crayon or chalk, as per specifications, or as directed by the structural engineer or supervisor.

Select the drilling method specified: -

Wet diamond - dry diamond - rotary percussion - or other

Drill the hole to the required depth of the anchor and the embedment depth required.

Remove all cores from the borehole and check the depth.

Flush out all bore holes with water or compressed air to remove all dust and debris.

Wash off all stains immediately.

Drilling blind into substrates requires special care. Substrates must be checked to ensure that they are as indicated. If not notify the engineer or supervisor. A particular problem is ending the drill hole in a void larger than the anchors expansion capabilities. Careful checks must be made if this is suspected and the engineer or supervisor informed.

Boreholes in loose material must be sleeved immediately after drilling to facilitate anchor insertion and prevent the need for re-drilling.

Grout mixing

The grout is packed in 25 kg (56 Lbs) bags and is mixed with clean cold water.

The normal mixing ratio is 5½ litres (1.45 US Gal) of water to one 25 kg (56 Lbs) bag of grout. One 25 kg (56 Lbs) bag will yield 16 litres (4.25 US Gal) of fluid grout when mixed.

The 5½ litres (1.45 US Gal) of water can be increased by 10% (550ml OR 0.124861 US Gal) in hot weather (20°C +/68°F) and when the substrate is very dry and porous or the injection process is through very small injection tubes.

Do not increase the water content outside of these parameters, as this will considerably weaken the strength of the set grout.

The grout must be mixed as follows:

- Place 5 litres (1.135104 US Gal) of clean/cold water into a clean mixing bucket and slowly add approx. 3/4 of one bag of Presstec grout while mixing.
- Add the final ½ litre (0.11351 US Gal) of water and the remaining 1/4 bag of grout.
- Continually mix the grout for 4 minutes removing all the dry mixture from the sides of the bucket.

- Allow the mixture to stand for 5 minutes, during which the mixture will start to thicken, the amount the mixture thickens will depend on the ambient temperature and the temperature of the dry grout and water.
- At this stage some or all of the 10% extra water may be added to achieve a smooth creamy texture with no peaks forming on the surface.

MIXING

See also hot weather and cold weather procedures

5 LITRES (1.135104 US Gal) OF WATER

very clean bucket or container

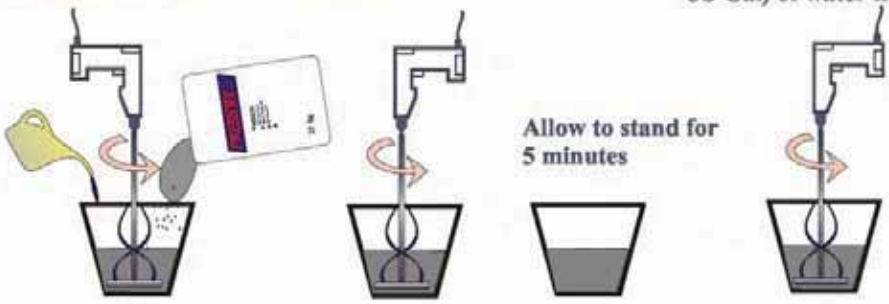
1/2 LITRE (0.11351 US Gal) OF WATER

25 KG (56 Lbs) BAG

electric mixer capable of 500 rpm

4 minutes of continuous mixing

Re-mix and add up to 10% (550ml or 0.124861 US Gal) of water if required.



Allow to stand for 5 minutes

- Installation then proceeds:
- Pour the mixed grout into the pressure pot through the sieve.
- Pressurize the pot from 300 kPa to 500 kPa (40-72 psi) dependent on the type and length of anchor being installed.
- Cut the plastic mastic nozzle to fit the anchor's orifice. On anchors with injection tubes, prime the tube with water and cut the mastic nozzle to fit over the injection tube.
- Test the grout flow into a suitable bucket. If the grout flow is continuous and of sufficient pressure the anchor can be injected.

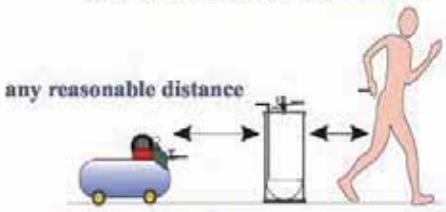
grout is introduced into pressure pot through a sieve

pressure gauge

or

hand held grouting gun for small quantites.

large quantity grouting equipment



any reasonable distance

compressor 7 cu. ft. min. 100 psi.

pressure pot

injection limits between 300 & 500 kPa (40-72 psi)

injection hose no longer than 4 metres

pot life 60 minutes dependent on temperature

when injecting anchor rotate the whole body in a circular motion to position the anchor body in the centre of the bore hole

Anchor insertion

Carefully unpack the anchor and check there has been no damage to the fabric sock during transit.

All damages must be reported to Cintec.

Small tears or rips in the sock can be repaired using a needle and strong cotton or a hot-melt glue stick.

Do not shorten the length of the sock on the anchor.

At this stage the anchor must be handled with extreme care and should not be unwrapped until required.

Some long anchors require sleeves to protect the anchor during insertion, wherever possible use sleeves.

Immediately prior to insertion wet the anchor completely with clean water and position the sock evenly along the length of the anchor.

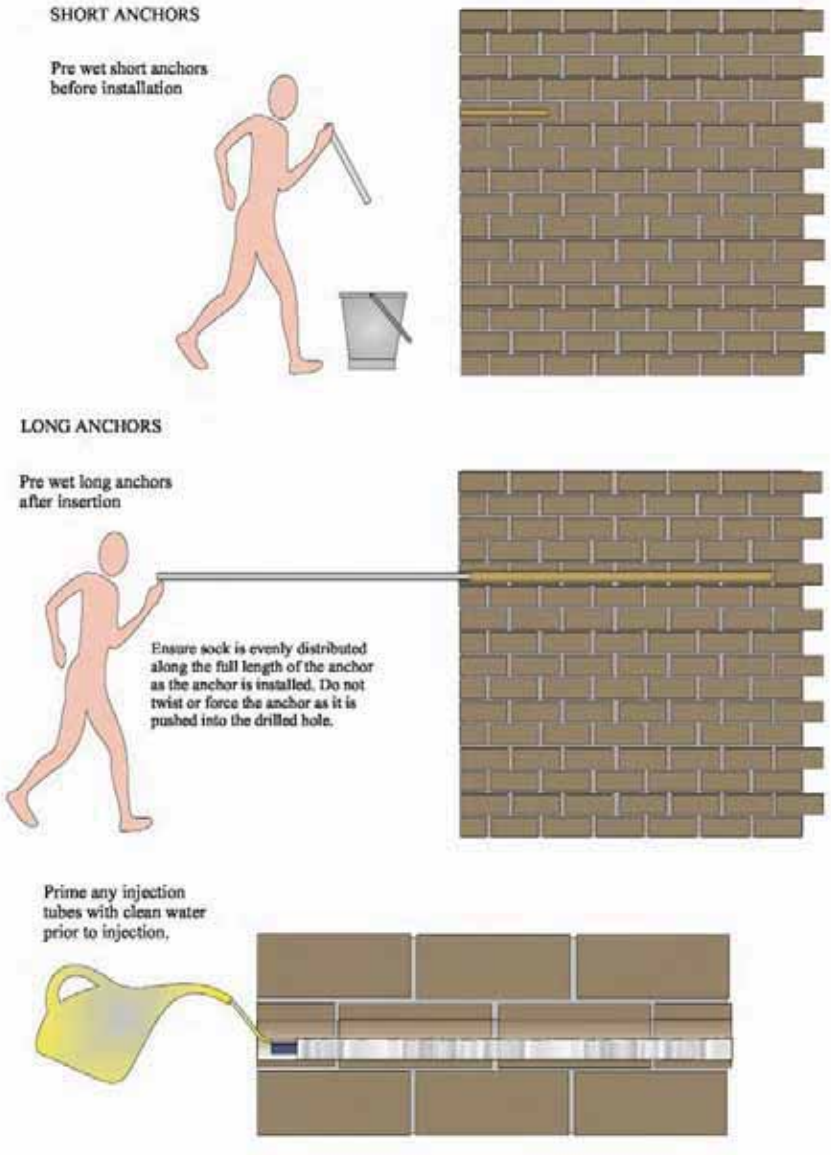
Long anchors should be wet after insertion into the borehole

N.B. Do not allow the sock to remain completely saturated with water for a long period as this may cause the fabric sock to shrink.

Place the anchor in the bore hole and carefully push the anchor in, lifting it over any fissures or voids, do not force or twist the anchor into the hole.

Install the anchor to within 50 mm (2") of the face of the brickwork (do not push completely in yet.)

ANCHOR INSTALLATION



-Carefully cut the nozzle to fit over the injection tube and position the anchor to the specified depth (minimum 25 mm or 1" beyond face of brickwork).
-Prior to the mixing and injection of the grout, the equipment should be primed and checked with clean water to ensure that the injection equipment is working and that there are no blockages.
-Turn on the control valve and the grout will flow to the rear of the anchor and inflate the sock along the length of the anchor to the front.
-Rotate the anchor in a circular motion to facilitate the grout flow and to ensure the anchor is centred in the borehole upon completion.
-At this stage the anchor will be felt to be locking in the borehole and grout milk will appear at the front of the anchor (note the colour change in the sock).
-Maintain the pressure until the grout milk has stopped flowing and the sock at the front of the anchor cannot be compressed.
-Use a sponge or cloth during this process to soak up the excess grout milk and avoid the milk running down the face of the brickwork/stonework.
-The pressure pot and delivery hose should be lagged with a suitable insulating material.
-The grout, anchors and pressure pot must be stored in a container or room with a temperature of no less than 10ºC (50ºF).
-The clean water used for mixing must be within the temperature range of 15ºC - 20ºC (59ºF-68ºF).

Any grout or milk on the wall must be washed off immediately.

Please note that the anchor is not fully inflated until the grout milk has stopped flowing through the sock.

Pressure must be maintained to allow this to be achieved.

With large injection orifices, a suitable plug must be placed in the injection port immediately after removing the nozzle.

STUDDING AND SOLID BAR (REBAR) ANCHORS, THE NORMAL INSTALLATION STILL APPLIES, BUT THE FOLLOWING METHOD NEEDS TO BE ADOPTED TO FACILITATE THE INSTALLATION.

When inserting the anchor, ensure that the injection tube is towards the top of the borehole – NEVER force or twist the anchor into the hole.

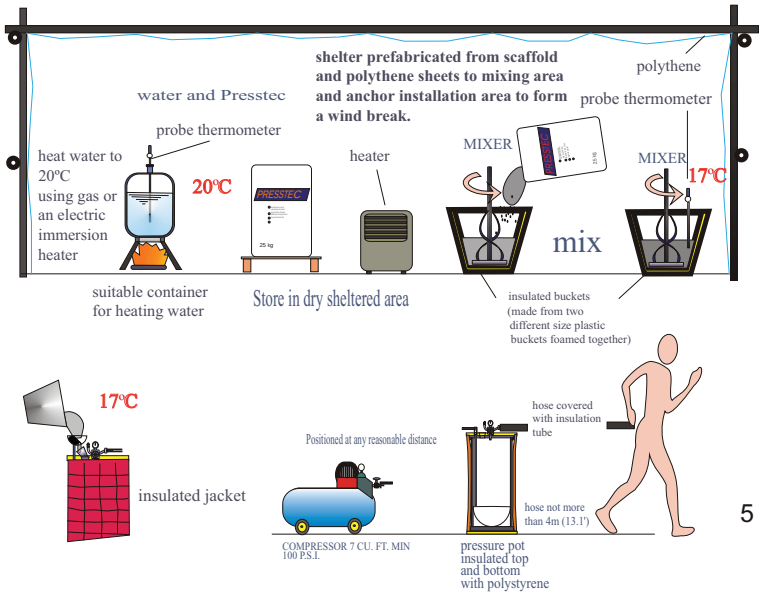
Cold Weather Grouting

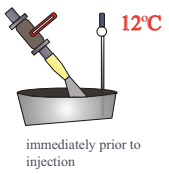
The installer shall ensure that the minimum temperature of the grout at the time of injection is 7ºC (44.6ºF) and the temperature of the injected grout does not fall below 5ºC (41ºF) for a period of twenty-four hours from the beginning of inflation.

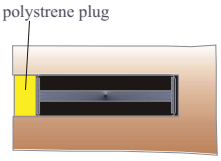
If this is impracticable, cold weather procedures must be adopted with the consent of Cintec.

The cold weather procedures are as follows:
-The pressure pot and delivery hose should be lagged with a suitable insulating material.
-The grout, anchors and pressure pot must be stored in a container or room with a temperature of no less than 10ºC (50ºF).
-The clean water used for mixing must be within the temperature range of 15ºC - 20ºC (59ºF-68ºF).

COLD WEATHER HINTS

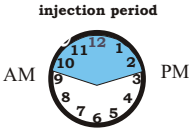






Bore hole temperature must be a min of 0ºC (32ºF)

RECORD
DATE
BATCH NUMBER
WATER TEMPERATURE
FINAL MIXING TEMPERATURE
TEMPERATURE PRIOR TO INJECTION
FINAL POT BATCH TEMPERATURE



- The bore hole temperature must not be below 0ºC (32ºF) and no ice must be present on the surface of the borehole.
- A suitable shelter needs to be used for the mixing process.
- A screen needs to be erected around the installation area to avoid any wind chill.
- After drilling the borehole, install a suitable plug to maintain a constant core temperature.
- Insert the anchor in the borehole just prior to inflation (as per normal installation methods).

(N.B. Allow the outside temperature to rise before injecting the grout, i.e. do not inflate first thing in the morning or last thing in the afternoon.)

- Mix the grout as per instructions using the heated water and sieve into the insulated pot.
- Inflate the anchor as normal.
- Immediately after inflation, install insulation in the front of the borehole.

Please note that these procedures must be carried out with extreme care and should not be used unless a representative from Cintec is present.

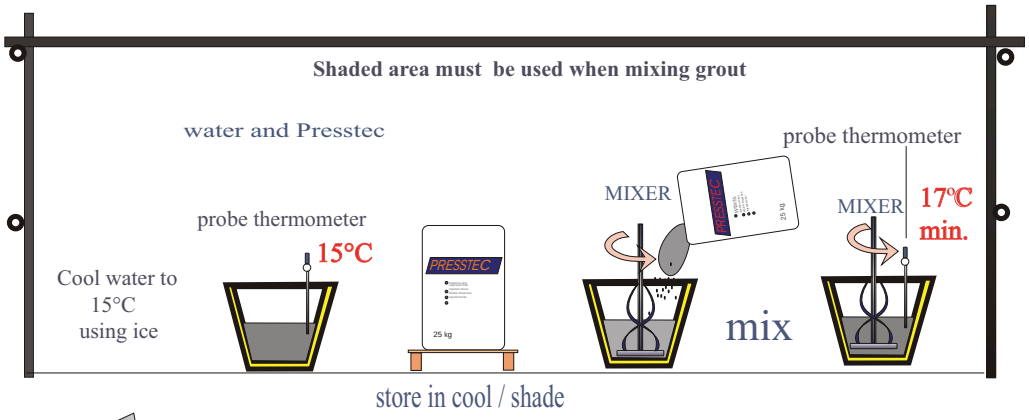
Hot Weather Grouting

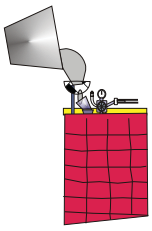
In very hot climates, the maximum temperature of the grout at time of injection must not exceed 20°C (68ºF).

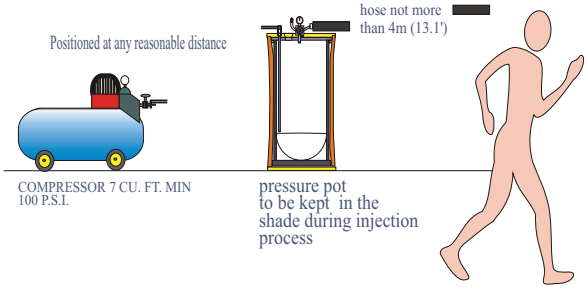
If the temperature exceeds this, the clean water used for mixing must be cooled to 10° to 15°C (50ºF to 59ºF).

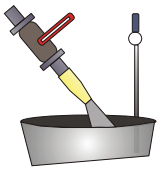
The pressure pot and the borehole must be shielded from direct sunlight.

HOT WEATHER HINTS



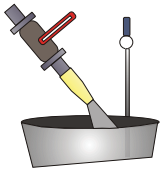






grout must not exceed 20°C

immediately prior to injection



check control of last contents of pot

grout must not exceed 20°C

In very hot climates the maximum temperature of the grout at time of injection must not exceed 20°C(68°F). If the temperature exceeds this, the clean water used for mixing must be cooled to 15°C (59°F). The pressure pot and the bore hole must be shielded from direct sunlight. In extreme conditions the pressure pot must be placed in a vat of cooled water or ice.

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PROBLEMS ENCOUNTERED DURING INSTALLATION

Grout blockage can occur in the hose and control valve if left in direct sunlight or the mixed grout has not been sieved correctly.

The anchor will not inflate if the sock has been ripped during installation. Remove the anchor from the borehole and check the sock, small tears can be repaired and the anchor reinstalled; if the damage is more severe remove the grout and fabric sock and wash off the anchor completely. Notify Cintec who will arrange a repair procedure.

Anchor fails to fill, only partially fills, fails to reach surface of borehole.

There are a number of factors to consider here, check all the following possibilities:

- Grout mixture too thick either by incorrect mixing or outside the working time of the mixed grout (usually between 45 minutes and 1 hour, dependent on conditions.)
- Grout has passed its shelf life. Check date on side of bag.
- Anchor installed in a borehole of larger diameter than that for which it was designed. Check original order.
- Large voids are present tensioning the sock at the front of the anchor. A larger sock may be required.
- Insufficient pressure in the pot. Shut off the air from the compressor and check that the pressure pot is maintaining a constant pressure. If it is dropping, check for leaks. Remember, what is shown on the gauge is not necessarily what is in the pot because the air can be passing into the pot and straight out through any leaks.
- The sock has twisted during installation, preventing the grout passing the twist. Do not force or twist the anchor while inserting.
- Sock not distributed evenly before insertion, therefore there is too much sock at the front of the borehole preventing complete inflation.
- Failure to wet the sock. This is very important in porous substrates and in dry/hot weather conditions.

IMPORTANT POINTS TO CONSIDER BEFORE ORDERING ANCHORS

The anchor system is engineered for the specific installation, therefore as much information as possible about the type of substrate and possible voids etc. is required to enable us to manufacture the exact anchor to meet your requirements.

The minimum embedment depth of any anchor is 75 mm (3") unless test anchors have been installed to determine the load achievable with a reduced embedment.

The max length of an 8 mm (5/16") or 10 mm (3/8") CHS (circular hollow section) anchor in a 20 mm (3/4") hole is 500mm (20").

For lengths between 500 mm (20") and 1000 mm (39"), a 24 mm (1") hole is required for a 10 mm (3/8") CHS.

The general rule is that the borehole must be twice the diameter of the anchor body utilized. This is only applicable up to certain lengths and the hole size must be increased on longer anchors.

The guidelines are as follows:

8mm (5/16") CHS	20mm (3/4") borehole up to 500mm (20")
10mm (3/8") CHS	20mm (3/4") borehole up to 500mm (20")
10mm (3/8") CHS	25mm (1") borehole up to 1000mm (39")
10mm (3/8") CHS	32mm (1 1/4") borehole up to 2000mm (6'6")
15mm (5/8") x 15mm (5/8") SHS	32mm (1 1/4") borehole up to 3000mm (9'9")
20mm (3/4") x 20mm (3/4") SHS	40mm (1 1/2") borehole up to 3000mm (9'9")
30mm (1 3/16") x 30mm (1 3/16") SHS	60mm (2 1/2") borehole up to 4000mm (13'0")
M10 (3/8") studding	32mm (1 1/4") borehole up to 1000mm (39")
M12 (1/2") studding	32mm (1 1/4") borehole up to 1000mm (39")
M16 (5/8") studding	40mm (1 1/2") borehole up to 3000mm (9'9")
M20 (3/4") studding	50mm (2") borehole up to 4000mm (13'0")

CARE OF ANCHORS AND GROUT

The anchors and fixings are supplied with the correct amount of grout. Care must be taken not to waste grout. The anchors, fixings and grout should be stored safely away from all work areas until needed.

GROUT

Store grout in a dry place off the ground. NEVER allow the grout to become damp, or wet, or store in a place where the temperature can drop below 5ºC (41ºF).

NB – The marriage of steel and fabric is very delicate and the anchors must be treated accordingly to ensure that no damage to the fabric sock occurs. DO NOT leave anchors lying around on the ground or on scaffolding. NEVER use anchors to test the hole depth.

NOTES AND METHOD STATEMENT FOR GROUT FILLED CARTRIDGES

1. Use small clean container E.G. plastic paint bucket and measuring jug.
2. Remove back plug from container, pour grout contents into the mixing pot, gradually add small amount of clean water stirring until the consistency is a smooth medium thick cream.
3. Mix for at least four minutes with a whisk then allow to stand for a further four minutes and whisk again.
4. Pour the mixed grout back into the container and replace back plug securely.
5. Remove nozzle to remove inner plug and replace nozzle.
6. Place container into master gun, insert nozzle into back of anchor and proceed to pump.
7. Pump until trigger is stiff, hold for 10 seconds, release safety catch and withdraw slowly from the anchor.
8. Repeat the same process for each anchor.

NB – If you use a re-usable mastic/grout gun. These hold approximately ½ litre (0.11351 US Gal) of grout. Therefore 220 ml (0.058118 US Gal) of water to 1 kg (2.2 lbs) of grout is enough for one fill, which will pump 5 RAC standard anchors. The water ratio can be altered slightly dependent on weather conditions. Mix as above for at least four minutes, allow to stand for four minutes, mix for a further minute.

Stages

Step 1	Measure 220 ml (0.06 US Gal) of water into a clean container and slowly add 1 kg (2.2 lbs) of grout, whisk thoroughly for four minutes and allow to stand for a further four minutes and whisk again. The mixture should be smooth and creamy with no lumps.
Step 2	Pour mixed grout into front of gun and replace tap assembly.
Step 3	Turn off tap and pressurize gun.
Step 4	Push nozzle on anchor and open valve. When anchor is full, keep pressure on for 10 seconds, close valve and remove nozzle.

If you use a metal grout gun, grout on occasions collects at the base. To overcome this problem, do not fully empty the gun, and remove excess grout. Swill all parts in a clean bucket of water between each mix.

NB – Metal hand grout guns must be washed and full cleaned and thoroughly dried, after use. DO NOT oil cylinder as this would contaminate the grout.

Failure to carry out above will result in rusty equipment.

CONSTRUCTION SITE SAFETY CHECK LIST

The information that follows is derived from Cintec experience worldwide. It is supplied in good faith, but is not intended to be used in place of any statutory requirements. Occupational Health and Safety regulations that apply in the area in which the installation is being carried out must be adhered to at all times.

Safe access

- Can everyone reach their place of work safely, i.e. are there good roads, gangways, passage ways passenger hoists, staircases, ladders and scaffolds?
- Are all walkways level and free from obstructions such as stored material and wastes?

- Are there adequate barriers or other edge protection to stop falls from open edges of buildings, gangways etc.?
- Are holes and openings securely fenced off or provided with covers?
- Is there adequate artificial lighting when work is carried out after dark or inside buildings?
- Is the site tidy and are materials stored safely?
- Are there proper arrangements for collecting and disposing of scrap?
- Have nails in timber been hammered down or removed?

Ladders

- Are ladders the right equipment to use for the job or should a scaffold be provided?
- Are all ladders in good condition?
- Are ladders secured near the top (even if they will be used for only a short time)?
- If ladders cannot be secured at the top, are they secured near the bottom, weighted or footed to prevent slipping?
- Do the ladders rise the required minimum distance above their landing places or the highest rungs used (refer to appropriate regulations)? If not, are there adequate handholds?
- Are the ladders properly positioned for access?

Tubular scaffolds

- Is there proper access to the scaffold platform?
- Are all uprights provided with base plates (and, where necessary, timber sole plates) or prevented in some way or other from slipping or sinking?
- Have any uprights, ledges, braces or struts been removed?
- Is the scaffold secured to the building in enough places to prevent collapse?
- If any ties have been removed since the scaffold was erected have additional ties been provided to replace them?
- Are the working platforms fully covered?
- Are boards free from obvious defects such as knots and are they arranged to avoid tipping or tripping?
- Are there effective barriers or warning notices to stop people using an incomplete scaffold e.g. one that isn't fully boarded?
- Where the scaffold has been designed and constructed for loading with materials, are these evenly distributed?
- Does a competent person inspect the scaffold regularly i.e. at least once a week and always after bad weather?
- Are the results of inspection recorded (including any defects that were put right during the inspections) and the records signed by the person who carried out the inspections?
- Is there safe access to the excavation e.g. a sufficiently long ladder? Are there barriers to stop people falling in? Is the excavation affecting the stability of neighbouring buildings? Are stacked materials, spoil or plant stored near the edge of the excavation likely to cause a collapse to the site? If vehicles tip into the excavation, are properly secured stop blocks provided?

Machinery

- Are there any dangerous parts e.g. exposed gears, chain drives, projecting engine shafts?
- Are the dangerous parts adequately guarded?
- Are guards secured and in good repair?

Electricity

- Are all portable electric tools and equipment run from a power supply with earth leakage circuit breaker protection?
- Can you see any signs of damage or interference with equipment, wires and cables? Where required, have power tools been checked and tagged by a licensed electrician?
- Are all connections to power points made by proper plugs?
- Are connections to plugs properly made so that the cable grip holds the cable firmly and prevents the earth wire from being pulled out?
- Are there any overhead power lines? Where anything might touch the lines or cause arcing (cranes, tipper lorries, scaffolding etc.), has the electricity supply been turned off or other precautions taken to prevent such contact with the lines?
- Have underground electricity cables been located (with a cable locator and cable plans), marked and precautions taken to avoid contact with them?

Noise

- Are breakers fitted with muffs?
- Is other plant or machinery fitted with silencers?
- Do workers wear ear protection if they have to work in very noisy surroundings?

Protective clothing

- Is equipment provided to protect the head, nose, hands and feet?
- Does the equipment meet at least the minimum standard required by law?
- Do workers wear their protective equipment?

Welfare

- Has a suitable toilet been provided?
- Is there a clean washbasin, soap and towel?
- Is wet weather gear provided for those who have to work in wet conditions?
- Is there a site hut where workers can sit and make tea?
- Is there a first aid box?

Site cleaning

Site tidiness is the foundation of safety and of a job well done.

Always keep your immediate surrounding clean and clear of debris and unwanted plant. This must sound obvious, but surprisingly few people adopt this procedure. Just taking a few minutes care by inputting away unwanted tools and equipment will give more room, work space and a clean and level base to work from, saving you time in the long run. This means that it is safer for you and your workmates. They do not slip, trip or step on articles that have been dropped.

A clean site is a well run site.

PRESSTEC GROUT & HEALTH & SAFETY

Presstec grout has been addressed in accordance with the classification, packaging and labeling requirements of regulations pertaining to dangerous substances in various countries and Cintec takes the view that it is not a dangerous or hazardous substance. Precautions common to the handling of Portland cement, slaked lime and products containing them are applicable to the handling of Presstec grout.

The only precaution that needs to be taken when handling Presstec grout is the common sense one of elementary hygiene. Unnecessarily prolonged contact on the skin, particularly when damp, should be avoided. Gloves should be worn when handling Presstec grout bags. If Presstec grout is in contact with the skin, it should be washed of as soon as possible. If Presstec grout enters the eye it should be immediately washed out thoroughly with clean water and medical treatment sought immediately. Eye protection and respiratory protection should be worn when working in dusty conditions.

Presstec grout powder mixed with water releases alkali. Concrete or mortar adhering to the skin should be removed as soon as possible by washing with soap and water. Delay may cause skin irritation.

Waterproof gloves, eye protection, (safety) gum boots, full-length trousers, long sleeved shirts and other suitable protective clothing should be worn when working with the mortar.

Material Safety Data Sheets

Appended is the European Community "C.O.S.H.H." sheet is provided as the M.S.D.S. in accordance with the format provisions of Section 6 of the Code of Practice for the Preparation of Material Safety Data Sheets.

These notes are for guidance only. If you have any queries on the Cintec Anchoring System please contact us at the address below.

CINTEC International Limited
Cintec House, 11 Gold Tops,
Newport, South Wales, NP20 4PH, UK

Tel: 044 (0) 1633 246614
Fax: 044 (0) 1633 246110

CINTEC America Inc.
510 McCormick Drive, Suite Q,
Glen Burnie, MD 21061

Tel: 1-800-363-6066
Fax: 1-800-461-1862

CINTEC Canada Limited
38 Auriga Drive, Suite 1,
Nepean, ON K2E 8A5,

Tel: (613) 225-3381
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CINTEC Australasia Pty Ltd
40 Tyrell St., P.O. Box 141,
Newcastle, NSW 2300, Australia

Tel: +61 (0) 2 4929 4841
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PRESSTEC™ standard
Micro Injection Grout
Manufactured Exclusively For
Cintec Anchoring & Reinforcement Systems

Presstec grout is a one component dry powder mix. Its basic ingredients include natural and Portland cements with graded aggregates, including sand and lime products. The constituents, when mixed with water, produce a non-shrink, low pressure injection grout for use with Cintec's patented anchoring system. The grout does not contain any resin binders.

Presstec grout is a proprietary pure mineral grout tested in accordance with the strict German DIN standards.

Quality Control

Each batch of grout is controlled and inspected by the producer's certified laboratory. Third party inspection is made by MPA NRW (The Quality Testing State Institute). All reports are finally checked by an independent consultant.

Features & Benefits

- Single component: easy to mix, just add water
- Factory controlled: Superior quality control and batch to batch consistency.
- Contains no resigns: Sympathetic and compatible with masonry substrates physical properties.
- Water based: Environmentally & user safe. No solvent clean up or disposal problems.
- Independently tested: 2 hour fire resistance, freeze/ thaw protection, extensive pull out/shear test verification results

Safety Requirements

Safety goggles, gloves and a dust mask equipped with P2 filters (or equivalent) should be worn for protection during mixing.

Please refer to MSDS sheet.

Packaging

Presstec is packed in twin lined 25 kg (55lb.) quality control stamped paper bags An inner lining is added for additional protection

Limitations

- Do not use Presstec grout with frozen or hot substrates. The injected grout must be protected from extreme heat and freezing conditions
- Clean water used for mixing should be within the temperature range of 10° - 24° C (50° - 75°F)
- Do not add latex bonding agents or any other additives to Presstec grout

See Contractor's Notes for cold and hot weather working.

Mixing
FOLLOW INSTRUCTIONS PRINTED ON THE BAG

The mixing ratio is approximately 6 liters to 25 kg of powder. Mix mechanically with an electric drill capable of at least 500 rpm equipped with a Jiffler type mixing paddle. After mixing, the grout should be strained through a sieve before loading into the required injection equipment. Additional or repeated agitation is necessary if the grout is allowed to sit prior to use.

Clean Up

Clean any surface spills with water before the grout has time to set. Use a clean sponge or non-staining brush and clean water. Repeat several times as needed, rinsing the sponge/brush with clean water. Check regularly for excess grout runs and spills on surrounding masonry surfaces. Remove uncured grout from tools and equipment with water.

Storage & Shelf Life

become damp or wet or store in a place where the ambient temperature can drop below 5° C (41°F).

Technical Data - Presstec Injection Grout

Compressive Strength	**28 Days**		**5800 - 7500 psi**
Tensile Strength	**28 Days**		**480 - 650 psi**

WARNING
NOT FOR INTERNAL CONSUPTION.KEEP OUT OF REACH FROM CHILDREN AND ANIMALS CONSULT MATERIAL SAFETY DATA SHEET [MSDS] FOR SPECIFIC INFORMATION

CINTEC NORTH AMERICA
TEL 1 800 363 6066
1 613 225 3381

WWW.CINTEC.COM

APPENDIX A
Material Safety Data Sheets
for Presstec Grout

M.S.D.S
ISSUED MARCH 2009

CINTEC North America

PRODUCT

Trade Name & Synonyms	Presstec Cementitious Injection Grout		
Chemical Name & Synonyms	Mineral Bound Injection Grout		
Chemical Family	Dry Mineral Materials		
Manufacture / Supplier	Cintec North America	*Tel.N°*	1-613-225-3381
Address	510 McCormick Drive,Suite Q, Glen Burnie ,MD 21061		

HAZARDOUS COMPONENTS OF MIXTURES

Component	Cement, Lime etc. in Various Proportions	*Percentage*	20 - 50
Hazardous Data	XI: Recommended OES 5 mg3 Inhaled Dust (8 Hour TWA)		

PHYSICAL DATA

Appearance & Colour	Grey Colour, No Odour	*Boiling Point °C*	None	*Melting Point °C*	>1000
		Boiling Point °F	None	*Melting Point °F*	>1832
Vapour mmHG Pressure @ °C	Vapour Density Air 1	*Percentage Volatile*	N/A	*Evaporation Rate*	Butyl Acetate 2
Solubility in Water	Grade 3	*Solubility in Organic Solvents*	N/A		
Flash Point °C	None	*Auto Ignition °C*	None	*Evaporation Rate % by Volume*	None
Flash Point °F	None	*Auto Ignition °F*	None		

FIRE & EXPLOSION HAZARD

Fire Extinguishing Media	*Small Fires*	N/A	*Special Fire Fighting Procedures*	N/A	*Hazchem Scale*	N/A
	Large Fires	N/A	*Unusual Fire and Explosion Hazard*	N/A	*N.F.P.A. Code*	N/A

SPILL OR LEAKAGE PROCEDURE

Steps to be taken in case material is released or spilled	Scrape or brush up all excess material avoiding production of airborne dust
Waste disposal method	Dispose of as 'Building material waste' at a licensed site. Avoid uncontrolled distribution in water (rivers and waterways) and drainage systems

HANDLING

Protective Clothing	Coveralls, Boots, Impervious gloves, Eye protection (Goggles).
Respiratory Protection	A dust mask may be required if handling or mixing in confined spaces
Ventilation	Ensure adequate ventilation when handling dry powder

APPENDIX A
Material Safety Data Sheets
for Presstec Grout

TRANSPORT & STORAGE

Transport / Storage Temp. °C	-10 to +50	*Loading / Unloading Temp. °C*	-10 to +50	*Static Hazard*	None
Transport / Storage Temp. °F	14 to +122	*Loading / Unloading Temp. °F*	14 to +122		
Conditions to Avoid	Storage with acids	*Remarks*	Limited storage time of 6 months. Store in a cool dry place		

REACTIVITY

Stability	Stable	*Conditions to Avoid*	Acids		
Hazardous Decomposition Products	None	*Hazardous Combustion Products*	None		
Hazardous Polymerisation	None	*General Nature*	*Alkaline reaction on wet surfaces*		
Incompatible Materials to Avoid	Acids				

HEALTH / NATURE OF HAZARD AND TOXICITY DATA

Inhalation	Irritation of the respiratory tract likely if exposure standard exceeded
Eye Contact	Irritation with risk of serious damage
Skin Contact	When mixed with water (e.g. sweat) may cause irritation (cement burns)
Ingestion	Irritation and chemical burns due to alkali release when in contact with body fluids

HEALTH / FIRST AID

Inhalation	Remove to fresh air
Eye Contact	In case of contact with eyes - rinse immediately with clean water and seek medical advice
Skin Contact	Avoid contact with saturated clothing. After contact with skin wash immediately with soap & water
Ingestion	Wash mouth and throat with clean water and seek medical advice. DO NOT INDUCE VOMITING

HEALTH - SPECIAL PRECAUTIONS

Chronic unprotected over exposure may cause allergic contact dermatitis after prolonged skin contact

REMARKS AND / OR ADDITIONAL INFORMATION

The above mentioned remarks and comments are given according to the manufactures security data sheet 91/155/EWG which complies with the German DIN 52900

Atkinson-Noland & Associates, Inc.
2619 Spruce Street
Boulder, CO 80302
Phone: (303) 444-3620
Fax: (303) 444-3239
www.ana-usa.com

REPORT OF COMPRESSIVE STRENGTH TEST DATA

TO: Cintec North America
510 McCormick Drive
Suite Q
Glen Burnie, MD 21061

JOB NO.: 08-025
TEST DATES: 02/15/08; 02/20/08; 03/11/08
TEST PERFORMED BY: AJR

MIX DESIGNATION: Presstec anchor grout

AGE AT TESTING: 3 Days

Sample	Width 1 (in)	Width 2 (in)	Length (in)	Area (in^2)	Maximum Load (lbs)	Compressive Strength (psi)	Type of Fracture
1	2.15	2.38	4.18	5.12	33490	6479	cone and split
2	2.18	2.24	4.19	4.88	31979	6549	cone and split
3	2.22	2.35	4.10	5.22	37428	7031	cone and split

Average: 6686 psi
Std. Dev.: 300.3
CoV: 4.49 %

AGE AT TESTING: 8 Days

Sample	Width 1 (in)	Width 2 (in)	Length (in)	Area (in^2)	Maximum Load (lbs)	Compressive Strength (psi)	Type of Fracture
1	2.1	2.1	4.58	4.41	32500	7296	columnar
2	2.3	2.2	4.71	5.06	35000	6917	columnar

Average: 7106 psi
Std. Dev.: 268
CoV: 3.8 %

AGE AT TESTING: 28 Days

Sample	Width 1 (in)	Width 2 (in)	Length(in)	Area (in^2)	Maximum Load (lbs)	Compressive Strength (psi)	Type of Fracture
1	2.11	2.22	4.51	4.68	47229	10000	cone
2	2.03	2.15	4.87	4.36	39649	9084	cone
3	2.2	2.11	4.83	4.64	48117	10336	cone

Average: 9817 psi
Std. Dev.: 660.3
CoV: 6.73 %

NOTES: Specimens were sampled in accordance with ASTM C42 and tested in accordance with ASTM C1019.

COLORADO REGISTERED 3-28-08 MICHAEL P SCHILLER No. 29544 PROFESSIONAL ENGINEER

AJR — LAB TECHNICIAN
MPS — REVIEWED BY

APPENDIX B

CINTEC PRODUCT INFORMATION UPDATE

NO 1/99: ALTERATIONS OF ANCHORS

We have recently experienced a number of instances where the anchors have been physically altered on site without our knowledge or approval. This is an extremely dangerous practice and apart from breaching the conditions of warranty, there is a possibility that the anchors would not meet their performance specifications. We fully understand that, periodically, problems will occur on site, but we ask that you contact us on such occasions so that checks can be made to ensure the anchors perform to the required specifications and the new dimensions can be entered into our records.

NO 1/02: PRESSTEC GROUT – HEALTH & SAFETY AT WORK

Whilst working on site, an operative was injecting an anchor with Presstec grout and some of the grout splashed into his eye. The eye was damaged and the operative is now undergoing surgery. Whilst he was working he was not wearing protective goggles.

It is essential that personnel wear goggles while mixing or working with Presstec Grout. This requirement is specified in the COSHH Statement, is emphasised during training carried out by Cintec staff and is clearly laid down in the Training Manual.

CINTEC

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