

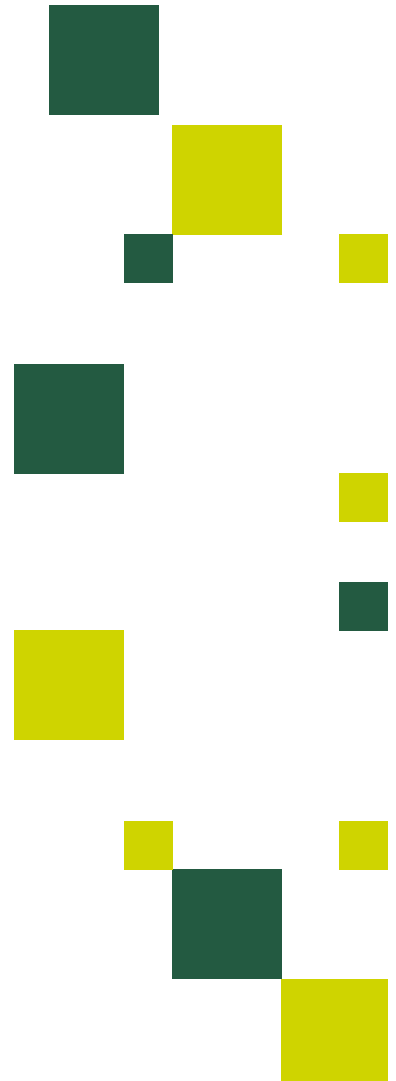


NATCEM D

INSTRUCTION FOR USE

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DRY PRE-BLENDED GROUT

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Supplier Details

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This Instructions For Use document is written specifically for Water Companies for use with drinking water only

1 Product Description and Scope of Use

NATCEM D is a natural cement in the form of a dry pre-blended fine powder grout, consisting of a blend of natural cement based binder and retarders resistant to chloride penetration.

It is intended for use in drinking water system applications as a void filling and ground stabilising waterproof grout.

2 Application

a) Packaging

NATCEM D is packaged in a polythene inner bag with re-sealable pull tie within a sealed woven polypropylene outer bag. Bag Weight: 25kg

b) Storage

NATCEM D should be stored in dry conditions and an unopened bag will last for at least twelve months. A part used bag will also last twelve months provided it is re sealed using the pull tie..

c) Surface Preparation

- NATCEM D must not be applied to frozen or overheated surfaces i.e. outside the temperature range 0°C to 30°C.
- The surface to which the NATCEM D will be applied must be thoroughly dampened..

d) Mixing

- Add the NATCEM D gradually to fresh clean water. Mixed with 40% water, a 25kg bag will produce approximately 10 litres of finished grout. The maximum volume of water to be used is 14 litres per 25 kg bag.
- NATCEM D is designed to give a fluid mix but this only develops after sufficient mixing. The mix will appear dry at first. Continue mixing until fluidity develops.

The minimum mixing time is 2 minutes to ensure the correct fluidity.

When fully mixed the product has a consistency of thin paste.

Exceeding this ratio will lead to lower strength, longer setting time and the risk of surface cracking. In cold weather the set can be accelerated using warm water at approximately 20°; similarly in warm weather, cold water can be used to slow down the set.

e) Using NATCEM D

- Apply the mixed NATCEM D as quickly as possible after mixing using traditional tools.
- Once setting has started, DO NOT attempt to re-mix because this will impair the mechanical properties and in particular, cause the strength and adhesion to be lost.

f) Setting times

Setting time is the time from mixing of the products to its set condition.

After application, NATCEM D is designed to commence setting at 35 minutes and to finish setting at 45 minutes at a temperature of 20°C. At temperatures higher than 20°C the setting time will be shorter.

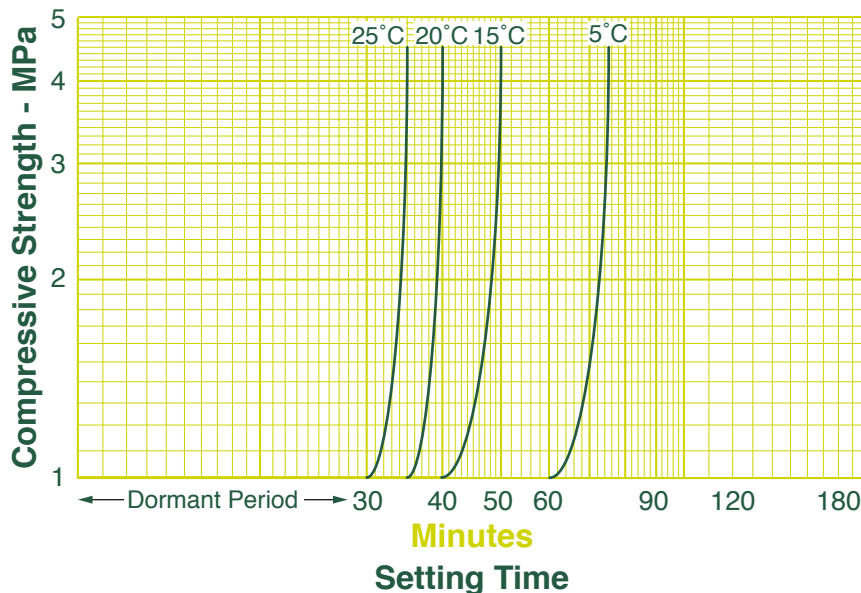
These setting times are based on a 40% water mix. It is not recommended to use less than 40% water otherwise mixing will be more difficult; it will set faster and the strength gain will commence earlier making the material more stiff and the material may be more difficult to apply.

The table provides typical setting duration based on a 40% mix ratio and at varying temperatures which is also graphically represented below as setting curves.

It should be noted that no further curing takes place and that the material may be returned to service 60 minutes after the end of the setting period.

Compression strength however will continue to increase with time over many years.

	Start Set Minutes	End Set Minutes
5°C	60	75
15°C	40	50
20°C	35	40





g) Disinfection

NATCEM D material does not require any further cleaning or disinfection above the usual procedures employed by companies or water utilities.

h) Cleaning

NATCEM D should be removed from tools and equipment with water immediately after use.

3 Waste Disposal

a) Empty bags

Empty inner polythene bags and outer polypropylene bags can be returned to the user's stores for recycling.

Alternatively they can be disposed into a skip destined for landfill.

b) Waste material

Dispose of waste material in compliance with local by-laws, national legislation and/or EC regulations

i) Material after the addition of water – hardened

Dispose of the hardened product as concrete waste. It is a non-hazardous material and may be disposed in appropriate landfill sites.

Avoid introduction of this material into sewer systems, waste water disposal networks and water courses.

ii) Material – slurry

Leave to harden and dispose of as in 3 b) i) above.

iii) Material – unused residue or dry spillage

Pick up dry. Mix with water and allow to harden. Dispose of as in 3 b) i) above.



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4 Safety

- a) Wear suitable protective clothing when handling bags and mixing the material.
- b) Wear safety glasses, work gloves and dust mask.
- c) Avoid spillage from damaged bags
- d) Avoid breathing the powder
- e) Avoid raising dust especially when sweeping. When mixing, always add the powder to the water to avoid raising dust.
- f) Avoid skin contact with the wet cement during the setting reaction.
- g) Discard immediately any clothing which becomes saturated with wet cement.

It is important to read the NATCEM D Material Safety Data Sheet (MSDS) for full details prior to using the material.

The MSDS is available on request from Natural Cement Distribution Ltd. Contact details are shown on Page 2 of these Instructions.



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