

NATCEM® 35

Product Data Sheet



Environmentally friendly, fast setting R4 mortar with rapid strength gain.

Description

NATCEM 35 is an environmentally friendly, fast setting mortar with rapid strength gain, suitable for installation up to any thickness from **a minimum of 10mm**. The product consists of a blend of Natural Cement binder, retarder and specially selected graded aggregates all passing a 2mm sieve.

Applications:

- Concrete repairs
- Waterproof renders
- Floor screeds & repairs
- Grouting / void filling
- In contact with potable drinking water
- Sewers / Wastewater environments
- Marine & Coastal applications
- Swimming pools
- Suitable for use underwater
- Pointing
- Use in rivers & canals
- Environmentally sensitive areas
- Conservation of historic buildings
- General repairs and construction
- Suitable for repair methods 3.1, 3.2, 3.3, 4.4, 7.1 & 7.2 as defined by BS EN 1504-3

Properties

- Fast set with rapid strength gain
- Only requires the addition of water
- Sulphate resistant
- Resistant to chloride penetration
- High chemical resistance
- Waterproof
- Approved for use in Public Water Supplies
- Sets underwater
- Can be used down to 0°C
- Environmentally friendly
- Very low shrinkage
- High compressive strength
- Fast cure, can be over-coated one hour after set

Yield & Coverage

Generally, 1 x 25kg bag of NATCEM 35 mixed with 3.6 litres of water will produce **12.5 litres** of finished mortar. Each 25kg bag of NATCEM 35 when mixed will cover approximately **1.25m²** at 10mm depth before wastage.

Setting Time & Strength Gain

Start Set End Set	35 Min 40 Min	at 20° at 20°
	Flexible Strength (Mpa)	Compressive Strength (Mpa)
1 Hour	2.2	9
3 Hours	2.5	16
24 Hours	3	21
7 Days	5.9	45
28 Days	7.5	56
Complies with BS EN 1504-3 class R4		

Setting Times

NATCEM® 35 is designed to **commence setting at 35 minutes and finish setting at 40 minutes** at 20°C. In winter, NATCEM 35 can be used down to 0°C. The set will be slower but can be accelerated by using warm water. In hot temperatures, the set will be faster and can be slowed by using cold water or NATCEM SETTING RETARDER (see separate product data sheet).

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Method of use

Preparation

Do not use on frozen or overheated substrates (0°C–30°C). Prepare the surface in advance, ensuring it is well roughened to provide an adequate key. Any adhesion-reducing substances such as oil, paint, bitumen, grease or laitance must be removed by suitable means. On glazed brickwork, the joints should be raked out and the surface bush hammered to form a key. The surface to which the NATCEM 35 is applied should be clean, free from dust and thoroughly dampened. Where necessary, steel or aluminium mesh can be used.

Mixing

Each bag of NATCEM 35 should be mixed with between **3.6 and 4 litres of water**. For optimum results, mix using conventional mixing machines. Always place the water in the mixer or mixing container and add the powder. Gradually add the NATCEM 35 to **3.6 litres** of clean water per bag whilst continuously mixing the material. If one bag or less is to be used, the NATCEM 35 can be mixed with a Rose Bud type paddle attached to an electric drill (900 rpm, 1000w). Mix vigorously for at least 2 minutes after adding all the mixture to the water.

NATCEM 35 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. If greater fluidity is required, more water up to a total of **4 litres** may be used. Exceeding this ratio will lead to lower strength, longer setting time and the risk of surface cracking appearing.

Placing

After mixing, apply the material as quickly as possible using traditional tools. A 10mm minimum thickness of the material is always necessary. Do not apply additional water to the surface during finishing as this may cause surface cracking. Once the setting has started, DO NOT attempt to remix or to smooth the surface. This will cause the mechanical properties, in particular strength and adhesion to be lost.

Priming

There is no need to prime any exposed reinforcement, but if priming is preferred, a conventional system may be used.

Precautions & Storage

We strongly recommend the use of GLOVES, GOGGLES and MASKS. Full details are provided in the Safety Data Sheet. Clean all tools with water immediately after use.

NATCEM 35 is packaged in a polythene inner bag with a resealable tie within a stitch-sealed woven polypropylene outer bag that should be stored in dry conditions and will last for at least twelve months.

Over-coating

NATCEM 35 can be over-coated as soon as one hour after the initial set time by paints, plaster, or adhesives. Please refer to coating requirements before application or contact our technical department for suitability advice. When applying a finishing plaster to the surface of NATCEM 35, we recommend using Thistle Board Finish Plaster or Lime Plaster. We DO NOT recommend using Multi-Finish Plaster.

Bulking out

For deeper repairs and larger-volume placements, NATCEM 35 may be bulked out with clean, suitably graded aggregate to increase yield and provide a more economical mix. Aggregate size, addition rate, and mixing procedure shall be agreed with Natural Cement to suit the repair depth, reinforcement spacing, and method of placement. Contact the technical department at Natural Cement for guidance.

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Specification and Approvals

UK CA Marking

NATCEM 35 is UK CA marked to BS EN 1504-3 and suitable for repair methods 3.1, 3.2, 3.3, 4.4, 7.1, and 7.2 as defined by BS EN 1504-3.

Public Water Supplies (Potable Water)

NATCEM 35 is approved for use in UK public water supplies.
DWI REG.31 Approved - Certificate Number: 56/4/1090
WRAS Approved - Certificate Number: 240255058

Specification Clause

The repair mortar shall be NATCEM 35, a pre-bagged, single-component, natural cement-based mortar conforming to BS EN 1504-3 Class R4. The material shall be fast-setting, with rapid strength development, and suitable for installation from a minimum thickness of 10 mm. It shall require only the addition of clean water and shall only be installed on correctly prepared substrates. All preparation, mixing, and application shall be carried out in accordance with the manufacturer's current product data sheet and project-specific technical recommendations.

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DoP - NC/DOP/001

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NATCEM 35

EN 1504-3: 2005
Structural & non-structural repair methods 3, 4 & 7
Class R4

Compressive Strength	R4: $\geq 45 \text{ MPa} \leq$
Chloride Ion Content	0.05%
Adhesive Bond Strength	$\geq 2.0 \text{ MPa}$
Restrained Shrinkage/Expansion	$\geq 2.0 \text{ MPa}$
Carbonation Resistance	PASS
Elastic Modulus	$\geq 20 \text{ GPa}$
Reaction to fire	A1
Dangerous Substances	Complies with 5.4



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