

# Cornerstone Prompt Harbour Mortar - Data Sheet

## PRODUCT

**Harbour mortar** is a quick setting, dry ready mixed mortar made using Prompt, a Natural Cement that has been used throughout Europe since the mid-19<sup>th</sup> century and found exclusively in the French Alps close to Grenoble. Prompt (PNC) having demonstrated excellent characteristics during long term testing (submerged in La Rochelle Harbour for more than 50 years) has been deemed suitable for work at sea and meets French Standards for sea-water setting cements. While it can be used in numerous applications where a quick set is required, we have designed it for use around more aggressive marine environments, where a faster set is desirable working within the tidal window, to help prevent wash out or tidal scouring. It is supplied as a dry ready to use (add water) Factory blended mortar using kiln dried coarse sand and Prompt, combined with carefully selected additives to provide a longer open time for the mortar. With reduced shrinkage and a high degree of durability whilst maintaining good workability, along with many of the virtues of an eminently hydraulic lime mortar.

*Note: PNC although made from Argillaceous limestone is not classed as a natural hydraulic lime (NHL), it is fired in similar kilns and temperatures as that of NHL's but contains no free lime after calcining, it is not hydrated like NHL's only ground to a powder. However, if there were such a designation Prompt would be classified as an **NHL12**.*

**Binder:** Prompt Natural Cement (PNC)

**Mix Ratio:** 1 : 2 Unless otherwise requested

**Sand = CLS30:** Very clean sharp 50/50, 4 mm down flint. *Other equally good sands are available from our stock.*

The Cornerstone range of mortars are designed and manufactured in house, Harbour mortar is the strongest of our Marine Mortars but should you require a lower strength mortar or a lower modulus of elasticity etc. please consult us to discuss specific requirements.

## USAGE

Suitable for applications where the binder strength is appropriate to the host background/surface Cornerstone Harbour Mortar is designed predominately for use in aggressive marine environments especially where work is constrained by tidal action and tide race. Can be used in countless applications where an accelerated set is required without the need for chemical additions, with a proven track record in marine environments including saltwater.

The improved set is derived from the Prompt Natural Cement binder which has been tempered with citric acid to retard the setting time without compromising the mortar performance. Following the initial set, the mortar will continue to gain in strength over many months and this strength gain will be marginally improved in a saltwater environment, but not exceeded.

## SETTING TIME & USE

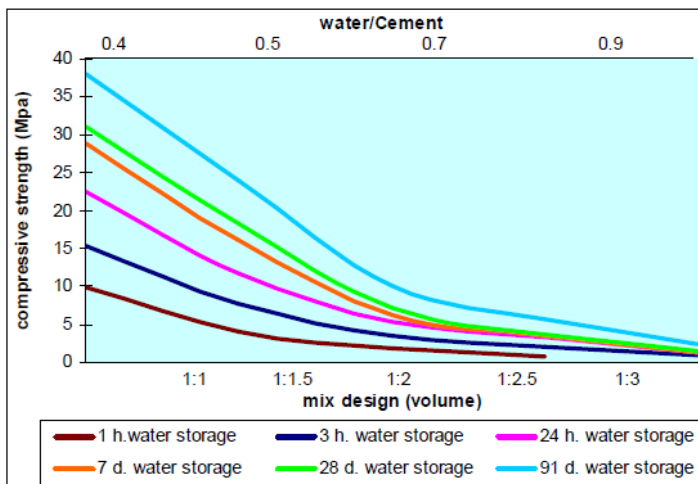
The setting time of Harbour Mortar is climate dependant and will be somewhat variable with a safe working time in the order of 30 minutes; which could quite easily be closer to 60 minutes in colder weather and possibly <20 minutes in very hot conditions. However, it's optimal use will come down to familiarity of use from those working with it, and their specific use of the material in each work environment. The main thing they should be aware of is that once the set starts, which will be noticeable from a stiffening of the mortar, it should be used very quickly (within minutes).

**AFTER setting starts: Do not add water, re-mix or temper in any way:** Setting only occurs once (risk of breaking the set).

Good housekeeping should be exercised to avoid waste and unnecessary fouling of the tools and equipment used for mixing and placing.

Harbour Mortar needs to be treated the same as lime mortars; while there is a rapid initial set the binder needs to be allowed to properly hydrate, which can only be achieved in the presence of adequate moisture. For works above the tide line, desiccation of the mortar must be avoided as this will result in a weak friable material of little performance value. Where required appropriate curing methods should be deployed and for further information please refer to our

## TECHNICAL PERFORMANCE



The data provided in the graph has been supplied by the Vicat Company, the manufacturers of Prompt as a guide to strength gain with the variables of water cement ratio and mix strength, and as such are relevant to the specific aggregates used.

COMPRESIVE STRENGTH		As determined by Cornerstone	
24 Hr	>5 Nmm <sup>-2</sup>	<b>Mix Ratio</b>	<b>1:2</b>
7 days	>5Nmm <sup>-2</sup>	<b>Dry Mortar Density</b>	1.8 KgL <sup>-1</sup>
28 days	>7Nmm <sup>-2</sup>	<b>Powder Density</b>	TBC

The Compressive Strength information in the table above is as tested by Cornerstone.

## PREPARATION

In general, this will be determined by the purpose and application of the mortar.

We would expect appropriate preparation in accordance with best practice; where the surface is clean, free of dust and other debris.

Where necessary the background should be adequately dampened to promote adhesion/bond with the host surface.

Dense impervious backgrounds/materials are unlikely to be very absorbent and require little to no dampening, whereas more absorbent backgrounds/materials require adequate dampening to prevent rapid drying.

Whilst Cornerstone Harbour Mortar includes additions to try and mitigate these issues, best practice still needs to be followed.

## MIXING

A bag of Harbour Mortar will require 4 to 5 litres of clean potable water. The water addition will vary according to the application and desired consistency/workability of the mortar. Always avoid making the mortar too wet, as this can promote shrinkage issues, especially when used as a render.

For drum type mixers, it is essential not to overfill the mixer.

As a dry mixed material, it is possible that some settlement or separation may occur in the bag during transit; therefore, when mixing part bags, it is especially important that the dry contents are thoroughly blended prior to mixing with water.

**Best Practice/Advised Mixing** - First add 60 to 70% water of the total water into the mixer, followed by the Cornerstone Marine Mortar and turn the mixer on. Allow the mortar to mix until the water is thoroughly distributed, then add additional water to achieve desired consistency.

**Other mix methods** - We accept that it is generally site practice to add the water to the mortar, providing the mortar is well mixed and not too wet, this method will be sufficient.

Hand held Paddle type mixers are especially good for mixing smaller quantities of this mortar.

As Harbour Mortar is a fast setting mortar we recommend its use as soon as possible after mixing and ensure that it is used prior to the initial set, which will be noticeable from a stiffening of the mortar, from when it should be used very quickly (within minutes). **AFTER setting starts: Do not add water, re-mix or temper in any way:** Setting only occurs once (risk of breaking the set).

Good housekeeping should be exercised to avoid waste and unnecessary fouling of the tools and equipment used for mixing and placing.

## YIELD & COVERAGE

After mixing, a bag will produce approximately 12 litres of mortar, sufficient to lay approximately 20 standard house bricks with a uniform 10mm joint.

## ADVANTAGES

- Quality controlled production.
- Consistency of mix ratio and working additions.
- Fast set, making it suitable for use in tidal areas.
- High durability making it suitable for use in aggressive environments.
- Significantly reduced risk of shrinkage.

## COLOURS

Cornerstone Marine Mortar is entirely natural in colour. No pigments or colourants are added.

For applications where colour is important (pointing, unpainted render finish), we strongly advise that sufficient quantities of mortar are purchased to complete a given project and we are notified to allow sourcing sufficient materials from the same batch to ensure consistency. However, please note that colour variation is still possible due to the use of natural sands

## PACKAGING

This product is supplied in polythene lined paper bags.

Pallets contain 40 x 25kg bags (1 tonne pallets).

The paper used is of prime quality and suitable for recycling, the packaging is a mixed material and should be recycled accordingly.

## STORAGE

This product should be stored in dry conditions, in unopened bags and clear from the ground. Always protect bags from water and damp.

Use within 3 months of manufacturing date (provided on each bag).

## HEALTH AND SAFETY

**RISK PHRASES:** R36 / R37 / R38 / R43

- Avoid contact with skin and eyes.
- Contact with wet mortar may cause irritation, dermatitis and/or burns.
- Contact between lime powder and body fluid (sweat, eye fluid etc.) may cause skin burns and respiratory irritation, dermatitis or burns.

**SAFETY PHRASES:** S2 / S24/25 / S26 / S37

- Avoid eye and skin contact by wearing suitable eye protection, protective clothing and gloves.
- Avoid breathing dust.
- Keep out of reach of children.
- On contact with skin and/or eyes, rinse immediately with clean water and seek medical attention.

### DECLARATION:

- Cornerstone lime mortars for renders and plasters are manufactured to the requirements of BS EN 998-1: 2010.
- Cornerstone lime mortars for masonry mortars are manufactured to the requirements of BS EN 998-2: 2010. These will contain no cement whatsoever unless stated.

**All Cornerstone products are CE marked and manufactured under an ISO9001:2015 accredited Factory Production Control System.**



Manufactured by Cornerstone Mortars.

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