

# HI SPEC PAVING

## High Strength Cementitious Hydraulic-Bonding Mortar & Grout

### Description

Hi Spec Paving is a high strength, cementitious, hydraulic-bonding mortar and grout. Typical uses include bedding of concrete, stone and granite elements and filling of joints over 6mm. The system is suitable for use on pedestrian or vehicular trafficked areas and complies with Highways Specification for Highway Works Clause 2601 in full.

Hi Spec Paving is based on non-reactive aggregate, low alkaline, shrinkage compensated Portland Cements with selected admixtures. It has controlled expansion and is non-shrink. The material has an excellent adhesive quality even on non-porous surfaces, such as granite.

### Advantages

- One pack for bedding and jointing.
- Excellent adhesion to a variety of materials.
- Good resistance to freeze/thaw cycle.
- Non-shrink.
- Suitable for pedestrian and carriageway use.
- Easy mixing and application.

### Surface Preparation

All substrates should be sound, stable, clean and free from laitence, oil and grease. Preferably, new concrete slabs should be at least 28 days old, shrinkage is more likely to occur in younger concrete. The use of spray applied curing membranes to concrete slabs should be avoided. If a spray applied curing system has been used, forming a film coating, this should be mechanically removed.

### Technical Information

Flexural Strength BS1881 Pt 118 1988	10.1 N/mm <sup>2</sup>
Tensile Splitting Strength BS1881 Pt 117 1988	4.95 N/mm <sup>2</sup>
Bond Strength BS1881 Pt 207 Clause 8 1992	>3.1 N/mm <sup>2</sup> (base failed before bond)
Compressive Strength BS 1881 Pt 116	
1 day	30 N/mm <sup>2</sup>
7 days	>51 N/mm <sup>2</sup>
28 days	75 N/mm <sup>2</sup>
Shrinkage (Coutinho Ring Test)	Specimen did not crack
Yield per 25 Kg Composite Pack -	
Bedding Mortar	11.5 litres
Joint Grout	13.0 litres
Freeze/Thaw Resistance	Good to Excellent
Resistance to de-icing salts	Good to Excellent
Heat Resistance	Tolerates steam cleaning
Application Temperature Range	5°C - 35°C
Cure Before Stress	24 hours
Vehicular Trafficking Times (for guidance only)	
Summer >15°C	7 days
Winter >5°C	7-10 days
Minimum Joint Width	6mm (detailed by specification)
Minimum/Maximum Bedding Thickness	20-75mm (detailed by specification)

## Priming

**Bedding Mortar** - concrete substrates should be thoroughly wetted 2 hours prior to placement of mortar and any excess water should be removed. We recommend that new asphalt or macadam be conditioned then primed with Nucem Primer, Nucem Emulsion Primer or Hi Spec Paving slurry. For undersides of paving elements, wetting down with clean water, or priming with Nucem Emulsion Primer or Hi Spec Paving slurry, will increase bond, especially when using lower water additions.

**Joint Grout** - it is not necessary to prime the sides of elements, however, porous elements should be dampened with clean water immediately prior to joint filling. Ensure side of elements are free from contamination.

## Mixing

It is recommended that a Cretangle or other forced action mixer is used for mixing Hi Spec Paving to ensure that material is thoroughly mixed and fully hydrated. Wet out and discard water from the mixing drum prior to use or when the drum is dry. Pour the appropriate amount of clean water into the rotating drum and gradually add the entire powder contents of the pack, mix for 1-3 minutes.

**To obtain wet Bedding Mortar** - use approximately 2.0-2.5 litres of clean water per bag (see limitations for semi dry mix).

**To obtain Joint Grout (slurry)** - use approximately 3.5-4.0 litres of clean water per bag.

## Application Instructions

**Bedding Mortar** - place mixed mortar onto the prepared substrate, then spread evenly and level to the desired depth with a steel or plastic float. Allow depth tolerance for compaction by setts ensuring that the material is laid without voids. Excessive compaction by float is not necessary. Do not allow mixed mortar to stand longer than 45 minutes before placing onto the substrate. Primer pavers and setts may be placed whilst the mortar bed remains wet and mobile under force.

**Joint Grout** - following placement of pavers or setts, grout should be applied into joints the next day and certainly within 48 hours, this will limit the risk of dirt contaminating the joint. Decant the mixed grout from the mixing vessel into a pail and allow de-airing for a few minutes. Using a suitable watering can or other type of applicator, pour directly into joints. For application by pump contact Nufins Technical Department. For flow-application, using a squeegee to move material into joints, care must be taken to remove grout from surfaces as soon as possible before hardening, prior treatment of sett and paver surfaces with Disbond sealer will assist removal. Alternatively, a mechanical belt-cleaner will assist cleaning. Ensure that the grout fills the joint to its full depth. After use clean tools and equipment immediately with clean water.

## Packaging

Hi Spec Paving is available in 25 kg bags (yield 13 litres approximately for Joint Grout and 11.5 litres approximately for Bedding Mortar).

## Storage

Materials should be stored in dry, frost free conditions. Shelf life 6 months for unopened packs when stored correctly.

## Health & Safety

Hi Spec Paving does not present any undue hazard and is non-toxic. However, as it is alkaline, gloves and goggles should be worn and any material washed from the skin and eyes with clean water before it dries.

## Limitations

Do not allow the primer on pavers or setts to dry before placing. If the surface of the bedding mortar is allowed to dry too long before placing setts, rather than applying water, the surface should be reworked, which will ensure that a good bond is achieved. Too little water addition to the bedding mortar may lead to desiccation and a weak mix. If there is requirement to use a semi-dry mix (1.5-2.0 litres clean water), contact Nufins Technical Department. Insufficient or excessive water additions will reduce strengths and cause segregation, affecting flow. Protect newly laid areas from frost. Contact Nufins Technical Department for application below 5°C.

## Technical Support

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors.

Technical representatives are available throughout the UK to provide further information and arrange demonstrations.



Kingston House, 3 Walton Road, Pattinson North, District 15, Washington, Tyne & Wear, NE38 8QA, United Kingdom.  
T. +44 (0)191 416 8360 F. +44 (0)191 415 5966 W. [www.nufins.com](http://www.nufins.com) E. [info@ulsuk.com](mailto:info@ulsuk.com)

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