

# CMI NON-SHRINK GROUT 222



## DESCRIPTION

CMI Non-Shrink Grout 222 is a general purpose, non-shrink cementitious grout composed of high strength cement, graded aggregates and special additives with an expansive agent. It can be used for gap thickness between 15mm up to 50mm for both flowable and pourable consistency.

## USES

Application of CMI Non-Shrink Grout 222 at flowable consistency include stanchion base plates, bolt pockets and void filling. At pourable consistency, CMI Non-Shrink Grout 222 is recommended for bedding load bearing components.

## TECHNICAL DATA

Mix Designs		Flowable (Water content 4.2 ltr/ 25 kg bag)	Pourable (Water content 3.8 ltr/ 25 kg bag)
Flow	BS Cone	~ 270 - 290 mm	~ 240 - 260 mm
	JA Cone	~ 7 - 12 sec	~ 18 - 24 sec
Initial Setting Time		~ 4 - 5 hrs	~ 3 - 4 hrs
Expansion at 24 hours		~ 0.60%	~ 0.40%
Compressive Strength	1 day	~ 20 - 25 N/mm <sup>2</sup>	~ 25 - 30 N/mm <sup>2</sup>
	7 days	~ 45 - 50 N/mm <sup>2</sup>	~ 50 - 55 N/mm <sup>2</sup>
	28 days	~ 60 - 65 N/mm <sup>2</sup>	~ 65 - 70 N/mm <sup>2</sup>
Flexural Strength	7 days	~ 5.0 - 6.0 N/mm <sup>2</sup>	~ 6.0 - 7.0 N/mm <sup>2</sup>
	28 days	~ 7.0 - 8.0 N/mm <sup>2</sup>	~ 8.0 - 9.0 N/mm <sup>2</sup>

The above tests were conducted under laboratory conditions in accordance with the following standards:

- Bleeding & Expansion ASTM C 940
- Compressive strength ASTM C 109
- Flexural strength BS 4551

The results above are typical data and given as a guide only. Site results may differ according to mixing process, placing, curing, etc. Preliminary tests are always recommended.

## SUBSTRATE QUALITY

Concrete, mortar and stone surfaces: Surfaces must be sound, clean, free from frost, oils, grease, standing water and all loosely adhering particles and other surface contaminants.

Metal surfaces (iron and steel): Surfaces should be clean, free from scale, rust, oil and grease.

## CMI CONSTRUCTION MATERIAL INDUSTRY SDN BHD (422636-D)

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## SURFACE PREPARATION

The substrate should be prepared by suitable mechanical preparation techniques such as high pressure water, breakers, grit blasting, scrab- bles, etc. All absorbent surfaces must be well saturated with clean water, but free of any surface water or puddles prior to the application of CMI Non-Shrink Grout 222.

## APPLICATION CONDITIONS / LIMITATIONS

Substrate Temperature +10°C min. / +40°C max.

Ambient Temperature +10°C min. / +40°C max.

At temperatures below +20°C, setting time and strength development will be slower. Non-shrink grout contains additives which expand either during the plastic stage and / or the hardening stage to compensate for the shrinkage of the cementitious matrix. However, this 'non-shrink' property will be effective only if the material is not subjected to water loss.

## MIXING

Mix with water according to the ratio in the table below:

Consistency	Water (ltr) per 25 kg of grout
Flowable	4.0 - 4.4
Pourable	3.6 - 4.0

Add in about 70 - 80% of the premeasured clean water depending on consistency required into a clean container and gradually add the whole bag of CMI Non-Shrink Grout 222 into it while continuously mixing. Add the remaining water until the desired consistency is obtained. Mix for 2 to 3 minutes with a slow speed drill (500 rpm max.).

## APPLICATION

Use CMI Non-Shrink Grout 222 for grouting only. After mixing, stir lightly with a spatula for a few seconds to release any entrapped air. The grout is then poured immediately into the prepared formwork. When carrying out baseplate grouting, ensure sufficient pressure head is maintained for uninterrupted mortar flow. For formwork repair, the prepared formwork must be firmly in place and kept watertight. When placing grout over a large area, it is important to maintain a continuous flow throughout. Work sequence must be properly organized to ensure an uninterrupted flow. In large areas, CMI Non-Shrink Grout 222 may be pumped using heavy duty diaphragm pumps. Screw feed and piston pumps may also be used.

For application thickness in excess of 50 mm, it is necessary to fill the CMI Non-Shrink Grout 222 with graded 10 mm silt free aggregates to minimize temperature rise generated during the curing stage. The quantity of aggregates should not exceed 1 part aggregates to 1 part CMI Non-Shrink Grout 222 by weight. For such mixes, a conventional concrete mixer and pump may be used. To further ensure that air entrapped during mixing is allowed to fully escape, it may be necessary to make breather holes. Use steel rods or chains to assist the flow of grout where necessary.

## COVERAGE

Approx. 13.0 – 14.0 litres mortar / 25 kg bag

## PACKAGING

Available in 25 kg bag

## SHELF LIFE & STORAGE

Six (6) months when stored in cool and dry condition

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*Remark: The information provided on this data sheet is not intended to be complete and is provided as general advise only. It is the user's responsibility to ensure that the product is suitable for its intended purpose. As we have no control over the treatment of the product, the standard of surface preparation, or other factors, we are not responsible for any damages or injury, including but not limited to special or consequential damages which may result from the use of our products, which includes any damages or injury caused by any failure of performance. The information contained in this data sheet may be modified by us from time to time, without any notice arising from our continuous product development activities.*