

SmartNS Grout 100

High Strength Pressure Grouting

SmartNS Grout 100 is our premium high strength cementitious non-shrink grout that is specially designed for pressure grouting. It consists of selected sand, cement and chemical additives to provide a free flowing and non-shrink grout with excellent strength performance. When cured, it is similar in appearance to concrete.



FIELDS OF APPLICATION

SmartNS Grout 100 is used for free-flow, non-shrink grouting in a wide range of applications such as:

- Cable Grouting
- Anchor bolts
- Structural members such as precast wall panel, beam and column, retaining walls
- Concrete repairs
- Crane rail assembly
- Underplate grouting
- Bedding bearing plates

BENEFITS

- Highly flowable
- Non-bleeding
- Non-shrink
- Pre-packed convenience and factory assured quality
- Consistent high strength performance
- High early and ultimate strength

TECHNICAL DATA (under laboratory conditions)

PROPERTY	TYPICAL RESULTS
Compressive Strength	
7 days	≥ 70 N/mm ²
28 days	≥ 100 N/mm ²
Setting Time	
Final set	≤ 10 hours
Volume Expansion (ASTM C940)	
@ 3 days	≤ 0.4%
Shrinkage	
@ 28 days	0%
Flow Consistency	10 – 30 seconds
Appearance	Grey
Pot Life*	
*Depending on weather conditions	30 – 45 minutes
Filler	Graded Sand
Yield	12 litres per bag (Estimated)
Holding Pressure	10 psi / minute or depending on site requirements

In actual site application, slight water / powder ratio adjustments can be made to achieve the consistency that is desired.

SURFACE PREPARATION

- Surfaces to be grouted should be clean, free from rust, laitance, grease, oil, dirt, paint and any other contaminants present.
- Surfaces to be grouted must be dampened with water before grouting and kept moist at all times during application.

MIXING

Flowable Consistency

- **SmartNS Grout 100** should be mixed with a mechanically powered mixer. Dampen the mixer blades with water prior to mixing the initial batch.
- The mechanically powered mixer should not contain any free-standing water.
- Place around 80% of the 3.8 litres of clean water into a mixing pail then add in **SmartNS Grout 100** powder slowly into the mixing pail and mix until a smooth and uniform consistency is achieved, then add in the remaining 20% of the 3.8 litres of clean water while still mixing until the desired consistency is achieved. The remaining water can be discarded.
- Mix for around 3 – 5 minutes until a homogeneous and lump-free mix is achieved.
- Note that this is for every 25 kg bag used.

Plastic Consistency

- To achieve a plastic consistency, the majority of the steps are the same as above. However, 2.8 litres of clean water will be used instead of 3.8 litres. Also, instead of 80%, pour 60% of the clean water by volume into the mixing pail slowly.

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DISCLAIMER

All information was prepared carefully, using current references available to us. Information provided is to the best of our knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself/ herself as to the suitability and completeness of information provided here for their intended use. We do not accept liability for any loss or damage that may occur from the use of this information.

Semi-Precast Grout Application (Stiff Plastic Consistency)

- We recommend using a plastic consistency for **SmartNS Grout 100** with a maximum of 2.5 litres of water per 25 kg bag when doing semi-precast grout applications.

PLACING

Large Volume Grouting

- For grouting thickness exceeding 75 mm, we recommend adding clean, well-graded 10 mm aggregates to reduce the temperature rise.
- Maximum 1 part of aggregate to 1 part of grout by weight.
- For mixing and placing, a conventional concrete pan mixer and pumps may be used.

Underplate

- Ensure that there are sufficient bags placed near the work site as **SmartNS Grout 100** must be placed quickly and continuously.
- Formwork must be sealed to prevent any grout leakage.
- A grout head must be maintained at all times so that a continuous grout front is achieved. It is advisable to use a hopper for this purpose.
- Placing should only be from one side of the void to prevent air or pre-soaking water being trapped.
- Ensure that no vibration is introduced during placing.

Pre-placed Aggregate Grout

- We recommend pumping or pouring the grout into place.
- This method will slightly reduce the compressive strength development as well as the ultimate strength of the concrete as opposed to flowing grouts.

Pumping

- **SmartNS Grout 100** may be applied via the use of ram, diaphragm and piston style grout pumps fitted with ball valves.

CURING & TREATMENT

- All exposed areas should be thoroughly cured after the finishing of the grout is completed.
- This should be done by continuous application of water or curing compound.

COVERAGE / YIELD

CONSISTENCY	MIXING WATER (per 25 kg bag) (Estimated)
Fluid	3.4 - 3.8 litres
Flowable	2.9 - 3.3 litres
Plastic	2.6 - 2.8 litres
Stiff Plastic (Semi-Precast)	2.4 - 2.5 litres

PRECAUTIONS

- Avoid eye and skin contact as the product is alkaline.
- Gloves, goggles and dust mask should be worn.
- Avoid inhalation of dust during mixing.
- Wash thoroughly after handling.
- In case of eye contact, flush with plenty of water. Seek medical help immediately.

PACKAGING & STORAGE

SmartNS Grout 100 is supplied in 25 kg bags and has a shelf life of 12 months if stored in a cool and dry place in sealed packaging with sheltered protection from rain and sunlight.

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