

SmartNS Grout HF

High Fluidity Non-Shrink Grout

SmartNS Grout HF is a high flow cementitious grout suited for a wide range of grouting needs. It is non-shrink and chloride free. It consists of selected sand, cement and chemical additives. **SmartNS Grout HF** is a cost effective grout with high fluidity. It is extremely flowable for use with gaps width of 10 to 100mm. When cured, it is similar in appearance to concrete.

FIELDS OF APPLICATION

SmartNS Grout HF is used for free-flow, positive expansion grouting in a wide range of applications.

- Base plates
- Hand rails
- Anchor bolts
- Bridge bearing plates
- Machine bases of all type
- Pressure grouting
- Structural members such as precast wall panel, beam and column.
- Concrete repairs

BENEFITS

- High fluidity
- Positive expansion
- No segregation
- Chloride free
- Pre-packed convenience and factory assured quality.

TECHNICAL DATA

- “ Fluid ” mixture has a flow of 10 to 30 s (when tested in accordance with ASTM C939).
- “ Flowable “ mixture has a flow of 125% to 145% (when tested in accordance with ASTM C827 at 5 drops).
- “ Plastic “ mixture has a flow of 100% to 125% (when tested in accordance with ASTM C827 at 5 drops).
- “ Stiff Plastic “ mixture has a flow less than 100% (when tested in accordance with ASTM C827 at 5 drops).

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.

Property	Typical Results			
Consistency	Compressive Strength (N/mm ²) ASTM C109			
	1D	3D	7D	28D
Fluid	17	31	37	70
Flowable	43	56	60	75
Plastic	44	64	65	80
Stiff-Plastic	54	76	79	83
Consistency : Fluid Flow (ASTM C939)	30 seconds			
Unrestrained Expansion at 3 hours (ASTM C 940)	1 - 3%			
Setting Time (ASTM C 953)	Initial Set		Final Set	
	3 - 4 hrs		5 - 6 hrs	

* All the data shown are based on controlled laboratory test (T=27±2°C and RH=60%)

In actual site application, slight water/powder ratio adjustment can be made to achieve consistency desired.

APPLICATION PROCEDURE

SURFACE PREPARATION

Foundation Surface

- Surfaces to be grouted should be clean, free from rust, laitance, grease and oil.
- Defective concrete surfaces must be cut back to a sound base.
- Bolt holes or fixing pockets must be blown clean of any dirt or debris.

Pre-soaking

- Several hours prior to grouting, the cleaned substrate should be flooded with fresh water.
- Immediately before grouting takes place, any free water should be removed. Particular care should be taken to blow out water in all bolt holes and pockets.

Base plate

- Base plate must be cleaned and free from oil, grease or scales. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Formwork

- A head box (a form sloped at 45° angle) should be built on the placement side of the installation. Allow a minimum clearance of 50mm for entry and 150mm minimum grout head.
- On the other side, allow 25mm horizontal clearance and 25mm vertical above the bottom of the base
- The formwork should include outlets for the presoaking water to be removed.
- Forms should be strong and leakproof, properly braced and oiled to retain the grout and provide relief holes if needed.

MIXING

- **SmartNS Grout HF** should be mixed with a mechanically powered mixer. For quantities up to 50kg a slow speed drill fitted with a high shear paddle is suitable. Large quantities above 50kg will require a high shear vane mixer. Do not use a colloidal impeller mixer.
- Add in slowly 25kg of **SmartNS Grout HF** into recommended amount of clean water in a mixing pail. Mix for 5 minutes until a smooth, even mix is achieved.
- Place grout within 15 minutes after mixing to gain full benefit of the expansion process. Do not mix extra grout or add extra water at this stage.

PLACING

- Place **SmartNS Grout HF** quickly and continuously. Normally the grout should be placed within 15 minutes of mixing to gain the full benefit of the expansion process. Placing should be from one side of the void to prevent air or pre-soaking water being trapped.
- 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.
- The flow distance is based on gap width and fluid head.

CURING & TREATMENT

- All exposed areas should be thoroughly cured after the placement of the grout is completed.
- This should be done by continuous application of water and/or wet hessian until the grout shoulders are ready to be finished.
- After finishing has been completed, all exposed grout should be coated with a quality curing compound or by continuous application of water and/or wet hessian.

COVERAGE / YIELD

Consistency	Mixing water	Yield
Fluid	5.0 lit	13.5 lit
Flowable	3.5 lit	13.0 lit
Plastic	3.25 lit	12.5 lit
Stiff-Plastic	3.12 lit	12.0 lit

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 HF is supplied in 25kg paper bag and has a shelf life of 9 - 12 months if stored in a cool and dry place in sealed packing with sheltered protection from rain and sunlight.

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