



MASTERING TECHNOLOGY AND PRACTICALITY

an ARDEXGROUP Brand

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# ST-NSG

## Non-shrink Grout

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**Expansion at early stage and shrinkage compensated at ultimate stage**

**High early strength and ultimate strength**

**Can be mixed to plastic, flowable and fluid states with different water addition**

**Free from chlorides, nitrates and sulphates**

**Low permeability and good waterproofing effect**

**Hydrogen free gaseous expansion**

**No bleeding or segregation**

**Non-toxic to human beings when contact with potable water**

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### PRODUCT DESCRIPTION

ST-NSG is a dry packed proprietary premixed shrinkage compensating cementitious precision grout. It is specially designed for use of grouting gaps, holes and base plates, etc. where excessive shrinkage is prohibited for the filling material. It can also be used, when mixed to a lower workability, as a patching material for minor repairs for honeycombs or for filling up tie-holes in concrete. ST-NSG is composed of Ordinary Portland cement, graded sand and non-shrink additives, which impart controlled expansion in both plastic and hardened states.

### AREAS OF APPLICATION

- Filling up gaps between reinforced concrete and/or precast concrete elements
- Grouting U-channel of glass balustrade
- Patching material for repairing concrete with or without waterproofing
- Structural concrete repair by grouting
- Filling up tie-holes in concrete
- Suitable for using in water retaining/ water tight structures without hazardous effect to human beings e.g. water tank, swimming pool, etc.
- Bridge bearings, Machine base plates, etc.
- Applying underwater or in tidal zone
- Consult Ardex Scoretech for other applications

### SUBSTRATE PREPARATION

The substrate surface must be free from oil, grease, or any loose particles. For grouting works, interfaces must be pre-treated to avoid scales, coatings, recessives, pockets, etc., which may hinder flow/spread of grout. Pressure relief holes/exit should be provided to allow venting at isolated high spots. At appropriate time before grouting, normally several hours, interfaces must be pre-soaked with fresh water and clear up all free water on surfaces thereafter. When levelling shims are used and are to be removed after the grout goes hardened, they should be treated with a thin layer of demoulding agent before installation. Formwork should be leak-proof. Rubber/polystyrene stoppers or sealants can be used at joints or bolt holes. For filling up tie holes or pockets, they must be cleaned to get rid of any dirt or debris before application of ST-NSG.

### INSTALLATION

1. For concrete repair/filling up tie bolt hole, mix ST-NSG with electric hand drill in bucket until the required consistency is achieved.
2. For grouting application, mix the material with ~80% of the recommended quantity of water for at least 3 – 4 minutes, then add the remaining water and mix for another 1 minutes to achieve the best flowability.
3. Sufficient grout must be made available in order to ensure continuous grouting operation. The mixed grout should be poured only from one side to the other side to reduce entrapment of air.
4. For large volume grouting, ST-NSG can be applied by pump such as heavy-duty diaphragm pump, screw feed pump, all-in-one grouting pump or piston pump, etc.
5. Please refer to the method statement provided by Ardex Scoretech for details.

### CURING

Natural air curing is normally adequate for ST-NSG. If condition allows, water curing can further ensure ST-NSG achieve the best performance.

### PACKAGE

30 kg bag

### SHELF LIFE

ST-NSG has a shelf life of 12 months if well-kept in dry condition on lifted floor.

### HEALTH & SAFETY

A qualified mask or equivalent personal protective equipment must be worn when handling this product. This product is non-toxic and does not contain harmful substances but may cause allergies or irritation to eyes and skin. If it accidentally comes into contact with eyes, rinse immediately with plenty of water and seek for medication.

### REFERENCE STANDARDS

- British Standard  
BS 6319; BS 1881;
- American Standard  
ASTM C827; ASTM C1090;  
ASTM C939
- Hong Kong Standard  
ArchSD General Specification;  
HKHA MTS Spec. Part D;  
CS1:2010;  
Product Certificate PCCS-RM  
(Class S)
- Water Regulation Advisory Scheme  
(WRAS)
- General Acceptance issued by Hong Kong  
Water Supplies Department (WSD GA)

### PRODUCT INFORMATION

Colour	Grey		
Maximum Grain Size	2.0 mm		
Consistency	Plastic (Concrete repair/ Filling up tie holes)	Flowable (Filling bearing plates)	Fluid (Grouting)
Water Demand	4.20 – 5.28 L	5.40 – 5.88 L	6.0 – 6.6 L
Wet Density	~ 2200 kg/ m <sup>3</sup>	~ 2150 kg/ m <sup>3</sup>	~ 2050 kg/ m <sup>3</sup>
Yield (1m <sup>3</sup> )	~62bags	~60 bags	~56 bags
Pot Life	~30 – 60 minutes		

### PRODUCT PERFORMANCE

Properties	Test Standard	Performance		
		Plastic	Flowable	Fluid
Compressive Strength at 28 days	CS1:2010-12	≥ 70 N/ mm <sup>2</sup>	≥ 65 N/ mm <sup>2</sup>	≥ 60 N/ mm <sup>2</sup>
Expansion between 3 to 28 days	ASTM C1090	No drying shrinkage is measured at age of 28 days		
Expansion within 24 hours	ASTM C827	The applied material will slightly expand at the initial 24 hours		
Figg Air Permeability	HKHA MTS Spec. Part D C1.2.1.7	> 250 seconds		
Chloride Content	CS1:2010-21	Nil		
Suitability for Use in Contact with Potable Water	WSD GA	Proven non-toxic and suitable for use in potable water tank		

\* Note: The test standards for the product performance stated above refer to laboratory test only.

### DISCLAIMER

As the application condition may vary from site to site and may not be identical to the same condition under which the parameters in the brochure are drawn. The information provided in this Technical Data Sheet is for general guidance only. Warranty will not be given to the ultimate performance and application results of this material when the material is not kept, mixed, applied or cured strictly in accordance with the requirements and/or instructions listed out in this brochure or in any other supplementary document.