



STERLING[®] FLOWMAX[®] NS200- CG

TECHNOTRADE Free Flow Non-shrink Powder Form Cementitious Grout Additive For Post Tensioned Cables.
The Specialist Construction Chemical Company

Description:

Sterling®FlowMax®NS200-CG is a high performance, expanding, non-shrinkage, flowable anchoring dry powder cementitious grout consisting of selected admixtures and expansive material which impart controlled expansion in the plastic state whilst minimizing water demand.

Sterling®FlowMax®NS200-CG is formulated to be mixed with a reduced amount of water to give the designed flow required. The addition of expansive and super plasticizer additives produce a fluid, non-blending, non-shrink expansive grout with extended working time. The mix also contains corrosion inhibitors additive to provide corrosion protection for post tension steel cables, anchorage and rods. Its fluid characteristics allow the product to be pumped through small openings over long distances and placed into relatively inaccessible areas.

Application Includes:

Sterling®FlowMax®NS200-CG is recommended for use in the following areas of application:

- In post tensioned cables used in segregation or plastic settlement shrinkage, high strength and resistance to chloride penetration are required.
- Bridges, deck ducts, etc. It is also suitable for use in cable ducts and pre-stressed structural elements.
- Grouting of post tensioning cable ducts in bridges and high-rise buildings.
- Pumping grout through small opening over long distances.
- Grouting cable anchorages for pre-stressed reinforcing steel in structural element.
- Slip form silo tendon ducts.

Areas to be grouted should be prepared to ensure substrates are clean, sound, and then pre-soaked. The unrestrained surface area of the grout must be kept to a minimum. Place the grout within 20 minutes of mixing to gain the full benefit of the expansion process. Adopt usual placing or pumping procedures ensuring a continuous operation.

64 to 78 litres of clean water (depending on nature of cement) and 200 kg of cement are required to be added per 12 kg Sterling®FlowMax®NS200-CG to achieve the correct consistency. 48 to 58 litres of clean water (depending on nature of cement) and 150 kg of cement are required to be added per 9 kg FlowMax® NS 200- CG to achieve the correct consistency.

The water should be accurately measured into the mixer. The total contents of the Sterling®FlowMax®NS200-CG bag should be slowly added with the cement and continuous mixing should take place for 5 minutes. This will ensure that the grout has a smooth even consistency.

Place the grout within 20 minutes of mixing. Sterling®FlowMax®NS200-CG can be placed in annular gaps of up to 60mm in thickness. Pumping should be from a single point to eliminate any air or entrapment of water used for presoaking. A heavy-duty diaphragm pump is recommended for pumping. Screw feed and piston pumps may also be suitable.

Limitations:

Low temperature working:

- For ambient temperatures below 10°C the formwork should be kept in place for at least 36 hours. When the air or contact surface temperatures are 5°C or below on a falling thermometer, warm water (30-40°C) is recommended to accelerate strength development.
- Normal precautions for winter working with cementitious materials should then be adopted.

High temperature working:

- It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice.
- Store unmixed material in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight. Try to eliminate application during the hottest times of the day.
- Keep equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.
- Make sufficient material, plant and labour available to ensure that application is a continuous process.
- Water (below 20°C) should be used for mixing the grout prior to placement.

Instructions & Usage:

To prepare for placement of Sterling®FlowMax®NS200-CG, ensure sufficient material available on site to ensure continuous grouting. All post tensioned Cables should be carefully cleaned with water prior to grouting process. Any free water must be drained out after cleaning. Cable anchorage should be sealed prior to duct grouting.

Dosage:

For quantity up-to 60 Kg, a slow speed drill fitted with a high shear paddle is suitable. Large quantities will require a high shear vane mixer. It is essential that machine mixing capacity and labour availability is adequate to enable the grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to maintain fluidity.

The selected water contents should be accurately measured and added into the mixes. Slowly add the cement and sand if required and Sterling®FlowMax®NS200-CG. Mix continuously for 5 minutes, making sure that a smooth even consistency is obtained.

Packaging:

Sterling®FlowMax®NS200-CG is supplied in Air tight 30 Kg HDPE bag.

Storage & Shelf Life:

Sterling®FlowMax®NS200-CG has a shelf life of 12 months if kept in dry store in its original packaging. High temperature and humidity storage may reduce this period.

Features & Benefits:

- Ready to use, requires only the addition of specified amount of water.
- Expansion system compensates for shrinkage and settlement in the plastic state.
- Develops high early strength without the use of chlorides
- High ultimate strength and low permeability ensure the durability of the hardened grout.
- Compatible with ordinary Portland Cements complying with BS 12 and ASTM C150
- Reduces the ingress of harmful substances.
- Low permeability grout at low water /cement ratio.

Cleaning:

Grout mixed with FlowMax® NS 200- CG should be removed from tools and equipment with clean water immediately after use.

Yield:

Approximately 68 litre of mixed grout is obtained when mixing 6 kg Sterling®FlowMax®NS200-CG, 100 kg cement and 34 liter water.

Health & Safety Instructions:

Sterling®FlowMax® HF200 is formulated from chemicals which present no fire or health hazards. Does not fall into the hazard classifications of current regulations. However, it should not be swallowed or allowed to come into contact with skin and eyes. Suitable protective gloves and goggles should be worn. Store all materials and equipment safely and out of reach of children and animals. Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment. In case one of the components comes in contact with the skin, wash thoroughly with soap and water. Provide adequate ventilation in volume and pattern in working area.

***Further protection:** emergency showers and eyewash stations. Get immediate medical attention as needed.

Edition: 11/2017/001 Identification No: PD-066
This datasheet supersedes all previous versions.

Disclaimer: The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

Additional Information: Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

*Separate datasheet are available on these products.

Typical Properties:

Colour:	Grey
Compressive strength (ASTM C109/109M-11)	≥ 20 MPa @ 1 day, ≥ 50 MPa @ 7 days , 60 MPa @ 28 days
Expansion characteristics (ASTM C827/C827M-10)	Up to 4%
Addition rate:	6 kg FlowMax® NS 200- CG : 100 kg cement: 35 ± 2 litre clean water (variable depending on cement type and source)
Bleeding(ASTM C940)	Pass, no bleeding
Chloride content	Nil to BS 5075 : 1982
Flow characteristics	< 32 sec ASTM C939-87 within 30 min from mixing. Remixing is needed to keep the needed flow
Fresh wet density	Approximately 1900kg/ m ³ depending on actual consistency used.
Initial setting time (ASTM C191)	3 - 4 hr
VOC	< 10 g/ltr

Note: The results were obtained when OPC (complies with ASTM C150-02a with compressive strength @ 28 days > 42.5 MPa) is used. Higher compressive strength results can be achieved when OPC > 52.5 MPa is used. Where added water needs to be adjusted based on the mentioned range. It is important to conduct trials so as to choose the best source of OPC for the needed application. Compressive strength @ 1 day is under restrain. Compressive strength @ 7 & 28 days is under wet cure.

STERLING TECHNOTRADE INDIA PRIVATE LIMITED

The Specialist Construction Chemical Company®

Head Office: 109-111-112, 1st Floor, Vijaya Building, No. 17, Barakhamba Road, Connaught Place, New Delhi- 110001

Manufacturing Unit: Plot No-J-3, UPSIDC Site C, Surajpur Industrial Area, Greater Noida, Uttar Pradesh 201306

WEB: sterlingtechnotrade.com | **EMAIL:** support@sterlingtechnotrade.com | **TEL:** 01145084212