MCC LIMPOPO

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MULTIGROUT 802 M

Fatigue Resistant Metallic Aggregate High Strength Non-Shrink Grout

Specification Type
Meets requirements of CRD-C621 ASTM C 109-80, ASTM C 78-80, CRD-C 227 and ASTM C 232-71 specifications.

Description
MULTIGROUT 802M a pre-mixed precise blend of graded metallic and siliceous aggregates, shrinkage compensating and controlled chemicals blended with cementitious powders. It has no added chlorides, nitrates or other accelerating chemicals. A free flowing metallic reinforced cementitious non shrink grout.

Typical Applications
* Turbines
* Milling Equipment
* Generators
* Base / sole plates
* Electrostatic Disseminator
* Crane rail plates
* Pumps
* Coal pulverizes
* Compressors
* Fans
* Machinery and equipment foundations
* Bridge bearings
* Anchor bolts and rods

Advantages
* Provides precise alignment and support for equipment requiring heavy duty load bearing
* Fatigue Resistance - the inclusion of ductile metallic aggregate provides reinforcement for greater fatigue resistance and increased flexural strength
* Provides extra resistance to impact, dynamic and repetitive loading.
* Non-Shrink - the thixotropic action which takes place after the grout is completely in place and in tight contact with underside of the base plate
* Provides a dense grout that hardens free of bleeding, settlement or drying shrinkage. Contains no gas-generating or air-release agents such as aluminium powder, fluid coke, chlorides, etc.
* High Early Strength - in compressive and flexural strengths it facilitates rapid installation of equipment
* Fluid Consistency - maintains precision and non-bleeding properties when pumped or gravity placed into intricate areas
* Reliability - a premixed high quality grout eliminating problems frequently experienced with site blended materials
* Withstand Thermal Movement - compatible with equipment subjected to extensive thermal expansion
* Dimensional stability
* Extended placing time

Typical Properties

Initial set:	Approximately 4 hours 45 minutes at 20°C
Final Set:	Approximately 6 hours 45 minutes at 20°C
Flow Characteristics:	Using a flow trough 1000 x 230 x 50 deep, a conical funnel 285 diameters x 180 deep with 28 diameter outlet (all as recommended by DOE). The cone is filled with a known amount of grout and is then discharged at one end of a level tray, the lineal flow being measured after 30 seconds
Shrinkage/ Expansion:	Micrometer bridge as per CRD C 621-80 specification. Expansion % at 3, 14 and 28 days not greater than 0, 4% at any of these ages, see Table 1.
Flashpoint:	Not applicable
Operating temperature:	Between 160°C to 230°C. Permissible for use with equipment exposed to the above temperature parameters
Storage Life:	Up to 1 year when stored under cover and in dry conditions
Oxidizing Catalyst:	None, non-toxic
Strength Development:	Flexural and tensile see Table 2, Compressive see Table 3.

Table 1

Age	**Shrinkage (or) Expansion**
1 Day	+0,065
3 Days	+0,067
7 Days	+0,067
28 Days	+0,067

Note: Expansion % at 3 and 14 days must not be greater than expansion at 28 days. All the above tests were carried out at 20°C. As with all cementitious products performance will vary with temperatures above or below this value.

Table 2 / Flexural Strength in MPa

Age	1 Day	3 Days	7 Days	28 Days
Strength	1.8	2,6	5,0	7,2

Split Tensile Strength in MPa

Age	1 Day	3 Days	7 Days	28 Days
Strength	1. 5	2,2	3,6	5,6

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Table 3 / Compressive Strength in MPa

Age	Compressive MPa	Shear MPa
1 Day	15,0	4
3 Days	22.0	9,1
7 Days	42.0	11.4
28 Days	60.0	16.3

Directions for Use
Preparation of Surfaces: An evenly scabbled slightly textured surface is required with all dust, dirt, grease and oil removed. Surfaces must be pre-wetted for 24 hours to thoroughly dampen the concrete and all free surface water removed before grouting commences. All surfaces in contact with the grout must be sound, dense and clean. Preparation of Equipment: All equipment to be grouted must be free of grease, rust, oil and dirt especially the underside of base plates.

Mixing Instruction
Flowable Consistency: Typically add 3.8 to 4 litres of water per 25kg bag and mix thoroughly. Ensure there is no bleeding.
Fluid Consistency: Typically add 4.0 to 4.2 litres of water per 25kg bag and mix thoroughly. Ensure there is no bleeding.

Notes
* To achieve properties described, water additions should be accurate to + 0, 05 litre and it is recommended that potable water is accurately weighed
* Water should be added slowly to the grout over a 1 minute period and the mixing continued for a further 2 minutes
* It is important that an efficient mixer be used to ensure complete dispersion of the water
* Use water in an amount or at a temperature that will not produce bleeding, segregation, hardening and low strengths
* Voids must be completely filled and if necessary straps may be used to assist the free flow of grout but vibration must be avoided at all times.
* It is recommended that placing thickness be not less than 25mm or more than 100 mm.

Placing
The placing of grout should be completed before loss of flow starts to occur at 20°C, this is within approximately 10-20 minutes. No water should ever be added for re-tempering Placing must not be carried out below 13°C or above 26°C. Below 13°C it is advisable to use warm water and to warm the substrate to ± 18°C. This will subsequently maintain the temperature of the placed grout at ±18° C.

Note: Optimum water demands can be verified on site as environmental and placing conditions can influence grout / water requirements.

Hot and Cold Temperature
Temperature of both the ground and all elements coming into contact with the grout should be in the range of 15°C-26°C. Do not grout in freezing conditions. If outside this range special information on high and low temperature grouting recommendations are available from your local MCC LIMPOPO's Field Representative.

Curing
Cure all exposed grout with MULTICURE 300C curing compound

Watchpoints
* Site and laboratory tests should be determined on desired placing consistency rather than strictly on the water content. This must be established prior to placing the grout.
* Always place grout from one side only.
* Do not pour grout from both sides as this will result in entrapment of air creating a gap (air pocket) between the underside of the bedplate and grout.
* Do not use contaminated water or water in an amount or at a temperature that will produce bleeding, segregation, delayed hardening and low strengths
* Bulk Grouting - whenever the thickness of grout is in excess of 100mm use MULTIGROUT 820 MP, recommended for bulk grouting

Yield
One 25kg bag of MULTIGROUT 802 M when mixed with 4 to 4.2 litres of water will yield approximately (11 litres - 90 x 25 bags per m^3).

Packaging
Supplied in 25kg double lined moisture resistant bags

Specification Clause
All grouting shall be carried out where indicated using MULTIGROUT 802M non-shrink fluid and high ultimate strength grouts as manufactured by MCC LIMPOPO's to the following specifications:
* To comply with CRD-C 621, CRD-C 226-68 specifications
* ASTM C 109-80 and ASTM C 78-80 specifications
* The grout shall be mixed and used strictly in accordance with the manufacturer's recommendations

Quality Assurance
MCC LIMPOPO's production and testing programmes comply with local standards. These stringent testing requirements must also comply with ASTM C 109-80, CRD-C 621, ASTM C 78-80 CRD-C227 and ASTM C 232-71, Specifications for Flowable Grouts.