DRYMiX®

Dry Grout NS Fine
(Non Shrintage)

Cement based high quality, ready mixed, high strength, non-shrinking expanding grouting mortar.

Description:
Dry Grout N-S Fine is cement based high quality, ready mixed high strength non-shrinkage flowing grouting mortar in powder form that requires only the addition of water on site.

Composition:
Dry Grout N-S Fine is specially manufactured and modified to give high strength in all forms, enhance expansion and flow ability, non-shrinkage properties, and decrease water and oil permeability.

Standards:
Dry Grout N-S Fine complies ASTM C1107 and CRD-C621- standards.

Uses:
Dry Grout N-S Fine is used for grouting of the following:
- Grouting of anchor bolts and holes and dowel fixation.
- Grouting of steel column base plates.
- Grouting of pre-cast elements and concretes (walls, barriers, boundaries, domes ...etc)
- Grouting of general industrial equipment.
- Grouting of generators, gas and steam turbines.
- Grouting of expansion joint of bridges and roads.
- Grouting of concrete bases and beams in bridges.
- Repairing and filling of cracks and honeycombs in concrete elements and ceilings.
- Cavities, gaps and recesses into the concrete mass filling.
- Repairing of walls and concrete sections prior to being waterproofed (Water and oil tanks)
- Grouting around door frames, and drainage pipes.

Dry Grout N-S Fine can be injected, pumped, vibrated or compacted.

Advantages:
- Easy to use and apply (Injection, pumping, vibration or compact)
- Specially modified with additives to give high strength, high flowability, and no shrinkage properties.
- Doesn't oxidize in humidity or in contact with water, as it contains no metal particles.
- Excellent bonding to concrete, steel and iron.
- Highly durable, with high mechanical properties in all 3 forms: Fluid, flowable, plastic, dry pack (higher than concrete)
- Chloride free, with high alkaline ph. value that protects metal from rust and corrosion.
- High impermeability to oil and water.
- Various forms and consistencies are obtained when different mixing rate is used (According to the mention mixing ratios in the data sheet)

Technical Data:

Color	Grey
Base	Portland cement grade 52.5, graded clean silica sand, and selected additives.
Powder Density	Approx. 2 ton/m^3
Application Thickness	10 – 80 mm / layer up to 15 cm
Pot Life	Approx. 30 minutes at °25 C
Bonding to concrete @ 28 days	6.5 N/mm^2

Packaging:
Dry Grout N-S Fine is available in 25 kg bags.

Mix Proportion:
Approx. 3 ± 0.5 liters of water/ 25 kg bag. (Plastic form for manual application)
Approx. 3.75 ± 0.2 liters of water/ 25 kg bag. (Flowable for pumping applicaiton - shot crete)
Approx. 4.7 ± 0.25 liters of water/ 25 kg bag. (fluid fpr for injection application)

(Depending on the condition of the substrate)

Coverage Rate:
Approx. 20kg/m^2 @ 1 cm thickness.

(Coverage rate may vary depending on surface condition)

Surface Preparation:

- All substrates should be clean and free from oil, dust, dirt, paint and curing agents. (Chipping or whip sand blasting is preferred).
- Don't use bush hammers to avoid crushing the aggregates, leave them in place.
- Surfaces should be damp but free from standing water prior to the application of **Dry Grout N-S Fine**.
- Soak the area to be grouted by **Dry Grout N-S Fine** for 24 hours in water, to minimize local absorption and to help in the free flow of the grouting mortar.
- In case of grouting anchor bolt holes: Use a compressed air blower to clean the holes, and make sure they are dry and water-free before being grouted with **Dry Grout N-S Fine**.
- Base plates and anchor bolts should be clean and free from oil, grease and paint.
- Make sure that the formwork is secure and water tight to prevent any leakage or movement during applying the grouting mortar **Dry Grout N-S Fine**.
- In hot weather, base plates and foundations should be shaded from direct sunlight.
- **Dry Grout N-S Fine**must be cured for 3 days by spraying water, or using any suitable curing agent (After the mortar has achieved its initial setting, or bleeding water has evaporated)

Application Procedures:

- Add the required quantity of fresh cool, clean water in one deep damp container. Then, add the contents of the 25 kg bag gradually and mix till the mixture is uniform and free from lumps. Leave the mixture for 1 minute, then remix for 2 – 3 more minutes.
- Please note that using excess water than the mentioned amount will cause cracks, segregation and low strengths.
- **Dry Grout N-S Fine** should be immediately applied, to obtain full expansion properties (within pot life : up to 30 minutes)
- Pour / Pump / Inject the grouting mortar continuously, while using metal strappings to help the mortar flow/ expand over large areas uniformaly and to eliminate air bubbles.
- As soon as the grout if placed, protect the exposed grouting mortar using a damp hessian to keep the moist in,till the grout is firm
- **Dry Grout N-S Fine** is applied in thickness of 10 mm up to 80 mm per layer up to 15 cm

Storage:

Shelf life is 12 months from manufacturing date, in a dry, covered storage area.

Health and Safety:

While using the product, gloves and goggles should be worn.
Splashes to skin or eyes should be washed with clean water, in case of prolonged irritation, seek medical advice.

Bonding to Steel		
	Plain Bars	Deformed Bars
@ 7 days	3 N/mm²	20 N/mm²
@ 28 days	4 N/mm²	30 N/mm²
Shrintage Rate (National Research Center) ASTM C531	0.313 %	
Setting Time according to ASTM C191 specs		
Flowable	9 Hours	
Plastic	7 hours and 3 minutes	
Setting Time according to NRC		
Initial	1 hour and 50 minutes	
Final	3 hour and 40 minutes	

Compressive Strength according to ASTM C109 Specs		
According to Spec	Flowable	Plastic
@ 1 day	18 N/mm²	21 N/mm²
@ 3 days	39 N/mm²	43 N/mm²
@ 7 days	43 N/mm²	46 N/mm²
@ 28 days	45-50N/mm²	50 N/mm²
Compressive Strength according to NRC		
@ 3 days	36.26 N/mm²	
@ 28 days	59.76 N/mm²	
Flexural Strength Accroding to ASTM C348 Spec		
According to the starndards (ASTM C348) @28 DAYS	Flowable	Plastic
	10 N/mm²	11.5 N/mm²
Flexural Strength Accroding to NRC		
@ 3 days	5.35 N/mm²	
@ 28 days	12.41 N/mm²	

NOTE: The test results of the national research center show that the compressive and flexural strength are above the ASTM C109 and ASTM C348 specs by approx. %30

June 2022