

# K2 GROUT NSFF

## Free Low Ultra-High Strength Cementitious Precision Grout

### Description:

K2 GROUT NSFF is a single pack, ready to use, ultra high strength, free flow, & non-shrink grout. K2 GROUT NSFF is a blend of specially processed cement and special fillers free from corrosive substances and additives. K2 GROUT NSFF is supplied as ready to use grout requiring the addition of precise quantity of water on site (4.125 to 4.5 Litre/25kg Grout). K2 GROUT NSFF is suitable for gap widths between 10mm – 50mm of thickness. In excess of 50 mm gap, cleaned, washed 10mm aggregates can be incorporated at the rate of 50% - 100% of the quantity of grout used. Controlled expansion occurs in the unset material to ensure that the grout when cured will continue to occupy its original volume within the confines of the voids in which it was placed. For thicker section it is necessary to fill out grout with well graded slit free aggregate to minimize heat buildup.

### Area of Application:

K2 GROUT NSFF is used in Bolt pockets and

base plate grouting of all equipment's, crane, turbines, compressors, boilers, pumps etc. and all types of machinery with dynamic load.

### Benefits:

- Pre-packed factory controlled, consistent material needs only addition of water.
- Shrinkage offset by expansion and ensures retained original volume.
- Free flow ensures high level of contact with the load bearing area. Easy placement and filling of under bases of machinery.
- No metallic ion contact to cause staining. Develop high early strength without the use of chlorides. Can withstand temperature up to 2000C.
- High ultimate strength ensures the durability of the hardened grout. Hold up to industrial machinery vibration & impact.
- Excellent adhesion to concrete & steel

### Technical Properties:

Properties	Results
Water Ratio	25 kg of K2 GROUT NSFF will require 4.125 Liters for pourable consistency (W/P – 0.165) and 4.5 Liters for flow able consistency (W/P – 0.180).
Flow	17 to 22cm on flow table. Flow tested (as per BS: 4551 Part – 12, 1980)-315% at flow consistency.
Physical Appearance	Grey colored powder.
Application Temperature	10 °C to 40 °C.
Pourable Life	20 minutes
Yield per 25 kg	Pourable - 12.5 Liter , Flow able - 13.3 Liter
Mixed Density	2220 kg/m <sup>3</sup>
Tensile Strength	3.5 N/mm <sup>2</sup> @28 days
Pull Out Bond Strength	17 N/mm <sup>2</sup> @ 7 days 20 N/cm <sup>2</sup> @ 28 days
Time for Expansion (After Mixing)	Start 20 Minutes & Finish : 120 Minutes
Unrestrained expansion	Maximum 2% in the plastic state enables to overcome shrinkage.

### Compressive strength: (BS 1881 – Part 116:1983)

Age (days)	Compressive strength (N/mm <sup>2</sup> )	
	Consistency	
	Flow able (W/P 0.18)	Pourable (W/P 0.165)
1	24	26
3	45	51
7	55	57
28	65	68

### Compressive strength with addition of aggregates

Age (days)	Compressive strength (N/mm <sup>2</sup> ) (W/P 0.18)		
	% of aggregates (IS 516 – 1959)		
	50 %	75%	100%
1	28	30	32
3	50	52	55
7	60	63	68
28	70	75	78

### Flexural strength (BS 4551, 1998)

Age (days)	Flexural strength (N/mm <sup>2</sup> )
	(W/P 0.18)
1	3.0
3	7.0
7	9.0
28	10.

## Application Instruction:

### SURFACE PREPARATION

All contaminated surfaces must be cleaned thoroughly by chemical or mechanical methods all bolt pockets and under bases must be free from dust, laitance and sound substrate. If needed, substrate with water should be allowed for full absorption for at least 24 hours. Just before the grouting has been to commence, all water must be removed completely leaving the surface only damp.

### MIXING PROCESS

- Mechanical mixing should be done using a grout mixer or free fall concrete mixer. No hand mixing is permitted.
- Place 80% of water required in a concrete mixer 100% in case of a grout mixer.
- Slowly add the required amount of K2 GROUT NSFF while continuously stirring for 1 minute. Add balance quantity of water (20%) and mix for 3 to 5 minutes. The mixed grout should be placed immediately and grouting should be continued till the cavity is filled.

### BOLT POCKETS

- Depending on the size of the bolt pockets, 50-100% clean 10mm should be incorporated to economize on grout and also to keep the heat of hydration low.
- When the thickness exceeds 100mm – 150mm our technical department may be contacted for advice.
- There must be at least 12 hrs. gap between bolt pocket & under bases plate grouting sequence.

### UNDER BASE PLATE:

- Leak proof strong formwork must be provided to withstand operational stresses while grouting and all edges must be sealed with K2 GROUT NSFF of trowelling consistency to arrest the grout from flowing out of a framework.
- The sealed edges must be strong enough to resist fluid grout (at least 1-2 hours after sealing). Hydrostatic head 150-250mm must be provided to enable the free flowing of grout under base plate.

- Grouting must be continuous until the cavity is completely filled to the desired level.
- The exposed areas must be kept to a minimum of 100-150mm on the grouting side and 50mm on the opposite side.
- All exposed areas must be restricted by covering with wooden planks or polythene sheets with sand sprinkled on top of the sheet to avoid cracks on the grouted surface.

### **CURING:**

Curing must be done after grouting for 3-4 hours. All expose areas must be cured with wet hessian clothes (keep wet always) or water Ponding wherever possible for minimum 7 days.

### **Packing:**

K2 GROUT NSFF is available in 25kg bag Pack.

### **Shelf Life and Storage:**

K2 GROUT NSFF has a shelf life of 6months in

### **Important Note:**

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unopened containers when kept in dry conditions at a temperature between 50C to 450C. Storage at higher temperature or high humidity may reduce shelf life.

### **Health & safety:**

K2 GROUT NSFF is not hazardous. It should not be swallowed or allowed to come into contact with the skin and eyes. Protective gloves, Nose mask and goggles should be worn. Contact with the skin for long tenure should be avoided. In case of contact with the eyes, it should be rinsed immediately with plenty of water and medical advice sought immediately.

### **FIRE**

K2 GROUT NSFF is non - flammable.

### **Technical Support:**

The company provides a technical service supported by the team of specialist applicators in the industry.