HIND POWER GROUT

PRODUCT DATA SHEET

HIGH STRENGTH, NON-SHRINK FREE FLOW PRECISION CEMENTITIOUS GROUT

DESCRIPTION

Hind Power Grout is a High Strength, Free Flowing Non-Shrink, Chloride Free cementitious precision grout. Ready to use dry powder grout only need addition of controlled clean water to produce grout for a gap thickness up to 100 mm. It is formulated by blending Portland Cement, specially graded fillers and powder chemical additives which ensures controlled expansion in the plastic state, reducing the water demand and ensuring high early strength. The specially graded fillers are designed to enhance uniform mixing and produce a consistent grout.

USES

Hind Power Grout is used for grouting of the bolt pockets and base plate of turbines and heavy machinery like compressors, boilers and pumps. It is used for grouting of foundation bolts for all types of machinery in cement, textile, paper & steel industries, bridge bearing pads, columns, precast construction.

ADVANTAGES

Hind Power Grout is an economical and easy to use material, requiring only addition of water. It is very easy to mix and placement can be done with high flow characteristic, rapid strength development, adjustable consistency and Compressive strength.It does not segregate and bleed. It is impact and vibration resistant, non-corrosive to steel and iron, non-toxic and safe to handle.

APPLICATIONS

All grouting areas must be free from the loose concrete, oil, grease, and dust where **Hind Power Grout** will be placed. The grouting area to be saturated with water and it is to be ensured that no stagnant water is present before application. Add **Hind Power Grout** to clean water as per the recommended dosages. Keep on mixing with a grout or concrete mixer till a smooth and even consistency is achieved. Mixed grout should be used within **30 minutes** of preparation. After initial hardening of the grout, it should be kept wet with damp hessian cloth for at least **3-7 days**. Water and Powder ratio varies from **0.12 to 0.15** depending on the consistency requirement of the site.

Hind Power Grout can also be mixed with **12mm down well graded aggregate** in the ratio of **2:1 by weight (2 Parts of Hind Power Grout and 1 part well graded aggregate).** When there is requirements of high volume specific application **20 mm down well graded aggregate** in the ratio of **2:1 by weight (2 Parts of Hind Grout GP2 and 1 part well graded aggregate)** can be mixed with **Hind Power Grout.** When **Aggregates** is mixed with **Hind Power Grout,** Water and Powder ratio varies from **0.12 to 0.15** depending on the consistency requirement of the site Placing conditions including temperature may have to be assessed before pouring the grout at site. Small trial batches may be tried to ascertain best working consistency.

Consistency of Grout Mix

The quantity of clean water to be mixed with **25 Kg Bag of Hind Power Grout** to achieve **Pourable consistency ranges between 4.100 -4.125 Ltr.** and for **Pourable Consistency** ranges between **4.250 - 4.500 Ltr.**

PROPERTIES

Compressive Strength **(BS 1881- Part 116: 1983)**

Age in days	Consistency	
	Flowable (W/P Ratio 0.18)	**Pourable (W/P Ratio 0.15}**
1	24 N/mm^2	26 N/mm^2
3	45 N/mm^2	51 N/mm^2
7	55 N/mm^2	57 N/mm^2
28	65 N/mm^2	68 N/mm^2

Compressive Strength adding Aggregates (Water Powder Ratio 0.18)

Age in days	Percentage of Aggregates (IS 516-1959)		
	50%	**75%**	**100%**
1	28 N/mm^2	30 N/mm^2	32 N/mm^2
3	50 N/mm^2	52 N/mm^2	55 N/mm^2
7	60 N/mm^2	63 N/mm^2	68 N/mm^2
28	70 N/mm^2	75 N/mm^2	78 N/mm^2

Flexural Strength BS:4551-1998 (Water Powder Ratio 0.18)

After 1 day	2.5 N/mm²
After 3 days	7.0 N/mm²
After 7 days	9.0 N/mm²
After 28 days	10.0 N/mm²

Tensile Strength (Water Powder Ratio 0.18)

After 28 days	3.5 N/mm²

Pullout Bond Strength **(Water Powder Ratio 0.18)**

After 7 days	17 N/mm²
After 28 days	20 N/mm²

Time for Expansion (After mixing)

Start	20 minutes
Finish	120 minutes

Wet Density (Freshly Prepared grout mix)

Density	2220 Kg/m^3 depending on the required consistency to be used

Young's Modulus (ASTM D 469-1994)

Young's Modulus	28 kN/mm ^{2}

Dynamic Load Resistance	**Hind Power Grout** specimens remains undamaged even they are subjected to alternate loads of **5 N/mm² to 25N/mm² @ 500 cycles per minute** for two million cycles.
Co-efficient of Thermal Expansion	$11x10^{-6/0}$ C
Unrestrained expansion	2-4% expansion of the grout in plastic state enables it to overcome shrinkage.
Pressure to restrain	Approx. 0.004 N/mm ^{2}
Flow Characteristics	The maximum distance of the flow is regulated by the width of the gap and the head of the grout . Typical examples are stated in the following table mentioned below:

Consistency of the Grout	Maximum floe distance of the grout in mm			
	Gap width (mm)	**50mm head**	**100mm head**	**250mm head**
Flowable	30	350	1000	1500
	40	500	1500	2000
	50	900	2000	More than 3000

Note: The above-mentioned values are based on the following factors temperature -30^0 C; water saturated substrates; minimum unrestricted flow width is 300 mm.

LIMITATATIONS

Low working Temperature

When the air or contact surface temperature is less 10^0 C or falling in the thermometer scale warm water (30 - 40^0 C) is recommended to be used to accelerate strength development. The form work when the temperature is below 10^0 C is to be kept in place for 306 hours until the grout gets full set.

High working Temperature

At temperature above **40^0 C**, cold water **(Approx. 20^0 C)** should be used for mixing the grout prior to placement.

YIELD

Probation should be allowed for wastage when calculating quantity requirement. The approximate yield for **25 Kg Bag** of **Hind** Power Grout is dependent on the consistency and is mentioned as follows:

Consistency	**Pourable**	**Flowable**
Yield in litres	12.5	13.3

SHELF LIFE

Best before **6 months** from the date of manufacture in unopened condition. Should be stored in dry place away from direct sunlight at temperature ranging between 20^0 C (Min.) and 35 ^{0} C (Max.).

PACKING

25 Kg in Poly lined **HDPE Bag.**

HANDLING PRECAUTION

Hind Power Grout is non-toxic and ingestion is to be avoided. Goggles and mask to be used while using. If contacts with eyes, skin occur, wash well immediately with water and seek medical advice.

Note:

- **Hindcon Chemicals** maintains a team of technically trained professionals to provide full support to your problems in construction, and recommend the correct product to suite your specific requirements. Our authorized applicators can attend your site for application of the products.
- The content of the Technical datasheet are for general information and guideline. The result shown here are generated from our laboratory or from our site experiences.
- Quality of our products are maintained as per ISO9001:2008 recommendations and continuous researches. The behavior can change as per the prevailing conditions at the time of applications.
- Since **HINDCON CHEMICALS LIMITED** has no control over the use to which the users may put the material, it does not claim or warrant that in the user's particular circumstances, the result that the user will obtain from the product will be the same as those described in this communication or that the user will find the information or recommendations complete, accurate or useful. The client must test and ascertain the safety and fitness for the product for use.
- The right to change the properties of the products is reserved with us. The proprietary rights of third parties must be observed. All orders are accepted subject to the terms of sale and delivery. Users must always refer to the most recent issue of the latest Data Sheet for the product concerned, copies of which will be supplied on request.

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