

HIND POWER GROUT

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, noncorrosive to steel and iron, non-toxic and safe to handle.

APPLICATION

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

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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/mm ²
After 3 days	7.0 N/mm ²
After 7 days	9.0 N/mm ²
After 28 days	10.0 N/mm ²

Tensile Strength (Water Powder Ratio 0.18)

After 28 days	3.5 N/mm ²
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Pullout Bond Strength (Water Powder Ratio 0.18)

After 1 day	17 N/mm ²
After 28 days	20 N/mm ²

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
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Young's Modulus (ASTM D 469-1994)

Young's Modulus	28 kN/mm ²
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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/°C

Unrestrained expansion

2-4% expansion of the grout in plastic state enables it to overcome shrinkage.

Pressure to restrain

Approx. 0.004 N/mm²

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 flow distance of the grout in mm		
Flowable	Gap width (mm)	50mm head	100mm head	250mm head
	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 -300 C; water saturated substrates; minimum unrestricted flow width is 300 mm.

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LIMITATIONS

Low working Temperature

When the air or contact surface temperature is less 10°C or falling in the thermometer scale warm water (30° - 40°C) is recommended to be used to accelerate strength development. The form work when the temperature is below 100 C is to be kept in place for 306 hours until the grout gets full set.

High working Temperature

At temperature above 40° C, cold water (**Approx. 20° 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° C (Min.) and 35 ° 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.

IMPORTANT NOTICE :

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.

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✉ contactus@hindcon.com
☎ +91 33 24490839, 9830599113
☎ +91 33 24490849
📍 Kolkata, West Bengal, India

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