HIND BOLT R

RESIN CAPSULE FOR ROCK STABILIZATION



DESCRIPTION

Hind Bolt R is a fast setting sausage shaped composite cartridge, containing special grade of isophthalic polyester resin and a floating inner tube, filled with catalyst in accurately measured quantities. The two components are housed in a single pouch and yet isolated from each other. When punctured and torqued by a reinforcing rod, the fragile tube breaks, the resin and catalyst thus get homogeneously mixed and the phenomenon of curing by cross linking sets in. The gel point under exothermic conditions is reached within 1 to 3 minutes, as per specific requirements and the annular space between the bore hole wall and rock bolt is filled with a tough thermo set resin matrix. This stitches the mother substrate or anchors the bolt and stabilizes the support system permanently, achieving a **Pull-out load as high as 100MT per Running Meter and Pull out Bond Strength of 20 N/mm**².

USES

Hind Bolt R is used to counter the load and squeezing phenomenon occurring from the reducing residual stress of the rock, after blasting, in a mining or tunneling operation. It reinforces rock strata and prevents freshly exposed overhead rock from collapsing, after each blast.

ADVANTAGES

- Increases stand-up time of unsupported span in tunneling.
- Suitable for a wide range of rocks, even with low RMR.
- Ideal for fast tunneling work as per NATH.
- Pre-determinable setting times.
- · High early and final strengths, achievable in minutes.
- Inert to mother substrates after reaction.
- Sets as a monolithic mass, even in vibrating and moist conditions.
- No danger of chemical attacks or fire, to environments.
- Resistant to salt water, oil, acid, alkali, greases and solvents.
- Ideal in underground coal mining operations, hydel projects, traffic tunnels.

APPLICATION

- Bore a hole by drilling to correct depth and diameter as recommended.
- · Clean the hole thoroughly with compressed air and/or water.
- Insert appropriate number of capsules one by one to the end of the hole.
- Attach bolt to rotary machine by means of a spinning adapter and commence rotating/torque progressively, through capsules until the end of the hole is reached. Detach drill from spinning adapter (Recommended speed of the rotation 150-250 r.p.m)
- Leave bolt undisturbed until resin has cured.
- Remove adapter.
- After 24 hours tighten the rock bolts finally & the hole is grouted.

PROPERTIES

Color	Yellow/white
Size	Cylindrical sausages, custom-made to suit the requirement.
Setting time	2.5 to 3 minutes

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Compressive Strength	After	1 hour - 62 N/mm² (minimum)			
	After	24 hours - 65 N/mm² (minimum)			
Tensile Strength At	7 days	- 30 N/mm² (minimum)			
Pull out load	100 MT/running meter				
Pull out Bond Strength	20 N/mm²m				

GUIDELINES

TABLE A

(Typical results based o 25mm Dia Rock Bolt used)

Ultra High Strength		High strength Lime stone		Medium streng	th sand stone	Moderately weak		
Granite Rocks unconfined		(calcarious)		(Quartzite)Roc	ks unconfined	strength Mudstone Rocks		
Compressive Strength		Rocks unconfined		Compressive s	trength	unconfined compressive		
100 N/mm²	100 N/mm²		Compressive strength			strength 7.5 N/mm²		
		50N/mm²						
Anchorage	Average	Anchorage	Average	Anchorage	Average	Anchorage	Average	
Length	Load	Length (mm)	Load	Length (mm)	Load	Length	Load	
(mm)	(MT)		(MT)		(MT)	(mm)	(MT)	
230	9	290	8	400	4.5	640	4.5	
270	11.5	360	12	500	9.0	700	6.5	
300	17.5	450	18	635	12.0	760	8.5	
350	20.0	500	23	765	18.0	890	10.5	
				890	23.0	1000	13.5	

The Chart given below demonstrates 'HIND BOLT R' Resin capsule usage chart (site trial data basis)

TABLE B

Hole diameter (in mm)	25	32	35	38	41	38	41	45	50	64
Capsule diameter (in mm)	23	29	32	32	32	35	35	40	40	55
Bolt diameter (in mm)	Anchorage Length using Single Capsule (in mm) of HIND BOLT R									
19	380	330								
22		400	350			315				
25		565	440	315		390	290	300	320	340
29				400	290	490	350	340		
30					390		465	425		
32								525	550	560
35								570		

Note: We can manufacture Hind Bolt R as per desired diameters & length.

SHELF LIFE

3 months from the date of manufacture.

 $\label{thm:continuity:extended} Extended Shelf life can be achieved for 6 months if the following guidelines are followed:$

- a) If stored at room temperature below 27°C.
- b) If protected from direct sunlight.

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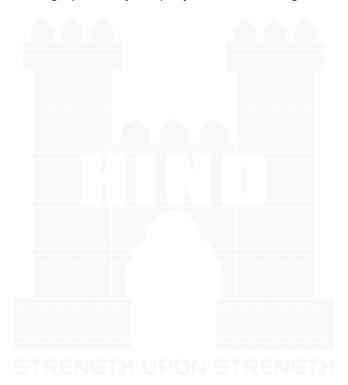
- c) If protected from other sources of heat.
- d) Testing of Compressive Strength can be done from time to time (within the shelf life 3-6 months) to check The quality of the material, if any solidification of the inner materials are found.

PACKING

In Cardboard/Wooden Box.

HANDLING PRECAUTION

Hind Bolt R Cartridges are made of plastic film packing containing an inner glass tube. Care should be taken while handling or installation that it does not get pierced by sharp objects and the inner glass tube does not break.



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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