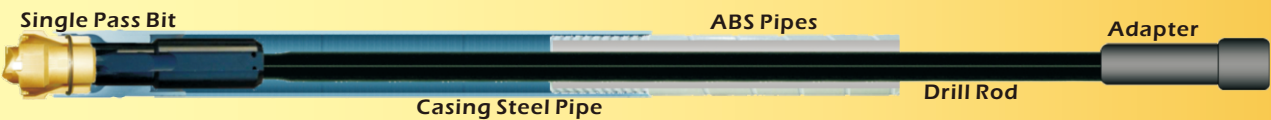


Long Distance Face GFRP Bolting & Injection

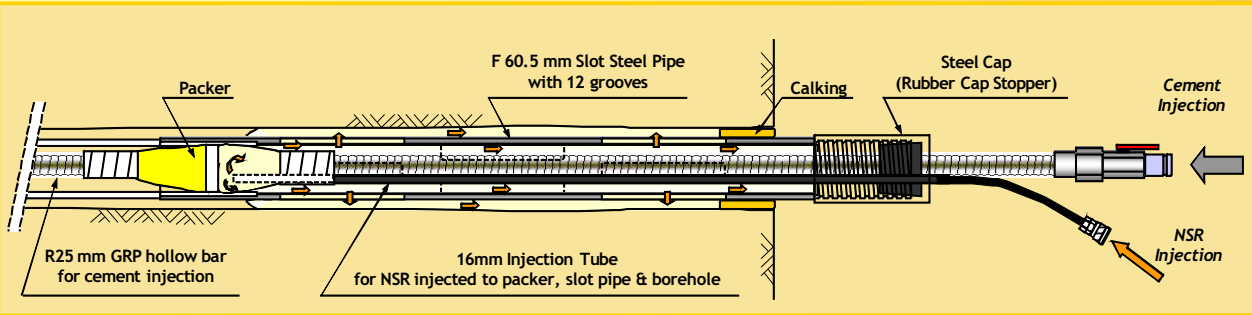
To stabilize the tunnel face we need not only the anchoring from short FRP dowel. Besides that.....

- Longer length to minimize the cycling time for face bolting
- No Connectors used to keep the high tensile strength of GFRP bolt
- Injection Consolidation high friction grout body to gain the resistance

ABS tubes first then insert



GFRP bolt > 12M length + Stages Injection Set



Remarks: Please refer to our MCT System Brochure for detail of drilling descriptions.

System organized by **WECAND Enterprise Co., Ltd.**

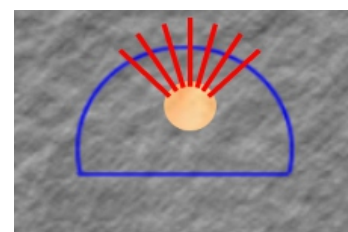
ROCK BOLT GFRP



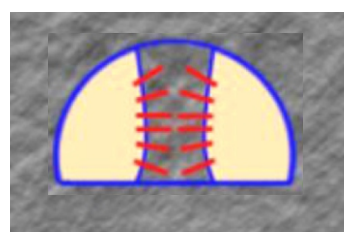
GFRP Rock Bolt

WECAND full threaded GFRP rock bolt offers you a quality-assured and more economical choice in the tunneling and mining fields, such as face stabilization, slop protection and so on. The bolt has higher strength than rebar-made bolt but with much lighter weight and full threaded-rough surface offering the perfect bonding with the ground. The cuttability, flexibility and durability characters enables the GFRP bolts could be used for temporary and permanent purposes.

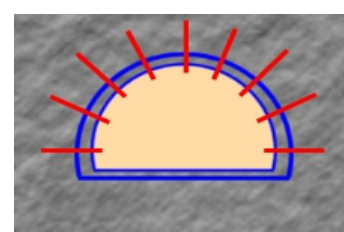
Summary of Applications:



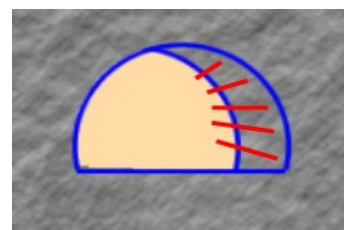
TBM Pilot Tunneling



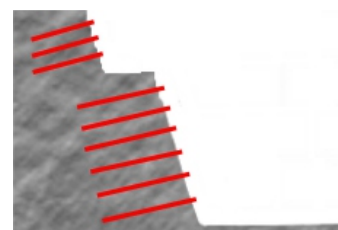
Side Pilot Tunneling



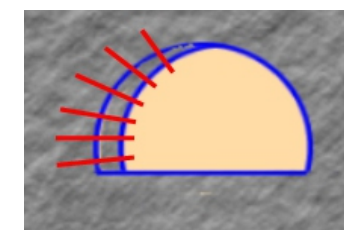
Tunnel Enlargement



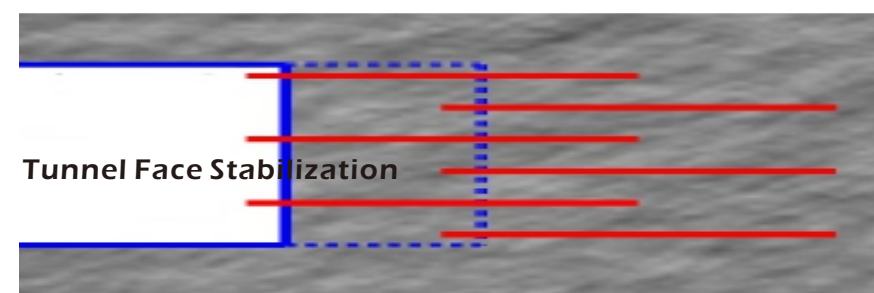
Partial Excavation 1



Slope Protection



Partial Excavation 2



Tunnel Face Stabilization



Summary of Advantages:

Full Threaded - better bonding & easily length control on site

Excellent Physical properties: high strength, lighter weight

Corrosion resistance- Permanent Support for Single Lining Tunneling Method

Non electrical conductivity and Anti-static for special order- Safety for mining

Easily Cuttability- Makes tunneling excavation alternatives more flexible

Various diameters including solid bar or hollow rod on request



TECHNICAL DATA

GFRP Bolts	Solid bar		Hollow Rod
Diameters (mm)	22	25	25/12
Length Limitation(m/pc)	Domestic order<18.0m ; Overseas<11.8m		
Glass fiber Content (by weight)	80%±3%		
Tensile E Modulus (N/mm ²)	>35,000		
Weight (g/m)	700	900	650
Tensile Load (kN)	250	350	250
Tensile Strength (N/mm ²)	>800		
Breaking Strain (%)	>2.5%		
Breaking Load of Sleeve (kN)	100	160	150
Breaking Load of Nut (kN)	100	180	150

Remarks: Special dimension is available upon request.

Accessories:

The steel made Accessories due to the better strength and cheaper cost consideration.

Steel Dome Plates' dimension on request



Sleeve
HEX35mm L200mm



Nut
HEX35mm L120mm



威建企業有限公司 TAIWAN WECAND Enterprise Co. Ltd.

