

Technical Data Sheet

Pileman[®] Tunneling

General Description:

Pileman[®] Tunneling is selected grade bentonite being Processed using precise addition of processing chemicals and through extrusion process to offer a well-balanced rheology even without any supporting polymer.

This product is designed to work at a dosage between 45- 50kg/m³. Use of this product is recommended as face support on both micro and large slurry TBM's on all conventional soil types.

When used as a side support, the product mix with Easy bore Gel polymer will result in exceptional reduction in tunnel pressure

Product features:

- Economical.
- Use additives only when the soil strata demands
- One product designed to drill effectively in Sand, Silt and Rock

The rheology as given in the table on your right is appropriate to dill under normal conditions. However with different soil profile, this product can easily adapt change in Rheology with polymer additives like Easy-Bore & AM-PAC. The following chart guides through the different Rheology achieved. The mud density and filter cake thickness can be controlled using 45Kg/m³ bentonite concentration.

| Parameter | unit | Results |
|----------------------|-------------------|----------|
| Free Swelling Volume | ml | 30-37 |
| pH (3% dispersion) | - | 8.0- 9.5 |
| Moisture | % | 12 max |
| Loose Bulk density | g/cm ³ | 0.85±10% |
| Dry residue # 200 | % | 15 max |
| Wet residue # 200 | % | < 2% |

| Concentration | Kg/m ³ | 50 |
|--|------------------------|------|
| Hamilton Beach mixer 11000 RPM, 20 minutes | | |
| Marsh Funnel Viscosity | Sec/qt | 55 |
| Fann Viscosity | | |
| @600 | rpm | 35 |
| @300 | rpm | 31 |
| @6 | rpm | 20 |
| Apparent Viscosity | cPs | 17.5 |
| Plastic viscosity | cPs | 4 |
| Yield Point | lb./100ft ² | 27 |
| 10s Gel Strength | lb./100ft ² | 18 |
| 10min Gel Strength | lb./100ft ² | 20 |
| Filtrate Loss (under 100 psi after 30min) | ml | 22 |
| Water Hardness | ppm | DW |

| Clay @ 45Kg/m ³ | | | Clay @ 50Kg/m ³ | | |
|----------------------------|---|---------------------|---|---------------------|--|
| | Polymer added per m ³ of water Easy-Bore Gel 500gm AM-PAC 100 gm | | Polymer added per m ³ of water Easy-Bore Gel 500gm AM-PAC 100 gm | | |
| Fann Reading | Instant | After 1 hour ageing | Instant | After 1 hour ageing | |
| 600 RPM | 34 | 38 | 42 | 46 | |
| PV | 4 | 5 | 5 | 6 | |
| YP | 26 | 28 | 31 | 34 | |
| 10" Gel | 8 | 8.5 | 9 | 10 | |
| 10' Gel | 8.5 | - | 10 | - | |
| Fluid Loss | - | 20 ml | -- | 19 ml | |



[Star Export House accreditation by Govt. of India]

ISO 9001 : 2015 Quality System

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Bentonite Processing plant :

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Only in-house production & process:

Bentonite | Drilling Polymer & Cellulose | Drilling Foam | Bentonite Pellets | Super Absorbent Clay