



Piling Grade Bentonite (TDS)

Product Description

Piling Grade Bentonite is a high-performance sodium bentonite powder developed for the preparation of support slurry in bored piling, diaphragm wall construction, drilled shafts and deep foundation applications.

The product provides **high swelling capacity, controlled rheological properties, low fluid loss and stable filter-cake formation**, helping maintain borehole stability during excavation and supporting efficient slurry circulation, treatment and tremie concreting operations.

Technical & Laboratory Test Data

Test Parameter	Test Method / Instrument	Unit	Typical Result	Specification
Appearance	Visual Inspection	—	Fine Homogeneous Powder	Fine Powder
Color	Visual Inspection	—	Light Beige / Cream	Typical
Bentonite Type	Mineralogical Analysis	—	Sodium Bentonite	Sodium Bentonite
Montmorillonite Content	XRD Analysis	wt. %	88.0	≥ 80.0
Moisture Content	Oven Drying	wt. %	8.2	≤ 10.0
Particle Size, Passing 200 Mesh	Sieve Analysis	%	96.0	≥ 95.0
Swelling Index	Swell Index Test	mL/2 g	28.0	≥ 24.0
Specific Gravity – Dry Mineral	Pycnometer	—	2.55	2.40–2.70
Loose Bulk Density	Gravimetric	g/cm ³	0.82	0.70–0.95
Slurry Density – Fresh	Mud Balance	g/cm ³	1.05	1.03–1.10*
Marsh Funnel Viscosity	Marsh Funnel	sec	38	≥ 35*
pH of Prepared Slurry	Digital pH Meter	—	9.4	8.5–10.5*
Fluid Loss / Filtrate Volume	Filter Press	mL/30 min	12.5	≤ 15.0*
Filter Cake Thickness	Filter Press	mm	1.8	≤ 2.5*
Sand Content – Prepared Slurry	Sand Content Kit	vol. %	0.6	≤ 1.0*
Slurry Stability	Static Stability Test	—	Stable	Pass
Sedimentation / Phase Separation	Static Observation	—	Minimal	No Abnormal Separation
Hydration Behavior	Laboratory Evaluation	—	Rapid & Uniform	Pass
Silicon Dioxide	XRF	wt. %	61.2	Typical
Aluminum Oxide	XRF	wt. %	17.4	Typical
Iron Oxide	XRF	wt. %	4.1	Typical
Magnesium Oxide	XRF	wt. %	2.8	Typical
Calcium Oxide	XRF	wt. %	1.7	Typical
Sodium Oxide	XRF	wt. %	3.2	Typical
Potassium Oxide	XRF	wt. %	1.1	Typical
Loss on Ignition (LOI)	Gravimetric	wt. %	8.5	Typical



Recommended Application: Bored Piling, Drilled Shafts, Diaphragm Walls, Deep Foundations & Slurry-Supported Excavation.

* Prepared-slurry values are dependent on bentonite concentration, water chemistry, hydration time, temperature and test conditions. Project acceptance limits should follow the relevant engineering specification.

CRITICAL SLURRY CONTROL PARAMETERS

For professional piling operations, slurry performance should be monitored throughout the construction cycle:

Stage	Recommended Control
Freshly Prepared Slurry	Density, Viscosity, pH
During Excavation	Density, Viscosity, Sand Content, Slurry Level
After Excavation	Density, Sand Content, Contamination
Before Concreting	Density, Viscosity, Sand Content & Project Acceptance Criteria
Recovered Slurry	Contamination & Suitability for Reconditioning

Actual acceptance limits should be established by the project engineer according to **soil conditions, groundwater conditions, excavation method and applicable project specifications.**

PACKAGING & STORAGE

Available Packaging: Industrial Bags / Jumbo Bags / Project-Specific Packaging

Storage: Store in a dry, covered and well-ventilated area. Protect from moisture and direct contact with water.

Handling: Keep packaging closed until use to prevent premature moisture absorption.