

Bentonite Grinding Systems

Applications and Properties

Bentonite is a special layer silicate mainly consisting of the swellable clay mineral **montmorillonite**. It is widely used as a bonding agent, adsorbent, stabilizer and additive. Bentonite becomes **bleaching earth** by using its ion exchange ability in a chemical activation process.

Typical applications are:

- sealing agent and drilling fluid in construction and drilling industry
- binder in foundries
- color developer and retention additive in the paper industry
- additive for animal feed in agriculture
- additive to improve appearance and quality of beverages
- decolorizer and purifier for edible oils
- rheological stabilizer in cosmetics
- softener and whitener in detergents
- stabilizer, sedimentation inhibitor and thickener in paints and coatings
- binder for pelletizing iron ore dust
- stabilizer in ceramics
- heat stabilizer in plastics



ANTI-GREYING



SWELLING



BINDING



VISCOSITY

NEA Benefits

Experience

- since 1956 in grinding and drying of bentonite, bentonite-coal mixtures and bleaching earth
- today, more than 50 bentonite grinding systems are in successful operation

Fineness

- coarse grinds: 15 - 25 % > 63 μm for foundry
fine grinds: 1 % > 45 μm for food, filler, paper
- highest classifying performance with sharp top cuts by SDR Radial Classifier

Moisture

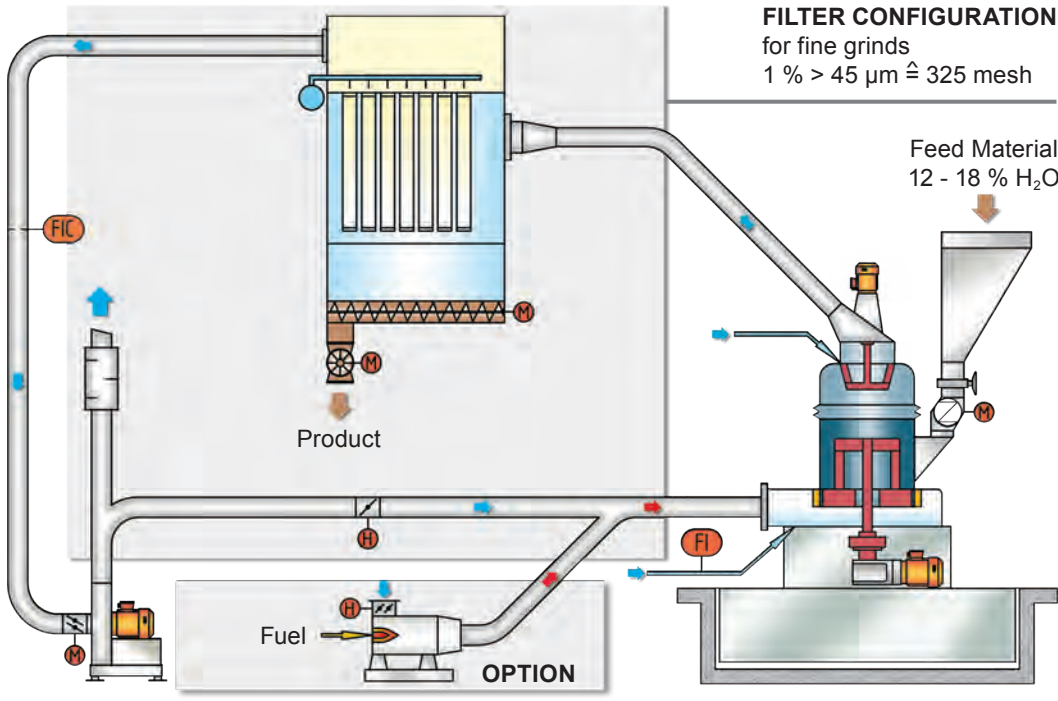
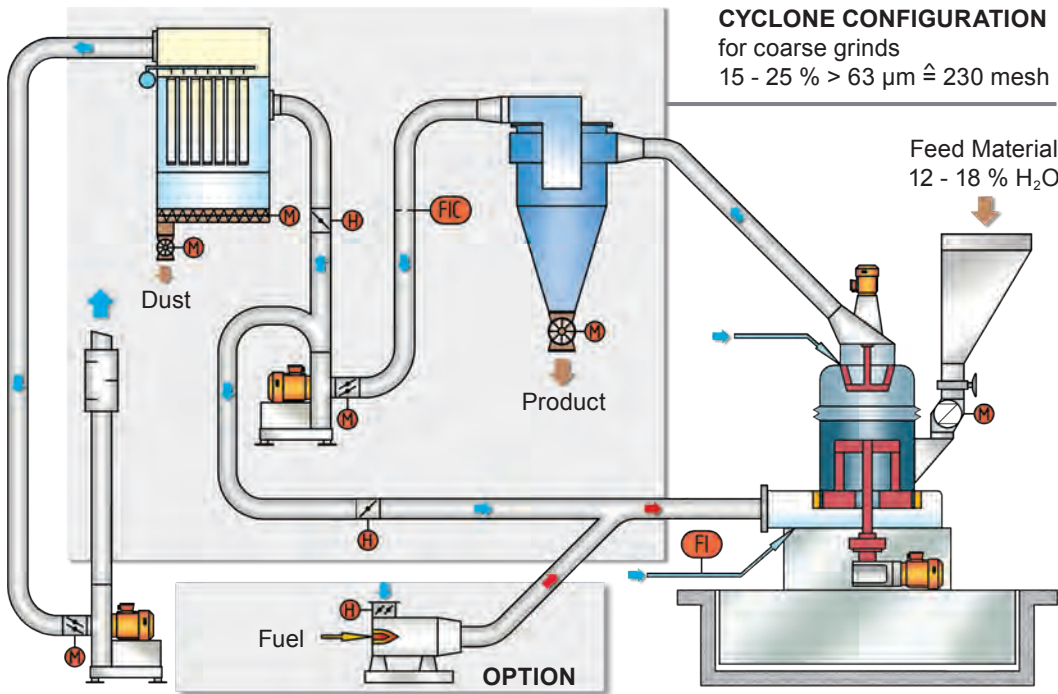
- feed material: 12 - 18 % H_2O
final product: 8 - 10 % H_2O for keeping good activation
- with feed moisture more than 12 % H_2O a hot gas generator is provided

Wear Protection

- Bentonite may contain grit causing higher abrasion inside mill
- wear resistant grinding tools
 - impurities' discharge at mill bottom
 - wear plates on mill bottom and above baffles



BENTONITE BENTONITE BENTONITE



Mill type	PM	03 U3	05 U3	08 U3 08 U4	12 U3 12 U4	16 U3 16 U4	20 U3 20 U4			30 U3 30 U4		60 U3 60 U4	
Grinding ring DIA	mm	940	1066	1270	1460	1670	2000			2300		2650	
Air flow rate	m ³ /min	180	260	430	640	940	1200	1380	1570	1800	2340	2800	3500
Discharge rate Coarse grinds	t/h	2.8	4.1	6.7	10.0	14.7	18.8	21.5	24.5	28.1	36.5	43.7	54.7
Mill motor	kW	37	55	90	132	200	250	250	315	315	400	500	560
Discharge rate Fine grinds	t/h	1.9	2.8	4.6	6.9	10.1	12.9	14.9	16.9	19.4	25.2	30.2	37.8
Mill motor	kW	37	55	90	132	200	250	250	315	315	400	450	560

Discharge rates and motor sizes are valid for bentonite with free silica content < 3% and based on mills with three pendulums.

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