

LINATEX®
Rubber Products

Excellent
Minerals
Solutions



Flat Bottom Classifier



Proven performance in hydraulic classification

The Linatex® flat bottom classifier is a well proven performer for the hydraulic classification of particles by size or density. The Linatex® flat bottom classifier reliably extracts light or small particles from slurry at high efficiency, while displacing a minimum of heavy or coarse particles to the overflow.

Applications

- Coal/ash separations by density
- Silica/heavy mineral separation by density
- Removal of deleterious material from sand including lignite, coal, wood, plastic/paper, clay/silt and mica
- Alternative to cycloning:
 - where fines must not be present in the underflow
 - for removing large amounts of clays and slimes
 - for sharp classification in mill circuits
 - at cut sizes coarser than usual applications for cyclones, typically between 100 and 1000 microns

Benefits

- Extremely efficient washing of soluble or colloidal species from granular particles by virtue of counter-current plug flow washing
- High sharpness, little misplaced material via direct bed measurement
- Multiple discharge valves on large units, to continue an even bed draw down without valve blockages or channeling
- Multiple water injection nozzles result in uniform flow even at minimal flow rates
- No moving parts are exposed to process slurry, meaning little maintenance is required and a long operating life is achievable
- Low headroom design results in low capital installation and maintenance costs and easier inspection
- Zero bypass, no fines in underflow



1: Overflow weir

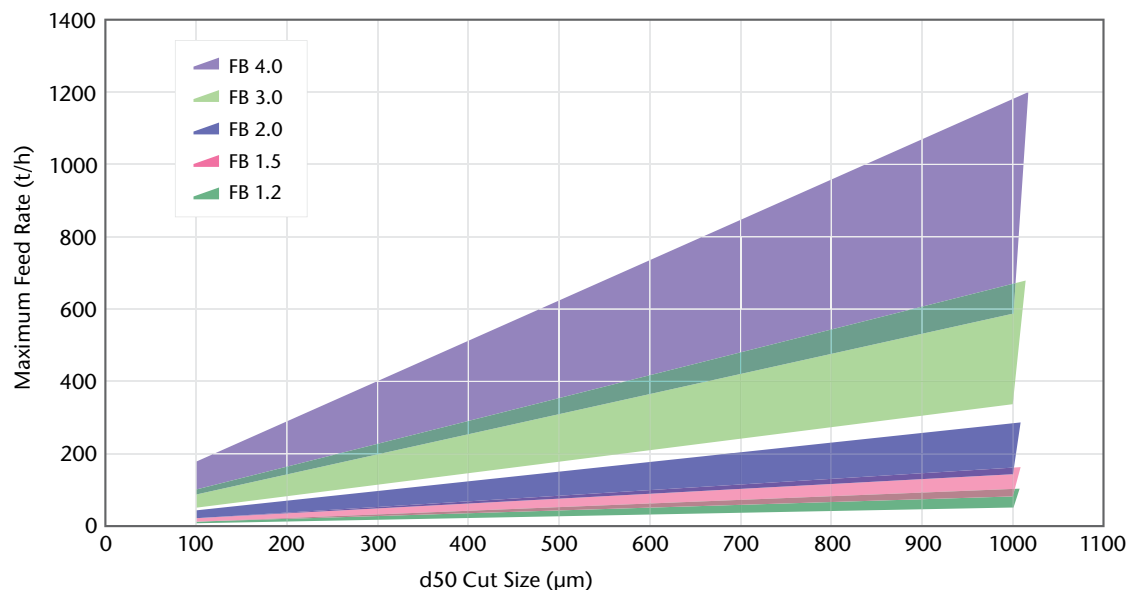
2: Classifier top

3: Classifier side view

4: Classifier feed well

5: Classifier bottom view

Typical capacity ranges



Principles of operation

Slurry enters the Linatex® flat bottom classifier through an adjustable central feed well (1) which uniformly distributes solids to a settling chamber (2).

A controlled flow of clean water is injected to a distribution chamber (3) under the settling chamber.

The clean water permeates a series of injection nozzles which are individually replaceable (4) and flows upward through the settling chamber, discharging over the overflow weir (5).

The interaction between the rising current and the settling solids creates a fluidized bed. This inhibits the settling of finer sized or lower density material, while allowing the heavier/coarser particles to pass easily to the bottom of the chamber via the hindered settling process.

A sensor (6) located near the top of the fluidized solids monitors the height and specific gravity of the slurry and causes multiple discharge valve(s) (7) to open when a set point is reached.

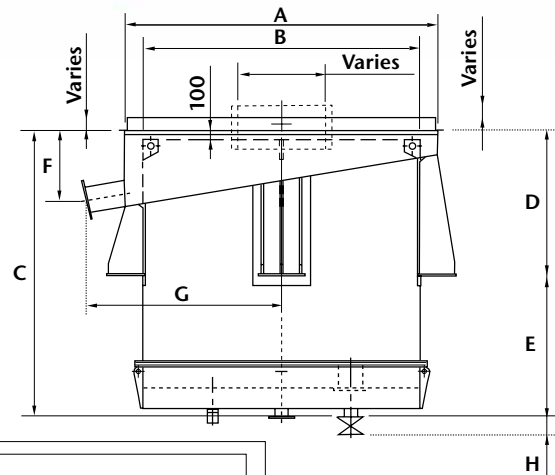
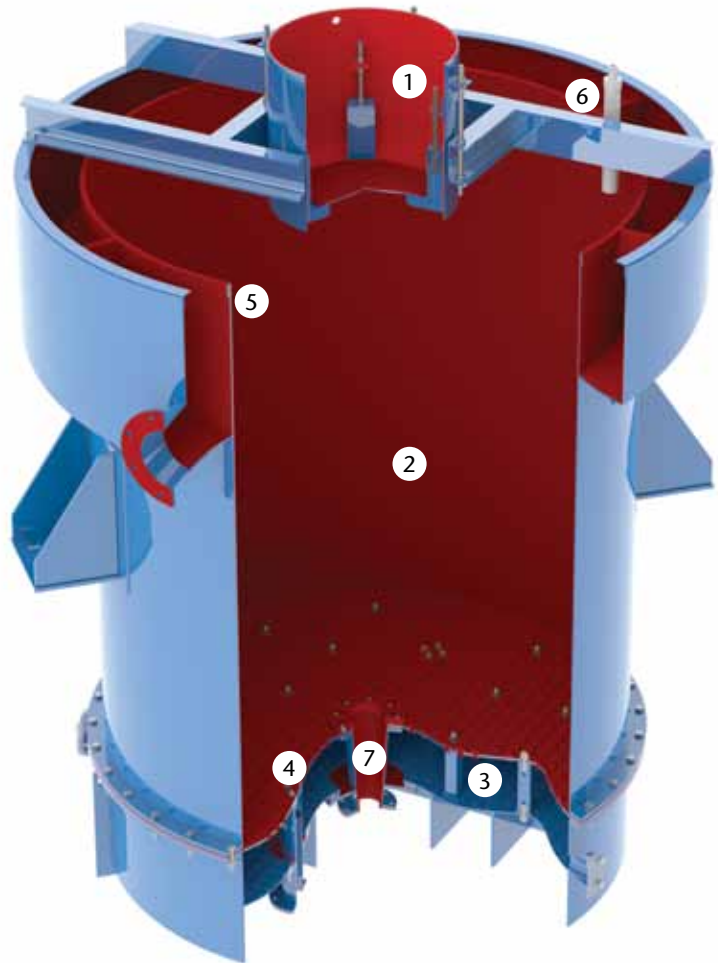
Solids are quickly discharged from the classifier in frequent, discrete pulses via the discharge valve(s). The on/off nature of the discharge avoids situations which cause valve blockages or bed channeling behavior (rat-holing) in other classifier types.

The pulsing of the bed also assists in removing entrained fines or light particles from the settled bed.

The finer or lower specific gravity solids which overflow the weir are typically directed to a densifying hydrocyclone, sieve bend or dewatering screen.

Continuous underflow discharge is also available to simplify downstream operations.

The higher density or coarser solids which discharge from the underflow may be stockpiled, further dewatered, conveyed or gravity-fed to the next process stage.



Dimensions

Model	# of discharge valve(s)	Dimensions (inches)							
		A	B	C	D	E	F	G	H
Linatex® FBC 1.0	1	63.0	39.4	103.3	90.6	12.7	13.5	34.8	12.0
Linatex® FBC 1.2	1	76.6	49.2	102.8	90.6	12.3	15.3	41.7	12.0
Linatex® FBC 1.5	1	83.3	59.1	102.5	89.8	12.7	22.1	47.2	12.0
Linatex® FBC 1.8	1	93.7	72.0	105.4	50.6	54.8	25.8	50.3	12.0
Linatex® FBC 2.0	1	116.5	78.8	112.2	57.6	54.6	29.7	66.3	12.0
Linatex® FBC 2.4	2	133.0	94.5	112.2	57.6	54.6	30.1	72.8	12.0
Linatex® FBC 3.0	3	140.0	108.0	118.5	59.3	60.0	20.3	80.2	12.0
Linatex® FBC 3.5	3	152.5	120.1	121.7	62.6	65.7	21.5	86.6	12.0
Linatex® FBC 4.0	4	168.0	137.6	122.7	96.7	26.0	26.0	93.4	12.0

Weir Minerals Customer Testimonial

To watch video testimonial from Ozark Premium Frac Sand, Arkansas, USA scan the code at right, or visit:

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