Plant Engineers Digest

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Pelletizing: From Waste Fines to Usable Product

Product yields from mineral processing facilities can be as low as 50%, meaning the other half is dust or waste fines. Frequently this waste is landfilled or slurried but with the process of pelletizing, this waste can be combined with binders, fertilizers and other materials for beneficial use.

The Pelletizing Process

Pelletizing is the process of compressing or molding a material into the shape of a pellet or granule, also referred to as agglomeration. When aggrerate rock is crushed and processed there is a large amount of dust that is not suitable for production. This dust becomes the base for pellet production. The supplied dust or fines are characterized according to their moisture content and particle size, which determine's the type of binder that is required.

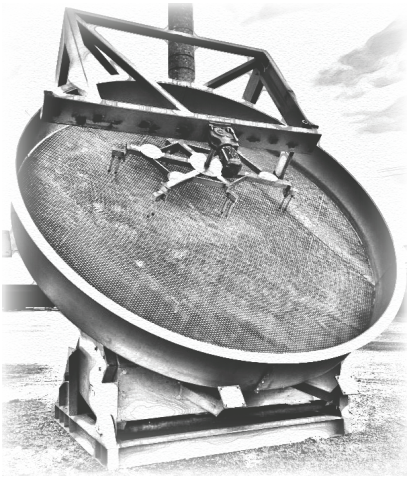
Typically a pin mixer is used to precondition the material to create a starter pellet that will be the base of the finished product. Once conditioned, the starter pellets are then continuously feed into a disc pelletizer with an additional additive binder.

The pellets will reach their desired size in the disc pelletizer and then be conveyed to either a rotary or fluidbed dryer. Any product that is considered oversized or undersized is then screened out, recrushed and returned to the pin mixer to repeat the pelletizing process.

Benefits of Pelletizing Your Waste Fines

Pelletizing waste fines benefits the bottom line of the operating plant as well as the environment.

For the operating plant, pellets can produce a revenue stream from a waste product. In some cases the produced pellet can replace an existing product.



Environmentally, the obvious benefits include a reduction in landfill waste and slurry retention ponds, which have an unfortunate history of leaking.

Further, some pelletized waste fines act as soil amendments and can also capture carbon. Pelletizing fines enable dust free broadcast spreading in fields.

With a large focus on being more conscious of our carbon footprint, pelletizing technology has become a favorable method for reducing waste and achieving those goals.

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