

Hemp Processing: Selecting Bulk Material Handling Equipment

As a burgeoning industry, hemp has a long way to go in terms of efficient processing. Many processing plants currently rely on labor-intensive systems with high costs. This, of course, won't always be the case. As the hemp industry matures and expands outside the CBD market, smart business owners will invest in more efficient processing methods.

As part of this investment, hemp processors will build new and modify existing hemp processing facilities. This is where we come in. As processors design factories, it will be easy for them to focus on the islands of production in their system (i.e. the expensive equipment that actually makes the end product) and overlook the equipment that transfers material between these islands. By this, we don't mean they'll *forget* they need conveyance equipment. We mean they'll easily prioritize other systems and consider transfer systems last.

EPC contractors often make the same mistake. Too often, material handling gets placed low on the list of priorities. As a result, these systems often get assigned to the lowest bidder, and the company ends up with cheap machinery at their plant, machinery which becomes an unprofitable bottleneck when it breaks down.

Examples exist in other industries of the consequences to companies that fell into this trap. In the pellet industry, for example, several plants failed within the past few years primarily due to bad conveyors. Production could never reach a profitable level, and the plants had to close.

To prevent such disasters in the hemp industry, we suggest professionals consider transfer and material handling systems early in the process of designing a processing plant. Hemp processors cannot expect production will run smoothly otherwise.

Evaluating Material Handling Systems for Hemp

Conveyor Efficiency

When evaluating material handling systems, be aware of horsepower and quality. To keep operational costs low, hemp producers will want to find the most efficient systems possible. High horsepower means high energy costs, which will lower your overall profitability.

You will find that mechanical conveyors are much more efficient than pneumatic conveyance systems. Pneumatic systems require 5-10 times as much power as mechanical ones. We've seen instances where they require 15 times as much. This is because pneumatic systems are inefficient by nature: energy is spent moving air, not just material.

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For hemp, pneumatic systems likely aren't the best choice anyway. Pneumatic conveyance systems are best for dry powders with consistent characteristics, not plant materials or materials that vary in size, shape, and density.

Of the types of mechanical conveyors available, belt and drag conveyors will meet most of your transfer needs. The main advantages of belt conveyors are that they require little maintenance and can be lower initial cost. On the downside, they are less efficient than drag conveyors, they cannot convey materials at a steep angle, they do not contain dust, and they leave tailings (material that sticks to the belt and falls off underneath the conveyor).

The advantages of drag conveyors are that they are very efficient, they can be enclosed for dust-tight or dust-controlled performance, and they can convey material at steep angles (up to vertical). The disadvantages of drag conveyors are that they may require more maintenance than belt conveyors, and they tend to cost more up front.

Conveyor Quality

A second problem of which processors must beware when selecting a conveyor is quality. It doesn't matter which conveyor system you purchase, if it's built on the cheap, you can expect poor performance, high installation costs, unexpectedly high structural support costs, high operational costs, and more downtime. You should only purchase equipment from manufacturers who back up their machinery with strong warranties and whose business model isn't built around spare parts.

As for what else you should look for in a material handling system:

- **Cleanliness:** By containing dust, you'll eliminate hazards and employees will spend less time pushing brooms.
- **Structural Supports:** Supports are often quoted separately from conveyors. Many conveyors aren't built with strong boxes and therefore need many supports. (We build our [SMART Conveyors](#) with strong sidewalls, so they require far fewer supports than many comparable conveyor systems.)
- **Shipping and Installation Costs:** Modular construction means fewer shipments and faster installation time.
- **Modular Design:** A modularly designed system will allow you the ability to easily modify the layout – at install or anytime in the future .

If you need guidance regarding material handling systems, Biomass Engineering & Equipment has you covered. We offer EPC-level service for material handling systems and can equip your facility with efficient, state-of-the-art receiving, storage, and conveyance systems. Talk to us! [Schedule a phone call now.](#)