

Looking for More Production Capacity? Start with Your Material Handling Process



Flexicon combines decades of bulk material handling expertise with application-driven equipment selection to help businesses reduce labor costs, increase production capacity, and streamline operations.

Executive Summary: The return of manufacturing to domestic markets is creating new opportunities for small and medium sized processors. To maintain production levels without the expense and delay of building new plants, global brands are increasingly turning to nearby partners to replace former overseas capacity. Small and mid-sized enterprises (SMEs) that can deliver comparable or greater volumes at competitive costs are well positioned for significant growth—whether by competing directly, partnering as packaging specialists, or serving as toll processors. This paper will examine the advantages of bulk materials handling and the essential elements of a successful bulk materials handling system.

Introduction

The terms “unprecedented” and “unpredictable” have been used so often to describe events occurring all over the world since 2020 that they have nearly lost their meaning. Nevertheless, the combination of geopolitical instability, shifting trade policies, logistical breakdowns, and climate-related disruptions has exposed the vulnerabilities of the global supply chain, compelling processors across many industries to rethink their operations.

From Offshoring to Outsourcing

As a result, an emerging trend is the re-establishment of processing operations closer to the markets where the end products are consumed. Known as onshoring, nearshoring or friendshoring, this approach aims to reduce supply chain risks by locating manufacturing and processing facilities in regions with stronger political alignment, greater logistical reliability, and faster delivery times.

The actual return of manufacturing to domestic markets is creating new opportunities for small and medium sized processors. To maintain production levels without the expense and delay of building new plants, global brands are increasingly turning to nearby partners to replace former overseas capacity. Small and mid-sized enterprises (SMEs) that can deliver comparable or greater volumes at competitive costs are well positioned for significant growth—whether by competing directly, partnering as packaging specialists, or serving as toll processors.

One vital step for organizations looking to stand out in this period of transition is for them to re-evaluate the machinery currently in use. The use of equipment that relies heavily on manual or repetitive labor, or consumes excessive amounts

of energy, are signals that it is time for a system upgrade. Transitioning to automated or semi-automated bulk material handling systems can streamline operations, increase productivity, and create opportunities for the introduction of new product lines.

Handling materials in bulk can offer significant efficiencies, but it also presents unique challenges. While numerous manufacturers offer equipment designed to manage large volumes, understanding both the advantages and the needed resources for successful bulk handling is critical before making any operational decision or capital investment.

Modular system designs allow manufacturers to expand processing methods as production needs change, avoiding extensive retrofits and reducing capital expenditures.



Advantages of Handling Materials in Bulk

- **Reduced Costs:** A per unit cost is usually lower due to economies of scale. By purchasing in bulk, processors can reduce the time and administrative costs on processing and shipping. Processors may also realize lower packaging and handling costs, as bulk orders eliminate the need for multiple smaller bags, drums, or totes—saving on materials, time, and disposal.
- **Fewer Supply Interruptions:** Maintaining a larger on-hand inventory protects against delivery delays, supplier shortages, and market disruptions. With materials available in larger quantities, operations experience fewer stoppages for resupply, supporting continuous or large-batch processing.
- **More Consistent Material Quality:** Smaller batches of material may vary in blend or composition from one run to the next, leading to inconsistencies in the final product. Purchasing materials in bulk promotes greater uniformity, making consistent quality across an entire production run far more likely.
- **Quicker Response to Sudden Demands:** With bulk materials on hand, processors can more quickly respond to demand spikes or introduce new product lines without waiting for additional shipments.

Operational Cost Factors: Manual Sacks vs. FIBC Bulk Bags

Switching from manual sacks to FIBC bulk bags affects cost across every stage of the material handling journey - from the packaging material itself through to storage, handling, and product integrity. The table below compares the two formats across five key operational characteristics. Together, these characteristics determine the true cost of packaging beyond the unit price of the bag itself.

Operational Factors	Manual Sacks	FIBC Bulk Bag	Estimated Savings
Packaging Cost per lb General benchmark across bulk dry materials	\$0.08-\$0.15/lb	\$0.02 to \$0.03/lb	75% lower packaging cost per lb
Bag Quantity Required Approx bags which need to be moved for 20 ton material	800 individual sacks	20 bulk bags	50~75% fewer bags per 20 tons
Labor and Handling Workers need to move a sack vs. bulk bag	3-5 workers to fill, stack, and palletize	1 worker to lift, transport, and stack	80% reduction in workers required
Storage and Warehousing Efficiency Floor space and stacking capacity	1 ton per m ² of floor space, expensive racking to prevent slumping	2 tons per m ² of floor space, stackable 2 bags high	50% less floor space per ton
Product Protection and Waste Reduction Bag construction and its impact on product loss	Low GSM woven PP or paper, prone to tearing and punctures	High GSM woven PP, reinforced design with minimum spillage and contamination	1-2% of annual product value recovered

Sources: Kanplas (2026), Custom Packaging Products (2025), Cliffe Packaging (2025), HH Design & Mfg (2026). All figures are applicable to general bulk dry material handling. Per-material breakdowns are not available in public sources and would require supplier quotation for accuracy. Packaging cost per lb doesn't include labor, freight, warehousing, or the product inside.

The Keys to Successful Bulk Material Handling

- **Modularity:** Systems designed to change or expand with production needs provide a form of “future proofing,” eliminating the need for major rebuilds or complete equipment replacement if capacity requirements or processing methods evolve.
- **Automation:** Beyond basic software features such as intuitive user interfaces, automation systems should support integration with equipment from multiple manufacturers, incorporate security layers that protect proprietary information while enabling routine operations, and provide reliable backup for critical control functions. Automation also plays a key role in replacing manual tasks, an important consideration when labor resources are limited or the workforce is aging.
- **Accuracy:** Although raw materials may be received in bulk quantities measured in tons, the formulation of the finished product often requires precise dosing of individual components in gram-level increments. Accurate measurement and allocation of conveyed materials are critical to minimizing waste and ensuring correct batch composition.
- **Adaptability:** Supply chain disruptions can affect the type, properties, and packaging of raw materials. An effective bulk material handling system is one that can accommodate these variations without requiring a major recalibration.

Get Started with Flexicon

The first step in transitioning to a bulk handling system is to consult with an expert. With Flexicon, this process begins with a detailed discussion of your material sources and destinations, the physical characteristics of the materials in your process, the layout of your facility, and the specific goals driving your expansion.

From there, Flexicon leverages insights gained from over 25,000 installations worldwide to match your material flow and handling characteristics to your production requirements. In many cases, Flexicon already has relevant data on file; if not, laboratory testing on full-scale equipment

is conducted at no charge to you. These tests evaluate material behavior under varying conditions—including flow, moisture content, abrasiveness, and sensitivity to contamination—helping to identify potential challenges before scaling up.

Only after this careful evaluation will Flexicon design a bulk handling system fitted to your requirements. With a broad product range and the in-house capability to integrate systems from multiple manufacturers, Flexicon's recommendations are based entirely on your operational needs, not constrained by a limited product line.



Careful evaluation of materials, processes, and facility requirements lays the foundation for a successful bulk handling system.



Bulk bags can be stacked, maximizing storage capacity while minimizing floor space requirements.



Bulk material handling equipment effectively contains dust and contaminants, protecting workers and preserving product purity.

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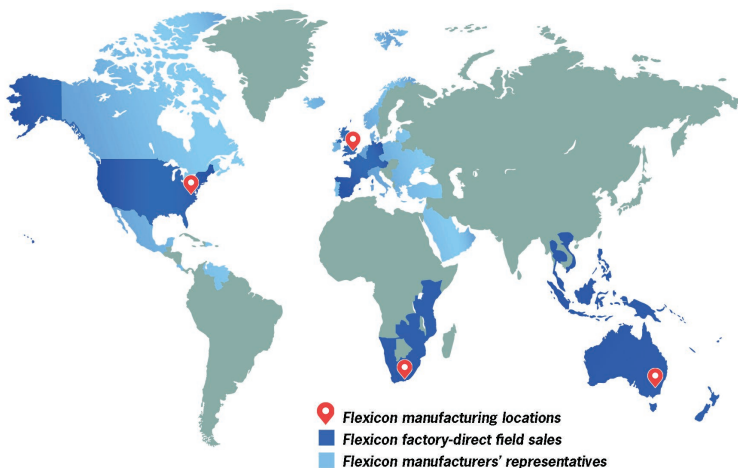
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Make adaptability a core component of your process

Integrate modular systems to ensure uninterrupted production and maintain quality

Back it all with a Lifetime Performance Guarantee



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