

Wood Processing Systems

TURNKEY WOOD HANDLING SYSTEMS

CMT is both a manufacturer and integrator who has been providing bulk material handling systems since 1996. Wood systems present unique challenges related to combustibility and flammability. Additionally raw wood products will vary from fine powder to chips to sticks. Sticks and chips can intermingle, like a birds nest, creating unique flow issues. Proper storage, discharging, conveying and processing are critical in providing a reliable and safe system.

Wood Flour



Wood Fibers



Wood Chips



Wood Pellets



Raw Material Handling

Systems are provided to accept the specialized trucks delivering the wood product. This generally includes a specialized receiving hopper, hopper conveyors, a magnet and a pneumatic conveying system to fill the storage silo. Dust collection is critical due to the combustibility of the product. Product is received at the hopper and is instantly discharged and conveyed to the storage silo. This is accomplished via pneumatic or mechanical conveying. Product degradation and gentle handling is always evaluated when dealing with wood pellets.



Wood Receiving Hopper with a PD Blower & Hydraulic System.
Designed and Commissioned by CMT



The Dust Collector is sized to meet the total demand of the system provided, plus a safety factor. Complete feedback of the entire DC system ensures reliability. XP features are provided including Isolation Valves and Rupture Panels or Flameless Vents.

Peace of Mind

CMT sizes and specifies all equipment within the system, including the blower, pipe size, rotary valve size, the hydraulic pump and the dust collector, along with all controls, taking responsibility for design and function.



WOOD STORAGE, DISCHARGING & CONVEYING

Silos are fitted with rupture panels based upon the Kst, Pmax and Pred values of the particular wood being processed. Isolation valves, chemical suppression and other safety measures are implemented as required.

Silo Discharging

Specialty silo discharging systems are required to properly discharge the various wood products from the silo. This consists of a hydraulic driven internal screw that constantly brings product to the center/ discharge of the silo.

This silo unloading system discharges to a horizontal screw conveyor that feeds the conveying system. Complete system controls are provided, with numerous safety inputs, ensuring smooth and safe operation.



Conveying - From Silo to the Process

A screw feeder meters product to the conveying system at the specified rate. Product is then conveyed to the mixing process. Product is generally conveyed to a Gain-in-Weight hopper located above the mixer. This allows one batch to be mixed while the next is prepared. Once the mixer discharges, the weigh hoppers discharge to start the next batch cycle. The receiver can be a filter receiver when conveyed pneumatically or a weigh hopper when conveyed mechanically.



Mechanical Conveying

Mechanical conveyors are chosen at times based upon proximity to the discharge point, product characteristics to be conveyed, environmental conditions and safety conditions



Silo Discharging

Laidig's specialized system is a reliable solution for discharging difficult-to-manage wood products from silos, preventing bridging and ratholing while also protecting the integrity of the silo with specialized vents for upset conditions.



Pneumatic Conveying

Dilute phase pneumatic systems, fitted with NFPA compliant Rotary Valves, convey product at a specified rate from the silo to the process.



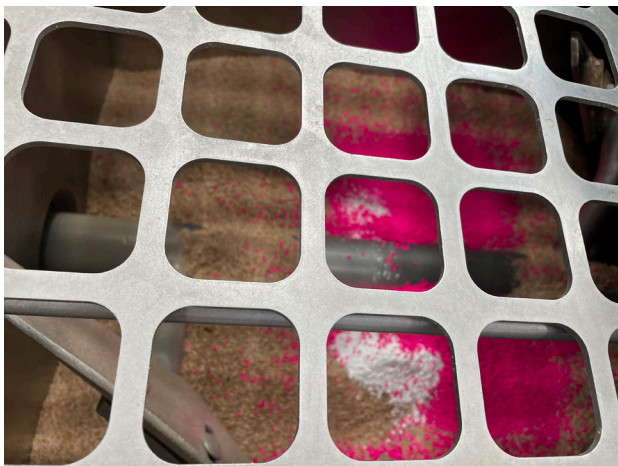
MINOR ADDITIONS & MIXING

Minors are generally added via bag dump stations and/or bulk bag unloading stations. As the minors/additives must be accurately weighed, loss-in-weight feeders are generally used to meet the batch accuracy requirements. Product is then conveyed to a weigh hopper, above the mixer, confirming the amount batched is received.



MIXING

When it comes to mixing, clients require a homogenous mix, in "x" time. To meet these two requirements CMT works diligently to determine batch cycle times, surge bin sizes, proper order of addition and mix time for each. Weighing approach is critical in meeting your needs. CMT will provide a fully documented batch cycle, ensuring we understand and meet your needs.



Additive with Pink Control Substance added to the Wood



Mixed Product with Pink Control Substance Uniformly Dispersed



CONTROL SYSTEMS

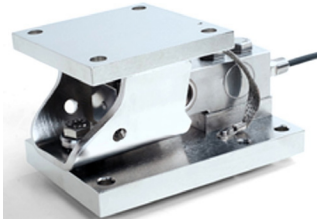
SCALING & CONTROLS

CMT provides Complete Control Systems with all projects. Control Narratives, which include all batch cycle data, are provided for approval during the project process. Additionally, all interlocks, safety interlocks, I/O lists, Motor lists and Dust Collection requirements including CFM at each pickup location are provided. PFDs and PIDS are provided at additional cost.

Scaling Approach

Your application is the determining factor of Gain-in-Weight batching versus Loss-in-Weight batching. Time considerations include the number of batches required per hour, batching and transfer time, mix time and discharge time all factor into system design. Other factors such as combustible products, pneumatic conveying versus mechanical and proper dust control affect the system design.

CMT provides both analog and digital load cells and scales, all based upon your application and needs. Calculations are provided to ensure the scale chosen can meet your batch accuracy requirements.



Weighing tolerance 1%

1%

Max. load	Model	Readability (d)
300 kg	PFD774-300 (80,000d)	5 g
300 kg	PFAS84-300 (30,000d)	10 g
600 kg	PFD774-600 (80,000d)	10 g
600 kg	PFAS84-600 (30,000d)	20 g

Typical Minimum Weights (g)	
100	1000
	800 g
	1.2 kg
	1.6 kg
	2.6 kg

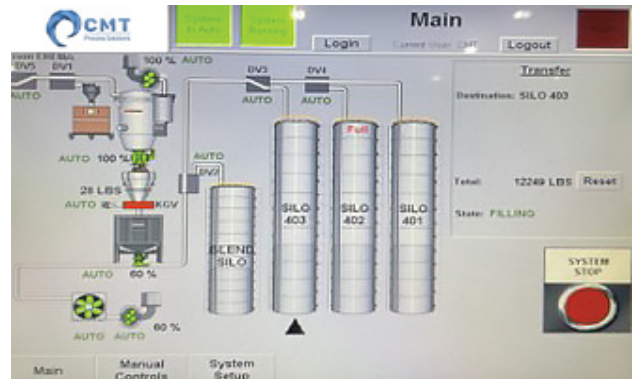
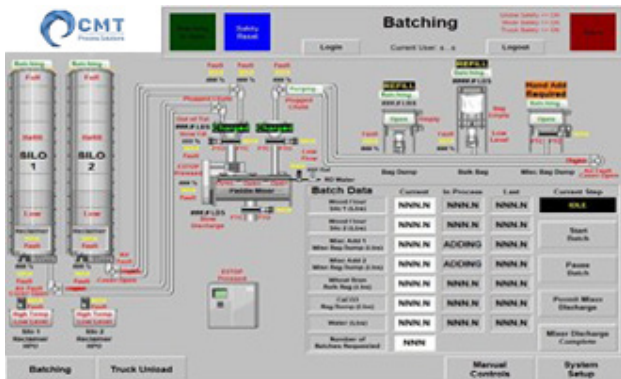


Batching Control

Each batch controller comes the following features: Fast/Dribble control. Fast & Dribble amounts. Fast & Dribble speeds. Preact with Auto Learning. Auto Jog. Out of Tolerance Alarms, high and low, vibration rejection, as well as other functions to provide repeatable, accurate batches.

System Wide Controls

CMT generally provides Allen-Bradley PLCs - MicroLogix™, CompactLogix™ or ControlLogix™- are utilized in providing complete control of an entire process or sub-system. These controls perform all the batching functions required while also controlling the automated process including, truck or rail car unloading, storage, conveying, feeding and weighing, blending, metal removal, sizing, screening, dust collection, inventory control and more.



TEST-IT™

CMT & Our Partners Maintain Dust-Free, State-of-the-Art, Testing Facilities for Your Use

- Dust tight/ containment will be demonstrated with your worst products
- All three agitation systems are available for testing
- Empty Bag, Waste Compacting
- Mixer testing – Ideal time, paddle speed, mix time determined
- Batch Feeding, Gain-in-Weight or Loss-in-Weight in our mass flow feeders.
- Testing will be performed, written feedback provided, including recommendations based upon our findings.
- Process warranties are always integrated in the purchase of a CMT system

In Person Demonstrations



Live Stream Demonstrations



Video Recordings



"Due to new OSHA standards we had no choice but to replace our existing bulk bag unloading equipment at our six US facilities. We tested at 9 different bulk bag unloading suppliers to ensure we made the best decision in this upgrade. After all this evaluation I can say that CMT truly offers the most dust-tight unloader in the industry. In fact, they are the only supplier that had zero design flaws". – Major CMT Client

WHY TEST

For Confirmation, For Peace of Mind, For your Operator's Safety

Testing your product, with the exact equipment you may purchase, will enhance your decision-making process more than anywhere else in your evaluation and purchasing process.

TESTING GUARANTEE

If you are not 100% satisfied with your visit to our facility we will pay your travel expense. Call your contact to take advantage of our no obligation testing and learn about our testing guarantee.