

Recycled Paperboard Technical Association

Welcome

Paul Schutes RPTA Executive Director

Housekeeping

If kicked off, reconnect in a minute.



- Webinar is being recorded for later posting on RPTA members-only website
- Attendees cannot be seen or heard



 Presentation slides will be emailed to attendees who respond to RPTA's webinar feedback form.

Kate McGlynn RPTA Associate Executive Director



- Maximum to hold early questions
- May want to hold early questions

Introduction

Brown Fiber Re-Pulping and Reject Handling Best Practices

Steven Johnson

Applications Engineer Kadant Black Clawson



Dave Pearson Operating Board Member General Manager, WestRock



Brown Fiber Re-Pulping and Reject Handling Best Practices



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KĀDANT

From Bales to Stock Importance of details in pulping



From Bales to Stock Acknowledging Specs vs. Reality

- ISRI OCC specs have not changed in 20 yrs, but bales in warehouses have!
 - #11 OCC spec is 3%, we find 3-5% is more accurate
 - #4 Mixed Waste spec is 5%, we find that it is location dependent and can be 8-15%+
- Systems must be designed, installed, and operated with this trend in mind
 - More Multi-Detrasher Systems being installed



Special Bale Found in a Warehouse



From Bales to Stock

Reject Handling is Material Handling

- When looking at a new OCC system, start at the begining
 - Loading, Unloading, Staffing
- Loading bales means loading trash
- 18' Diameter Pulper (approx. 500 tpd) holds ~6 bales at a given time
 - Every bale is significant
 - 1MW:30CC ≠ 6MW:180CC
 - 6.7-8.3% vs. 5%-15% debris content





From Bales to Stock Building the right system



- Don't Pinch Pennies on the Pulper Area
 - Very difficult to install a new pulper given equipment size, cost, and accessory equipment that needs to be installed nearby
 - Larger size can better absorb swings in bale quality
- Detrashing units are key to pulper health
 - Trash absorbs power, limits extraction



- 1) Understand the Position
- 2) Front-Loaded Approach
- 3) Use what is Available and Reliable
- 4) Parts not Installed Don't Break



Understand the Position

Batch Detrashing

- Preferred in Large Systems
- Used in highly variable debris loads

Continuous Detrashing

- Preferred in Small to Large Systems
- More freedom of installation

 Cycle design allows for wider range of operation

- Less disruptive to rest of system
- Fewer Valves



Detrashers





Model 200 Continuous Lights Detrasher



Model 42-5000 Hydrapurge II-X

... Need A Strong Supporting Cast



Understand the Position





- First Opportunity at Trash Removal
 - In high MW applications, ragger can be a significant detrasher rather than just bale wire
- Not everything has to remove debris to improve debris removal
 - A proper system is an orchestra
 - Each unit effects the operation of the system
 - Ragger Rope showers can contribute to the objective by improving rope cutter reliability while improving yield



Understand the Position



- Trashwell Operation influences
 Detrasher and Grapple effectiveness
 - Consistency will dictate the ability to move debris effectively towards the detrasher or settle it for grappling
- New grapples can monitor pick heights, provide trends, and have adaptive cycles
 - More robust operation with less operator intervention
 - Process stability maximizes this benefit



Front-Loaded Approach

- Debris should be removed at the earliest opportunity and with minimal chance of degrading to a smaller classification
 - Continuous Detrashing
 - Wash Tower
 - Ragger









Use what is available and reliable



- Water going to the pulper can work along the way
 - Range of water addition for production gives a dependable amount of water to utilize
- The most reliable thing in a mill is gravity
 - System design and layout needs to not only consider gravity, it should put it to work

Debris Removal Strategy Use what is available and reliable







Wash Tower: The Latest Addition to a Modern Detrashing System!

Debris Removal Strategy Use what is available and reliable



- Yield improvement
- Reduced manpower required
- Reduced landfill costs
- Only requires water that was already going to pulper





Typically 4 "picks" from Trash Tower to Wash tower, then 1 "pick" from wash tower to disposal

Use what is available and reliable



Think vertically when handling trash, especially at high concentrations



Positioning the Ragger Cutter well enables the weight of the rope to stabilize operation



Use what is available and reliable



Bin/Hopper Management

- Often overlooked as "too simple to matter" during design
- Inability to manage effectively can lead to reduced production, poor quality, or overburdened operators
- Safety Line of Fire (Vertical)
- Accessibility Can people access the area easily, openly
- Robust What if something goes wrong?
- Schedule Train operators to be routine but responsive



Use what is available and reliable

- Drum Screens make effective final stages before dewatering
 - Low-attrition
 - Uses water on way to Pulper
 - Robust



- Similar strategy used in Tailing Coarse Screen, but technical details addressed
 - Both provide rejects that are suitable for dewatering together
 - Can be installed adjacent to allow combined reject handling of 2 sub-systems



Use what is available and reliable

- Screw Presses are standard equipment for dewatering Pulper and Coarse Screen debris
 - Requirements often dictated by local landfill costs & regulations
 - Often has parallel installed unit to ensure continued operation
 - Feed can be problematic by nature
 - Disruptive
 - Gravity-fed design
 - Install under Drum Screens
 - Chute design



Debris Removal Strategy Parts not Installed Don't Break

- Since detrashing is about moving solids, conveyors are tempting
- We caution customers to avoid conveyors where possible.



- Where's the Conveyor?!
 - Because the conveyor didn't have excessive clearance, a surge of debris from the press could take down the reject handling system for hours!



Summary

- Handling debris needs to be a design focus early in project
 - Failure to plan wisely can lead to problems through the life of the system
- There are many parts to a detrashing system, more than just the detrasher
 - Warehouse/Bale Conveyor
 - Pulper
 - Trashwell
 - Wash Tower
 - Grapple
 - Ragger

- Rag Rope Cutter
- Detrasher/Trash Pump
- Drum Screen
- Reject Press
- Reject Removal Process

 A successful reject management design utilizes effective, proven strategies with the individual needs of a given project



Questions?



Pascal Allard Operating Board Cascades, Process Specialist



Thank you!

Contact Information

Steven Johnson Applications Engineer Kadant Black Clawson LLC Lebanon, Ohio 912.541.5480 <u>steven.johnson@kadant.com</u> Web: <u>fiberprocessing.kadant.com</u>

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