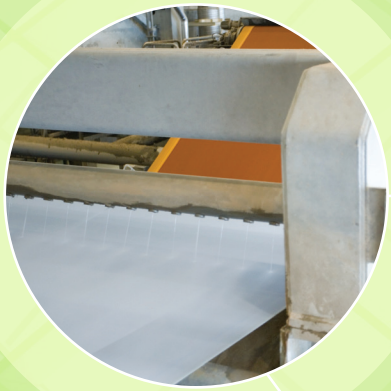
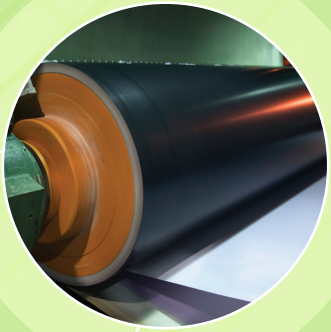
FEWER DEPOSITS ON FELT. MORE IN THE BANK.

Your guide to choosing the best Felt Cleaning and Conditioning program for your mill.





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INTRO

WHEN YOU KEEP THE FELTS OPEN, YOU KEEP PRESS SECTION PERFORMANCE AT ITS PEAK.

Your biggest seller is the quality of your products. So, what happens when your felt fills and your press section fails?

- Energy demand increases
- Excess water slows you down
- You experience sheet crushing, breaks, holes, etc. that reduce production
- Downtime for batch cleaning increases
- Your mill's profit decreases

These drawbacks don't make for a high-quality end product. That's why your paper machines need an effective felt conditioning program.

In this eBook, you'll see how a proper felt cleaning and conditioning program is not only vital to your mill's success, but also completely attainable.

Continue reading to learn more about what could be filling your felts, what your options are and how Buckman can help.

Optimum press performance requires several key areas of the press operation be considered.

A proper felt cleaning and conditioning is one of them.

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CHAPTER 1

THE PRESS SECTION

To ensure quality products and avoid paper machine runnability problems, it is imperative that your mill have a good press felt conditioning system. Press felts need to maintain their void volume and caliper, prevent wear, take water and be de-watered uniformly throughout its operations. This is achieved by being cleaned, conditionedand lubricated. Optimum efficiency is attained by maintaining “like-new” felt characteristics.

A press section’s three primary purposes:

- water removal
- sheet quality development
- sheet transfer without defects

Press section’s performance requirements:

- support the sheet through the nip and web transfer
- remain permeable and porous in the nip
- uniformly transfer pressure to sheet in nip
- be resilient
- cannot adversely affect sheet quality (felt marking)

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CHAPTER 2

WHAT'S FILLING YOUR FELTS?

Stickies and filler from recycled fiber? Pitch and lignin from virgin fiber and coated broke? Wet strength, dry strength and other polymers? Size? Starch? CMC? These are the tough deposits tissue, packaging and graphics paper mills fight every day.

Ash, extractables and other organics can find their way into your press felts and cause issues with your productivity, efficiency and profit. Any contaminants not removed from pressing, will accumulate in the felt, which is known as fill-up. Felt filling and compaction can lead to a loss of porosity (void volume) and loss of permeability (air or water flow), increased vacuum requirement, felt and Uhle cover wear, sheet drop off, etc.

These are only a few of the problems seen in response to press fill-up:

Sheet Crushing Occurs when your felt and roll can't handle the water at the nip and can result in micro-wrinkles, hydraulic marking, rippled or mottled end product.	**Blowing** Occurs when air can't escape through felt entering nip and can result in wrinkles or crushing.	**Sheet Stealing** Occurs when higher moisture levels result in wetter and smoother fabric surface making it more difficult to transfer off the fabric.

CHAPTER 3

WHICH PROGRAM IS RIGHT FOR YOU?

To make sure your press section is maintaining its purpose and requirements, you'll need an efficient Felt Cleaning and Conditioning program. Your program should remove contaminants in felt chemically and/or mechanically, weaken and reject solids through use of sufficient water and remove the solids and water through a suction system.

Step one of the program includes an in-depth audit of your press section to uncover the nature of your felt deposits. Followed by choosing the correct mechanical and chemical conditioning that best fits your needs. To ensure the program is right for you, measuring and analyzing the results is also a necessary step from your solutions provider.

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CHAPTER 4

CHEMICAL CONDITIONING

Choosing the right chemical conditioning is important and based on what works best with your paper machine.

1. **Down Batch Cleaning** is done during a machine outage or break and requires a high chemical concentration. The frequency depends on the needs of the machine but encourages contaminant build up because they are removed so infrequently.
2. **Batch On-The-Fly** is done with the sheet on and requires a lower chemical concentration than the batch cleaning. Contaminants do not build up as much.
3. **Continuous** provides continuous cleaning and conditioning, is fed at lower concentrations and prevents buildup of contaminants throughout felt life.
4. **Combination** is the most effective method for maintaining maximum felt performance, as it combines continuous felt cleaning with periodic batch washing.

Every grade of paper brings its own peculiar set of contaminants. You'll want a supplier who can establish a program to control these deposits and condition the felt for maximum quality and output. So once your felts are tested, it's time to determine the most effective method: batch, batch on-the-fly, continuous cleaning, or a combination program for your press section.

CHAPTER 5

BENEFITS OF FINDING YOUR PERFECT MATCH

The right Felt Cleaning and Conditioning program will prevent felt filling and improve absorbency. With better felt conditions, you should see an improvement in the press section operation and an ROI in fabric savings, steam savings, increased production and reduced off-quality product.

Cleaner felts mean greater production and more savings.

Improve sheet quality. By mitigating profile problems, decreasing dirt in the sheet and minimizing crushing, breaks and holes, your program can help you significantly reduce rejects and improve yield.

Reduce steam consumption. Improved dewatering of the sheet means that some mills can redirect energy for other uses, including sending more power to the local utility.

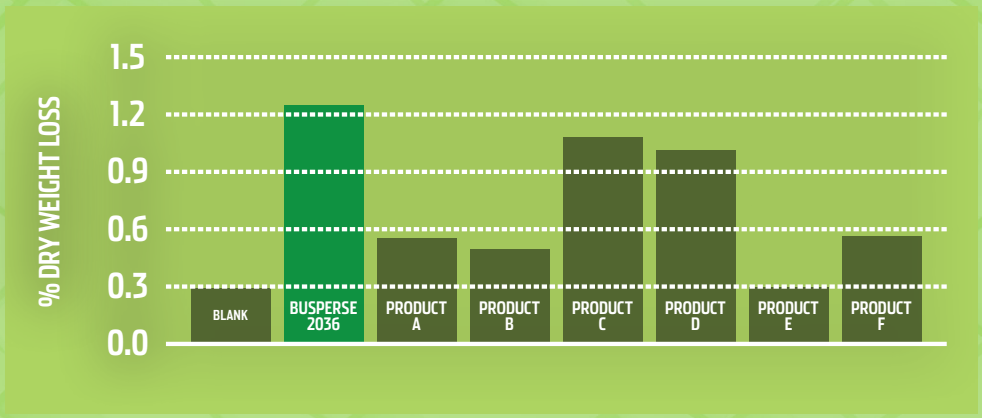
Increase machine speed. With a drier sheet, you will be able to run faster and increase production.

Improve runnability. Because felt life is increased, you can do routine maintenance on your schedule and minimize annual downtime.

Maintain a drier felt. A drier felt means a drier sheet and fewer Yankee coating problems for tissue makers.

Reduce expensive downtime. Replacing a shutdown batch cleaning program with a batch-on-the-fly or continuous cleaning program can result in significant savings.

Reduce breaks. Lower vacuums on the suction press roll can lead to fewer breaks and improved performance.



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CHAPTER 6

GET SUPERIOR FELT PERFORMANCE FROM THE WORLD LEADER IN DEPOSIT CONTROL.

Buckman offers Felt Cleaning and Conditioning programs that can improve your sheet quality and runnability. With Buckman, you get a trusted advisor that analyzes your problem and goals and delivers a solution just for you.

Our services include:

- Measuring not only the ash and organic extractables, but also the hard to identify gel-forming materials, including starch, xylans, lignin, cellulose, and other polymers that can fill a felt.
- Assessing the mechanical performance of your press to help you fine-tune your operation.
- Continuous felt conditioning for ongoing comprehensive contaminant control designed to keep felts operating at their designed capacity.
- Batch-on-the-fly alkaline and acid chemistries that can effectively clean your felts without shutting down.
- Low VOC, nonflammable solvents to clean your fabrics.

Buckman is ready to test your felt to help identify the right cleaning and conditioning products for your machine.

KEEP PRODUCTION AND ROI HIGH WITH BUCKMAN ADVANCED FELT CONDITIONING FOR TISSUE, PACKAGING AND GRAPHICS PAPER GRADES.

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CONCLUSION

SO, WHAT ARE YOU WAITING FOR?

Check out the three case studies below to see our products in action.

TISSUE	PACKAGING	GRAPHICS PAPER
The Challenge: A mill producing bleached towel desired better felt life and runnability than their existing shutdown and bleaching program provided. **The Solution:** Buckman applied a multi-active Busperse® cleaner program. Felt life was increased from 14 days to 24, which will save the mill 10 felts per year. As significant, there were 14% fewer breaks and a 14% reduction in other lost time. **The Return on Investment:** After cleaning program costs, the mill realized a yearly ROI of $575,000.	**The Challenge:** A mill producing corrugating medium desired better water removal and speed than their existing batch-on-the-fly acidic program provided. **The Solution:** Buckman applied a multi-active Busperse® cleaner program. Felt life was increased from 40 days to 50, saving the mill 2 felts per position per year. More significantly, production increased by 40 tons per day. **The Return on Investment:** After cleaning program costs, the mill realized a yearly ROI of $5,375,000.	**The Challenge:** A mill producing LWC grades wanted to increase production, improve quality and at the same time, reduce the cost of their felt conditioning program. **The Solution:** Buckman applied a multi-active Busperse® continuous cleaning felt conditioner along with a batch-on-the-fly cleaning program. Machine speed increased by 4% and runnability improved, resulting in a production increase of 6%. Holes per reel declined by 50% and program cost was reduced by 15%. **The Return on Investment:** After cleaning program costs, the mill realized a yearly ROI of $5,500,000.

To discover how Buckman's Advanced Felt Cleaning and Conditioning program can bring a higher level of efficiency and profitability to your mill, contact your Buckman representative or visit buckman.com.

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