

# Save Steam And Improve Productivity+quality Through Dryer Fabric Cleaning

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Changes in furnish characteristics (secondary fibres, recycling of coated broke, increased use of sheet fillers, increased use of white water etc.) and machine design cause continued contaminant build up and the subsequent need for cleaning of paper machine clothing -special in the dryer section.

A clean dryer fabric, with consistently high air permeability, delivers important productivity and performance advantages for dryer section applications. The desired end result of a clean dryer fabric is a substantial improvement in available dryer capacity.

Online cleaning devices available in market like ROSSJET consumes very little amount of water, compressed air and electrical energy. This innovative cleaning system is being applied successfully to very low basis weight product as well as for heavy weight paper board applications.

## INTRODUCTION

In India, most of the mills use the recycled fiber as furnish. Contaminations in the waste paper and in-efficient screening & cleaning system in stock preparation and approach flow passes the debris on to the paper machine clothing. Forming Fabrics and Press Felts get the attention of the paper maker and are normally cleaned and conditioned on regular basis but the dryer fabric is the most ignored area. It is seen that the cleaning and conditioning of dryer screens is directly related to the energy and we all know that the most expensive thing is the

energy-be it heat or steam or electricity.

Experience in the past have shown that the energy delivered from a stream of water is one of the most effective methods to keep machine clothing clean and permeable. Today the use of such a water jet with high pressure = high velocity and small amount of water provides the best way to clean but not destroy the fabrics.

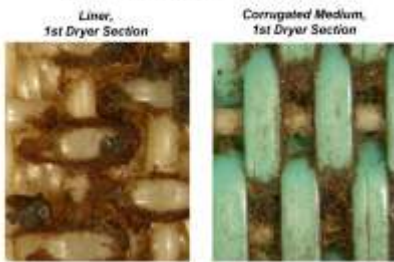
The water jet cleans the paper side of the dryer fabric directly on a leading or guiding roll, following advantages applies:

- Enables control and discharge of contamination
- Increased cleaning pressure to be used due more stability of fabric (350bar)
- "Open" fabric on paper side → easier release of contaminations
- Double cleaning effect due rebound of water jet at roll/fabric → supports the discharge into save all pan

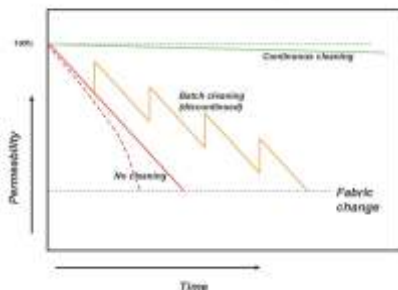
The fabric cleaning and discharge of contamination will take place continuously, during production by:

- Up to 6 fixed high pressure needle jet nozzles
- High velocity air knives using compressed air make sure the fabric is dry after cleaning
- To eliminate all contaminants, water, fibres, and fines, vacuum is created by two Venturi boosters. Compressed air creates a high vacuum level inside the cleaning head. This high level of vacuum pulls all the contaminants and water from the fabric to a save all leaving the fabric clean and dry.
- Cleaning Head for discharging water and contamination
- Save all over the total machine width to discharge water and contamination out of the machine.

### Is this your Problem?



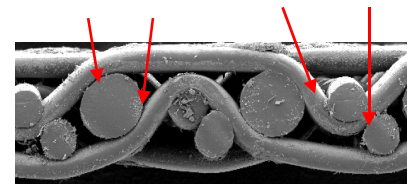
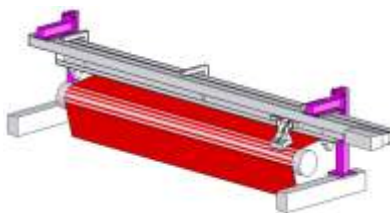
### Methods of cleaning for PMC



## Various cleaning modes

### Continuous cleaning

#### Cleaning Principle of Dryer Screens



### Batch cleaning mode:

During a sheet break or after a machine shutdown the batch cleaning mode will be switched on. This mode has eight nozzles with larger diameter to provide a "QUICK WASH UP" cleaning. The combination of continuous and discontinuous provides the most effective cleaning solution. Therefore during the Batch Cleaning mode, a total of 14 nozzles, (6 high pressure low

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## What do you get? (ROI)

1. **Increased lifetime** of fabrics
2. **Reduction** of steam
3. **Higher speed** possible due to improved drying
4. **Reduction** of breaks due to dirty fabrics
5. **NO downtime** for manual cleaning
6. **Reduction** of chemicals
7. **Elimination** of downgrades
8. **Better** CD profiles

## Cleaning results

LWC, After Dryer Section, coating dye contamination



## CD moisture profile / zone cleaning



## Cleaning results

Newsprint, 1st Dryer Section



Catalyst Paper, Canpbell River, BC, Canada

PM5 (NEWSPRINT, 8.8 meter wide, 1400m/min)



water volume and 8 low Pressure high water volume) are used to provide the most efficient cleaning solution.

## REFERENCES & RESULTS FROM LAB TESTS AND IN VARIOUS MILLS.

❖ TWO STATIONS ARE BEING SUPPLIED TO ABHISHEK INDUSTRIES, MUKTSAR (PUNJAB) FOR THEIR NEW PAPER MACHINE #2.

## CONCLUSION

Applying a cleaning device guarantees consistently clean dryer fabrics from beginning to end of usable dryer fabric life.

Advantages are:

- No chemical cleaning will be required to maintain fabric cleanliness.
- No shutdowns will be required for fabric cleaning. This will provide increased manufacturing

productivity and profitability.

- Maintaining consistently high dryer fabric air permeability increases available dryer capacity.
- Better CD moisture profiles will be maintained.
- Sheet curling, caused by uneven drying, will be eliminated.
- Dryer fabric life will be substantially improved.
- Much less contamination will be deposited on dryers, doctor blades, and felt rolls.