MICROSTAR®SYSTEM Next Generation Retention System with significantly improved efficiency



The major driver in Fine Paper production in modern times is maintaining and improving cost performance through:

- Reduction in Variable costs
- Improvements in runnability, productivity and machine efficiency

One way of achieving this is through the use of advanced retention and drainage programs such as MicroStar[®], which improves productivity and enables the use of higher filler levels.

After a period of research testing, the and MicroStar®System was officially launched at the start of

2010. This integrated solution for the Wet End consists of a three component system bringing together both organic micropolymers and inorganic microparticles allow retention and to drainage characteristics to be independently optimised. This provides more flexibility to produce

the effect the papermaker wants to achieve and offers benefits such as improved formation and sheet quality, printability and increased filler levels as well as a more stable Wet End operation.

The MicroStar®System has now been installed on a number of world class papermachines and has been confirmed as adding substantial value to our customers operations in terms of the overall cost performance.

At the end of 2012, a MicroStar[®] trial was carried out to investigate benefits which could be obtained against a competitive three component retention and

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drainage system. This involved replacing the three components with ACAT[®] products and optimizing the addition sequence.

ACAT[®] Products used were:

- RetStar[®] 201P Medium Cationic Polyacrylamide Powder
- MicroStar[®] 2400 Anionic Micropolymer Emulsion
- BentStar [®]S190 Modified High Whiteness Bentonite

The papermachine was a Voith Duoformer

- Production Rate 35t/hr
- Paper Grades 80gsm Copier, 60gsm and 70gsm Copier Grades
- Speed 1400m/min
- Ash Content 18% PCC
- ASA/Starch Size

The trial objectives were to reduce the overall retention and drainage costs without any impact on production output and quality. A longer term possibility is to increase filler levels through the use of improved filler retention mechanisms.

Trial Results, compared to the competitive three component system:

- RetStar[®] 201P addition Level across all grades showed a 34.1% reduction
- MicroStar[®] 2400 addi tion level across all grades was the same
- BentStar[®] S190 addition Level across all grades showed a 10.9% reduc tion.

The chemical dosage was controlled to the required backwater consistency for each grade produced.

The overall conclusion was that the combination of RetStar[®]201P, MicroStar[®] 2400L and BentStar[®] S190, together with optimization of the addition sequence increased retention and drainage on the paper machine and resulted in a substantial reduction in treatment costs.