

Eliminating edge deposits – BTG's customized solution cuts costs and boosts productivity

Deposit build-up on the Yankee cylinder can impair production efficiency, compromise quality, and increase the need for blade changes and Yankee regrinding. Developed through hands-on experience at leading mills, BTG's new customized service package eliminates the problem, for potential savings of up to €100,000 a year.

Contamination build-up on the edges of the Yankee outside the web is a common problem in tissue making, especially on crescent former machines.

The Yankee edges are problematic because they normally run with less coating compared with the web area, and because there is no web to provide a cooling effect that would help prevent the coating drying out. Because the surface temperature is often high and not adjustable, any material coming into direct contact with the edges tends to dry very quickly.

The edge area is also very challenging in terms of the profiling of the creping and cleaning doctors, especially on multi-grade machines with wide variations in Yankee pressure, speed, furnish and chemistry.

Unless properly controlled, edge deposits can cost manufacturers anything from €20,000 - €100,000 each year.



Figure 1: Typical white fiber/fines build-up



Figure 2: Very clean Yankee edge

Subsequent 'edge build-up' or 'edge deposit' can contain fibers, fines, fillers and other dissolved components (hemi-celluloses, wet strength agent and so on), along with coating chemicals. This contamination can be seen as whitish or white-brown 'belts' around the Yankee edges. Hard water is another possible source of edge deposit.

Sometimes poorly constructed and operated edge sprays using either unsuitable chemicals or excessive levels of chemicals can also lead to chemical build-up under (and on) the creping blade, which has the effect of physically lifting the blade up. What's more, it's clear that the problem of edge deposits cannot be totally controlled by using the cleaning doctor only.

The problem is sometimes further exacerbated by the use of long-life blades, simply because they're changed much less frequently than steel blades. During the long lifetime of a high-tech blade, edge deposits tend to get progressively thicker and harder, increasing the risk of 'cracks' in the paper edges. Deposits can lift the creping blade up from the cylinder surface or cause excessive local blade wear, causing edge cracks and web breaks even though the rest of the blade is still performing well.

Edge deposits can also cause vibrations of the creping and cleaning blades at the Yankee edges. Such vibrations can lead to chatter marks, which often start to form in the deposit rings and then successively spread – sometimes across the full width of the Yankee dryer.

All these problems have a significant cost impact for tissue makers, through downtime and increased broke, the potential need for more frequent Yankee polishing or grinding, and shorter blade lifetimes. Unless properly controlled, edge deposits can cost manufacturers anything from €20,000 to €100,000 each year.

To remedy the situation before it begins to impact product quality – and the bottom line – BTG now offers its tissue-making clients a customized solution design service through a new consultancy package dedicated to raising your productivity. Developed and proven in hands-on projects at leading mills, the package promises:

- Improved blade performance
- Fewer paper edge cracks and breaks
- Reduced risk of chatter marks
- Longer intervals between Yankee grindings, thanks to more even wear
- Improved Yankee safety
- Higher machine efficiency

Examples of proven savings

- Blade lifetime increase from 20 hours to 24 hours – four blades saved per month
- One break in four saved per shift, for a total saving of 22 tons per month