

A perfectly matched team: MultiFoil rotor and C-bar screen basket

## Quality improvement with lower energy consumption

**Save energy wherever possible: a goal high on the priority list of many paper makers. Utilizing the right combination of rotor and screen basket in the screening machine can save up to 30% on energy costs. The MultiFoil rotor and C-bar screen basket from Voith Paper have proven themselves to be an especially successful duo. Moreover, a newly developed narrow bar basket allows for further improvements in quality.**



*A perfectly matched team: MultiFoil rotor and C-bar screen basket.*

*20% larger open screen area through narrower bars with the new C-bar Q.*

As early as 2002, the MultiFoil rotor and C-bar screen basket were installed in several pressurized screens at the Thai Kraft Paper factory. Since then, the Thai paper maker is saving nearly 7 million kWh of electric power each year, emitting 9,143 fewer tons CO<sub>2</sub> and reducing the overall fiber loss in the approach flow system from 0.4 to 0.1% when compared to the old screening equipment. It was also possible to considerably reduce the residual sticky content following the screening system. The electricity saving corresponds to the yearly per

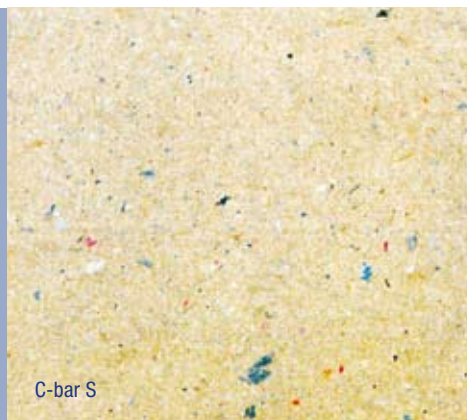
capita consumption of about 4.000 people in Thailand.

The secret to success is the optimized screening mechanism of the two components. The foils allow the MultiFoil rotor to generate adjusted pressure and suction pulses, which thus provide for constant flow properties. Pulsations like those that frequently occur with other types of rotors are kept to a minimum. This significantly reduces power consumption. Thanks to the precise apertures and the special profile design, the

C-bar screen baskets noticeably improve the screening efficiency and product quality. The reduction rate of sticky content increases and the overall fiber loss drops.

### Successful retrofitting of third-party equipment

Voith machines have been adapted for a long time to the high performance requirements of screening systems in paper mills. Since 2000, over 200 non-Voith screens have also been retrofitted with the C-bar tech-



*Converted TLA 450 with MultiFoil rotor and C-bar screen basket.*

*C-bar Q quality advantage: noticeably fewer impurities in the product (sample sheets taken from the second stage of OCC long fiber screening).*

nology and MultiFoil rotor from Voith Paper. These include, among others, the facilities of Chinese paper maker Nine Dragons and Smurfit Kappa based in the city of Zülpich in Germany. Prior to the conversion, Nine Dragons often had to deal with fiber spinning on the rotor and the screen basket. The problem was solved by equipping the pressurized screen with a C-bar screen basket and MultiFoil rotor. Throughput was also increased from 950 to 1.000 m<sup>3</sup> per hour while power consumption was reduced by 30%.

At the Smurfit Kappa mill in Zülpich, there were troubles with fiber spinning on the PM 6, which was remedied by retrofitting the approach flow screen. At the same time, throughput was increased by 10% without any change to the total power consumption. Installing a MultiFoil rotor and C-bar screen basket in the PM 4 in Zülpich also resulted in a production increase. The old screening equipment had run up against a throughput limit, meaning that it was

impossible to increase output. After converting to MultiFoil and C-bar technology, the screen worked outstandingly — even at 20% higher throughput.

#### **Even better screening results**

The various products of the C-bar series are distinguished from each other by the width of their vertically arranged bars. The more narrow the bar width, the more open screening area is available. In 2007 Voith Paper launched a new narrow bar screen basket design, the C-bar Q, offering 20% more open screening area than the standard bar screen basket.

Comparisons made at the Spanish cardboard maker U.I.P.S.A. (Union Industrial Paperlera S.A.) using the new C-bar Q and the standard screen basket C-bar S showed that for the same aperture width it was possible to increase the removal rate of stickies with the C-bar Q by 12%. The reason is a reduction of the slot passing velocity because the same mass of

pulp is distributed across a larger available open screening area. The screening efficiency increases and contains noticeably less foreign substances in the screened stock. If the slot passing velocity is kept constant, the production quantity of the screen can be increased alternatively without compromising the screening quality. As a result, the use of the C-bar Q either improves the screening efficiency or increases production and without any compromise on quality. The Spanish customer of Voith Paper was so convinced by the C-bar Q results that he immediately ordered the same type screen baskets for additional screens.

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