

Fig. 1: Space can be saved with the 1x2 Delta and the 1x2 V-framing of the EcoSoft calender.

Tapping potential for improvement on calenders

Satinage made to measure

Good printability, optimal running characteristics and outstanding visual characteristics are the essential requirements for modern paper. Today, many calenders are no longer up to these requirements without undergoing some modernization. Two current cases show how calender rebuilds are planned exactly according to the needs of the respective customer.

Case 1: Palm paper mill, Eltmann plant

Standard newsprint (coldset offset) was for a long time the successful focus of the PM 1 in Eltmann. To ensure competitiveness, it ought to be possible in the future to produce an additional grade, newsprint for heatset offset.

Experiments at the Paper Technology Center in Krefeld

As preliminary steps, extensive experiments were carried out with

the customer's paper at Voith Paper's Paper Technology Center in Krefeld (Fig. 2).

As a result, the Voith satinage specialists recommended a configuration of the EcoSoft calender with 2x2 rolls. To be sure, this solution did not require an additional steam moistening unit – however, difficult conditions resulted due to the additional space requirement. In the end, a 2x2 solution had to be fitted in place of the smaller, old 1x2 roll calender.

Making best possible use of little space

The solution was optimal utilization of the existing space through a combination of a 1x2 Delta and a 1x2 V-framing (Fig. 1). In addition to this, the reel spool was moved 2.5 m in the direction of the winder. With simultaneous adaptation of the pulper under the reel, the space needed for implementation was provided. The EcoSoft calender was equipped with water-heated FlexiTherm rolls and deflection compensation rolls of the Nipcorect FX type. Well-preserved

components of the old calender system were integrated into the new calender concept. The other components were newly designed and manufactured.

Successful course of the project

The calender was completely preassembled, put into operation and tested before being transported to the installation site. Already five weeks before the planned downtime of the PM, the first system units were assembled parallel to production. As much as possible, they were piped, electrically connected and preliminarily put into operation. In addition, to support the site supervision and to ensure that there was no delay, 24-hour stand-by on call service of all departments was set up. The PM 1 went back into production after only 8 days of downtime. All deadlines were met; the PM started up promptly and produced the first reel spool with marketable paper on the afternoon of the same day.

An impressive result

All goals were achieved with regard to paper technology as well. The system now produces newsprint for coldset



Fig. 2: Combination test facility at the Paper Technology Center in Krefeld.

offset and, alternatively, newsprint for heatset offset. Use of the deflection compensation roll subdivided into 32 zones allows a CD caliper profile of 2 Sigma < 0.7.

Case 2: Kübler & Niethammer, paper mill Kriebstein AG

This case as well shows how an individual customized calender rebuild can noticeably increase one's competitiveness. Since the LWC papers of the PM 1 based on recovered paper was an outstanding sales engine for Kübler & Niethammer, the management decided to further strengthen this grade segment. A decisive factor was the further increase in the quality or gloss level. For this purpose, the coat color formulation was changed in a first step. The

measures introduced did show improvements, but were not sufficient to lift the gloss level from 35-40% according to Gardner to the desired 46%. Voith was commissioned with investigation of the possible solutions.

Preliminary investigations confirm the assumptions

It quickly became clear that the existing calender was not up to the higher requirements and that in the end only a fundamentally new calender concept could do justice to the new tasks. Experiments at the Paper Technology Center in Krefeld confirmed this judgment. An important secondary condition in the implementation of the project was to continue using as many parts of the existing calender as possible. Within the



"Our trust in Voith was warranted."

Helmut Liesen, Operations Manager PM 1, Palm, Eitmann

"Our requirement of being able to produce newsprint for coldset and heatset with our calender was high. Our trust in Voith was warranted. The qualities we require can now be easily produced by the rebuild calender."

framework of a detailed analysis of the system, considerable optimization potentials were discovered in the threading process of the calender. After consultation and discussion of the possibilities, the customer decided to make use of these potentials and expanded the project accordingly.

A completely new concept

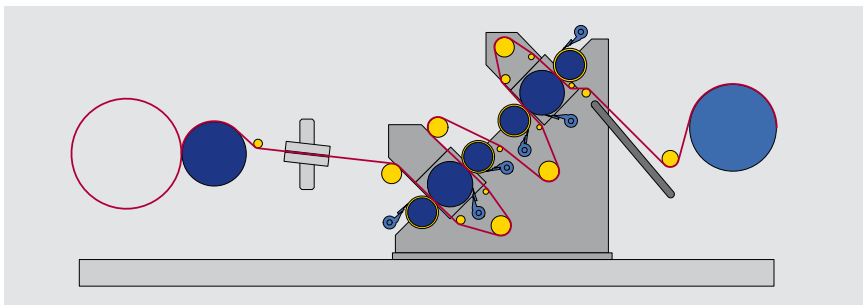
The new calender concept envisioned a modern 2x3 roll Janus MK2 calender. Existing deflection compensation rolls, FlexiTherm rolls and the main drive of the existing calender were integrated. Even parts from previous rebuilds such as oil heating, edge trimming and bearing lubrication can be found in the new concept (Fig. 3).

On target in eight days

The specified deadline of eight days for assembly and commissioning of the calender and the threading system could not be exceeded. Complete preassembly and – as far as possible – functional tests of all new parts assured an orderly course of events.

The rebuild of the existing calender and the installation of the threading system took place with high precision. All projected completion dates were kept. Already seven hours after start-up, the first reel spool was produced on the PM and the second reel spool proved to be marketable.

Fig. 3: Rebuild concept for the Janus calender.



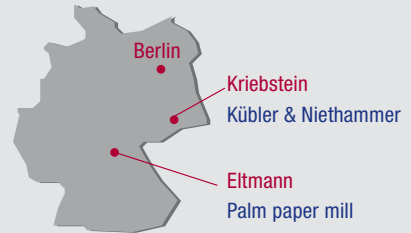
“In Voith, we see a strong and reliable partner.”

Klaus Ziege-Bollinger, Chairman of the Executive Board, Kübler & Niethammer

“We are very satisfied with the rebuild that was carried out. Our expectations have been met without exception. We felt relatively secure and well-advised during the project phase. The measurable results now confirm this feeling. The gloss level of the paper produced was raised to exactly 46%. Downtimes due to paper breaks were substantially reduced by means of optimizations of the threading system. In Voith, we see a strong and reliable partner on whose competence we will certainly rely in future cases.”

Locations

Germany



Kriebstein: The township of Kriebstein, with approximately 2,500 residents, is in the district of Mittelsachsen. The medieval castle and the Kriebstein dam attract thousands of visitors annually to this area.

Eltmann: The city has around 3,400 residents and is in Bavaria’s district of Lower Franconia. The township in the Main valley is regarded as the northern entrance gate to the Steigerwald Nature Reserve.

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