

Press Felt Design and Application Criteria For Groundwood Grades

Design

The most critical area in getting the right press felt designs on paper machines is to properly address the issues. The issues are:

- Issues relating to the press type
- Issues relating to the press configuration
- Issues relating to the paper grade
- Issues relating to the end user

By understanding the effects of the press felts on all of these specific issues, the correct selection of a press felt design will maximize press performance.

The major issues in the selection process for press felt designs for groundwood grades is to understand how water is leaving the sheet and how the press is affecting the ultimate sheet properties. Since groundwood sheets are generally low in unit weight, relatively little water needs to be removed from the sheet. Therefore, the press nip must achieve nip saturation in order to get water transfer. Nip saturation occurs when the sheet and the felt are compressed to such a level that any additional pressure added in the nip causes water to flow from the sheet to the felt to the presses open area. The first press nip the sheet sees is the nip that requires the felt with the most water handling capabilities. These higher water handling positions must be felted with sufficient mid nip void volume to accept the high water flow of the relatively wet sheet (14-23%) while always saturating the sheet. The felt must also be able to maintain its parameters such that the water flow in the nip does not change as the felt ages.

As the sheet travels to the later presses, less and less water is located in the sheet making it more and more difficult to remove the water from the sheet. As the sheet sees these later presses, the proper combination of resistance to load and nip saturation must be offered.

Laminated Press Felts

Weavexx along with our sister company Huyck in Europe have been the pioneers in what is known today as laminated press felts. The lamination process is the combination of various woven structures to form the finished press felt. In order to meet the very complex issues for groundwood pressing, laminated press felts offer the best solution. They allow felts to instantly saturate the press nip while maintaining their operating characteristics. Designs like the PROFILER and the STRATATRI utilize the lamination process for addressing the issues of the higher

water load pickup positions. Weavexx has earned a 32% share of the laminated press felt market in North America.

Press Felt Design and Application Criteria (continued)

This includes a 49% share of the laminated market for newsprint and coated groundwood grades.

Designs like the CAPILLARIS, and ABSORBER utilize the lamination process to minimize press vibration and maximum sheet dryness by minimizing rewetting. These designs are targeted to the later press positions where nip dewatering is a design criterion.

Pin Seam

Over the last few years, Weavexx has developed its unique SEAMEXX EXTENDER. In addition to the rapid installation, the SEAMEXX EXTENDER offers superior runnability. Once again, by properly evaluating the critical issues for the groundwood market, Weavexx has adapted a pin seam that works on maximizing pressing efficiency without compromising strength and ease of installation.