

3- UNDERSTANDING THE PROCESS

THE OBJECTIVE of a steam shower application at the wet end of the paper machine is to transfer energy into the sheet. This energy results in sheet temperature increase which enhances the water removal from the paper sheet.

Steam is currently the most effective energy source. One kg of steam condensed (in the paper sheet) releases its latent heat of 539 kcal. Due to the high efficiency of the KANENG-DELTEC BI-FLO steam shower, almost all of this available energy is utilised to heat the paper sheet.

Increased productivity due to increased sheet temperature results in the following benefits in the paper making process:

- ☐ **Increased sheet drainage** due to lowered viscosity.
- ☐ **Decrease in re-wetting** through sheet/felt contact after the press nips due to reduction of surface tension.
- ☐ **Reduced dryer section loads** due to:
 - a) Increase in sheet entering dryness
 - b) Increase in sheet entering temperature.
- ☐ **Fewer sheet breaks** in press section due to dryer, stronger sheet.

Cross direction (C.D.) moisture profile control is made possible by selective steam application across the sheet width.

- ☐ **Reduced fibre/tonne of shipped paper** due to higher average C.D. moistures.
- ☐ **Reduced rejects** associated with poor C.D. moistures.
- ☐ **More even size and/or coating pick-up.**
- ☐ **Additional drying capacity** in the main dryer section of sized grades due to higher moisture levels into the size press.