

## Flow study – sheet distance variation

Setting the optimum distance between the sheet and the steambox is very critical for performance and efficiency. If the steam box is too far away from the sheet, most of the steam will evaporate into the environment and will not condense on the sheet. This leads to excessive steam plumes around the steam box, the end of the fourdrinier, and at the start of the press section. This steam will condense on the cold steel structures of the press section, the former framing, and the roof, eventually causing corrosion. In addition, it will start to “rain down” onto the paper machine creating water marks on the sheet.

If the steam box is too close to the sheet, the resulting build-up of fibres will negatively impact the performance of the steam box and can lead to sheet breaks.

Transphase has done some analysis to determine to optimal distance from the steam box to the sheet. The results show the ideal distance between the sheet and the steambox is a range between 0,5 and 0.75”. The graphic below shows the temperature footprint of the steambox at different distances to the sheet. Red areas are high temperatures (deep red = 200°F), blue areas are cold temperatures (blue= 135°F).

