

Advantages of Shoe Presses V/s. Roll Presses

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Press is the last point in the paper machine where water is removed by means of mechanical load/energy. Basic of the press is passing the paper through 2 solid rolls. Gradually the modifications were done just by increasing the load using different type & size of press rolls. After reaching a limit in the loading, scientists started to experiment with bigger diameter rolls in order to increase the nip width. They are called long nip or wide nip presses. Other methods using suction rolls and blind-drilled rolls also very common but as it is economical to remove water by mechanical loading than by vacuum, scientists did not stop at long nip. The ultimate aim was to squeeze out maximum amount of water from the paper. At one stage, situation reached when it was not possible to increase the load because the paper properties started to deteriorate. This was the time when machine designers were forced to re-evaluate how presses are designed, the birth of the new technology called SHOE PRESS.

A Shoe Press (Above figure) is essentially a deflection roll with a flexible shell and a concave loading shoe. The flexible shell is a thin polyurethane membrane, called blanket. This blanket forms a circular loop, much like a roll cover, unit it passes through the nip. Here it is forced to bend in the opposite direction between the loading shoe and the mating roll.