

Multi-Compartment Suction Boxes

Hi-Vacuum Dewatering

Applications

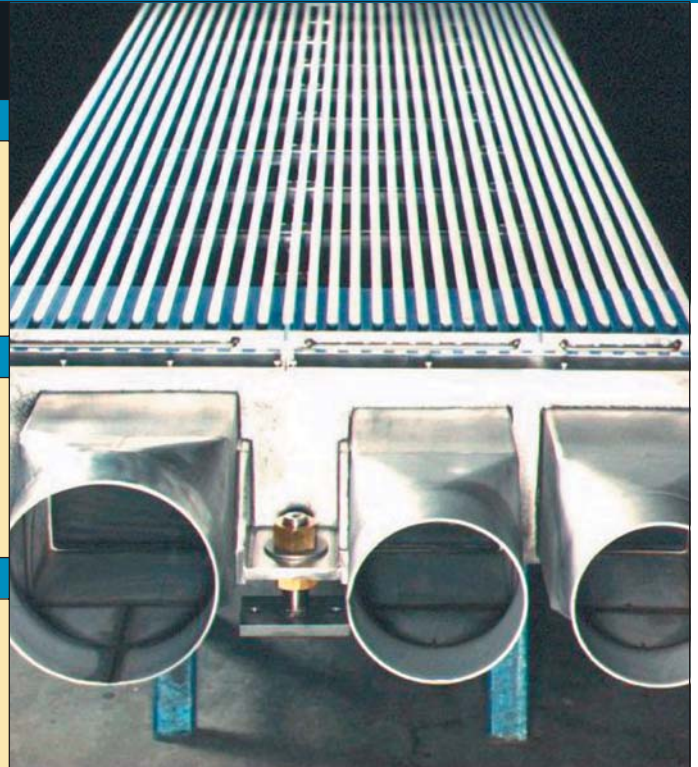
Forming fabric design and the high vacuum system determine the sheet dryness delivered to the couch roll. Kadant AES will optimize the number of high vacuum compartments, number and width of slots, and recommend vacuum levels to minimize drag load and maximize dewatering.

Features

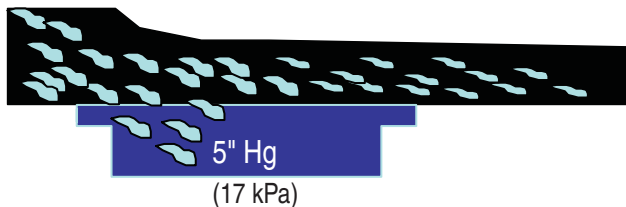
- ▶ Optimum open area based on hi-vacuum modeling
- ▶ Rugged design with 316 stainless steel construction
- ▶ Multiple ceramic wear surfaces available
- ▶ Efficient use of available machine space

Benefits

- ▶ Minimize drag load by graduating vacuum
- ▶ Increased sheet dryness to the couch roll
- ▶ Optimize available CFM and vacuum
- ▶ Reduced energy usage

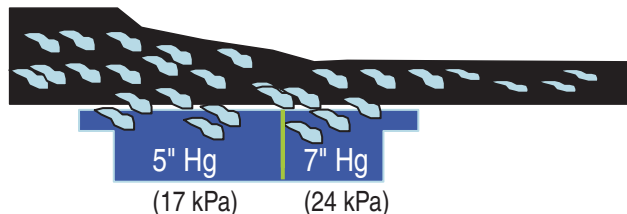


Twenty years ago Suction Boxes were designed on the basis of the structural requirements for spanning the paper machine. Wider machines meant wider boxes; even if the extra cover width did little or nothing to improve water removal. The concept of multi-compartment boxes (pioneered by Kadant AES) led to the study of what the optimum dwell time would be at each vacuum level. Pilot machine trials (since confirmed by real world experience) provided Kadant AES with the paper grade and basis weight dependent formula required to optimize water removal while minimizing energy consumption.



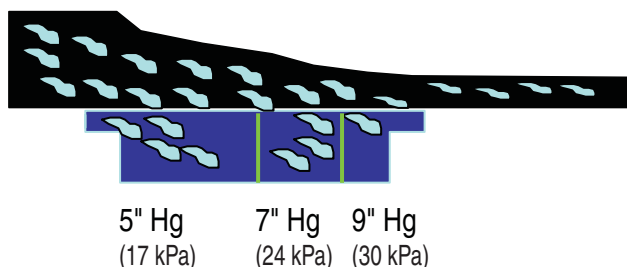
Single Compartment Suction Boxes

Long exposure to a single level of vacuum wastes energy giving no value in return for drag load and air flow applied.



Dual Compartment Suction Boxes

As vacuum levels increase, optimum dwell time decreases.

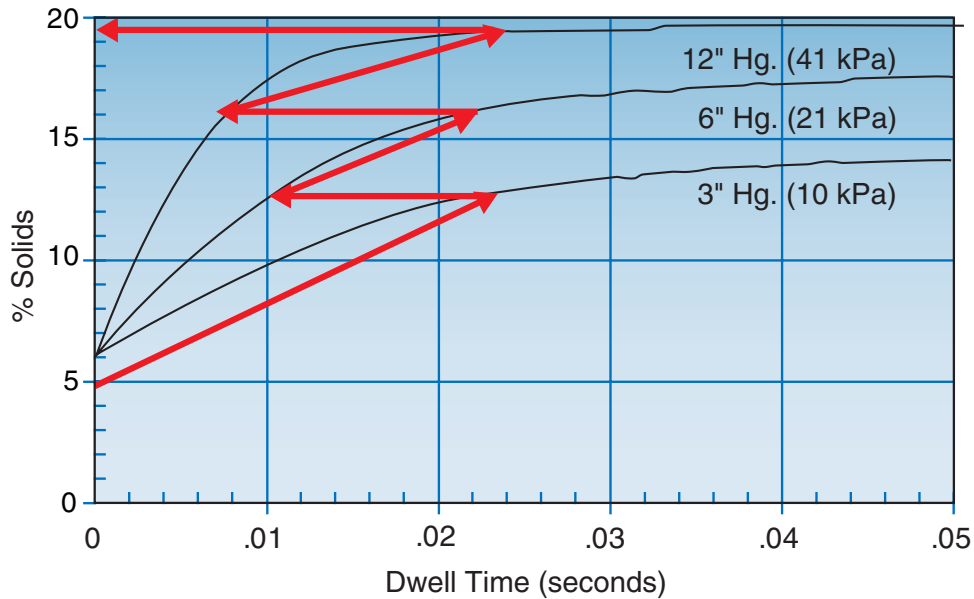


Triple Compartment Suction Boxes

High vacuum compartments need only a few slots to perform their job, thereby minimizing both drag load and air flow while maximizing dryness.

MULTI-COMPARTMENT SUCTION BOXES

Optimization Graph (grade and basis weight dependent)



High technology, high performance ceramics from Kadant

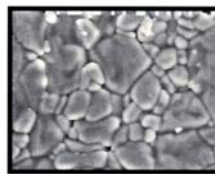
Ultrawear AL™

Aluminum Oxide

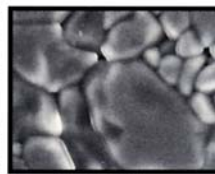
Advantages: Low cost; good wear and corrosion resistance; moderate machine drag.

Disadvantages: Low thermal shock resistance can cause high fabric wear.

Applications: Fourdrinier, except on flatboxes when calcium carbonate is used.



Magnified x500



Magnified x1,000

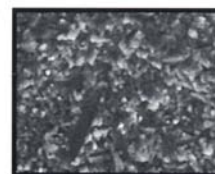
Ultrawear SN™

Silicon Nitride (SN)

Advantages: High thermal shock resistance; low fabric wear, low drive load; best all-around combination of wear, chip, and corrosion resistance.

Disadvantages: Cost

Applications: High stress applications, like suction boxes and felt strips; all applications where calcium carbonate is used.



Magnified x500



Magnified x2,000

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Contact us:

KADANT AES DIVISION
436 Quaker Road
Queensbury, NY 12804 USA

Tel: +1-518-793-8801
Fax: +1-518-793-9392