

Super Steam Vac Results

Linerboard

The Super Steam Vac is the combination of IBS' expertise in super high vacuum applications integrated with Transphase's patented steambox technology for advanced Fourdrinier dewatering. IBS-PPG has installed a couple of Super Steam Vac systems on Fourdrinier machines producing Liner and Medium grades – OCC and virgin.

The SSV consisted of a dual or triple chamber Super High Vac flat suction box equipped with an IBS– Si-Nitride cover. The open area of the cover can be adjusted to allow fine tuning of the airflow through the cover. The Transphase Z-Box steam box uses its patented design to provide uniform low velocity steam to ensure no sheet disturbance and minimum steam spillage. To guarantee easy cleaning, the Z-Box profiler features our innovative swivel retraction which pivots the box up to 60°. In addition, IBS supplies the interface cabinet to control the steam actuators. It features Festo CPX modules which can detect any air leakage or non-movement of the industry-leading CR2 profiling actuators.



SSV in operation without any visible steam spillage

Installation A

Machine configuration:

- Furnish: 100% OCC
- Freeness: 41 to 35°SR - 280 to 350CSF
- Base weight: 112 to 220gsm – 23 to 45 #/1000ft²
- Sheet width: 5300mm - 209inches
- Speed: 762mpm - 2500fpm
- Vacuum configuration: Quadvac @ 40.6/54/67/79.5 kPa
- 12/16/20/23.5 inHg

Results:

- Decreased couch vacuum from 74.5 to 44 kPa - 22 to 13 inHg.
- Increased pre couch solids up to 7%
- Increased solids off couch up to 5%
- Post-couch temperature increased from 55 to 72°C - 132 to 163°F.
- Up to 4% less dryer steam consumption on liner grades.
- Up to 6% less dryer steam consumption on medium grades.
- Significantly reduced couch drive limitation.

Installation B

Machine configuration:

- Furnish: 100% OCC
- Freeness: 35 to 28°SR – 350 to 450CSF
- Base weight: 88 to 195gsm – 18 to 40 #/1000ft²
- Sheet width: 4300mm - 169inches
- Speed: 762mpm - 2500fpm
- Vacuum configuration: Trivac @ 27/47.5/64.3 kPa – 8/14/19 inHg

Results:

- Shut off couch vacuum from 20inHg to 0inHg
- Lump breaker removed
- 12% speed increase
- 65% 2Sigma CD moisture reduction
- 3 felt heaters in press shut off

Installation C

Machine configuration:

- Furnish: 70-80% SWD, 10-20% HWD, 10% Broke
- Freeness: 25 to 18°SR – 500 to 650CSF
- Base weight: 122 to 229gsm – 25 to 47 #/1000ft²
- Sheet width: 6401mm – 252inches
- Speed: 884mpm - 2900fpm
- Vacuum configuration: Trivac @ 47/60.8/74.5 kPa – 13.9/18/22 inHg

Results:

- Increased pre couch solids up to 4.3%
- Increased sheet temperature into the press from 54.4 to 90.5°C - 130 to 195°F
- Couch vacuum reduced from 18,000 to 12,000 CFM - 33%
- 50% 2Sigma CD moisture reduction

Installation D

Machine configuration:

- Furnish: 70-80% SWD, 10-20% HWD, 10% Broke
- Freeness: 25 to 18°SR – 500 to 650CSF
- Base weight: 200 to 415gsm – 41 to 84 #/1000ft²
- Sheet width: 6096mm – 240inches
- Speed: 610mpm - 2000fpm

Results:

- Increased sheet temperature (bottom side) after couch from 51 to 61°C - 125 to 142°F
- Increased pre couch solids up to 8,7%
- 46% 2Sigma CD moisture reduction
- No steam spillage

