

ISO-BAR GLUE MACHINE



- Innovative rod metering - First new concept in 50 years.
- Accurately meters glue film thickness down to 0.025mm (0.001”).
- Runs any solids and viscosity - high or low.
- Viscosity can be adjusted to maximize board properties, not to prevent slinging.
- Glue weight adjustment by varying the speed of a motor, not the gap between two rolls.



CSI KOHLER COATING

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FIRST NEW CONCEPT IN 50 YEARS

Smooth Glue Roll
Contact Roll
Contact Point
Thin Glue Film Does Not Vary While Running
Active Metering Rod
Reserve Metering Rod Switches Over in Seconds

WE DO WHAT THEY CAN'T
Rod Groove Size Sets The Glue Film Thickness On The Glue Roll

Transferred Glue Film Thickness is FAR LESS than that of a Conventional Glue Machine

Our Patented Design Allows Us To Change Glue Weight By Simply Changing Glue Roll Speed. The Glue Roll Runs 25%-95% Of Flute Speed. Other Systems Must Make Tiny Changes in Roll Gap And Are Far Less Accurate.



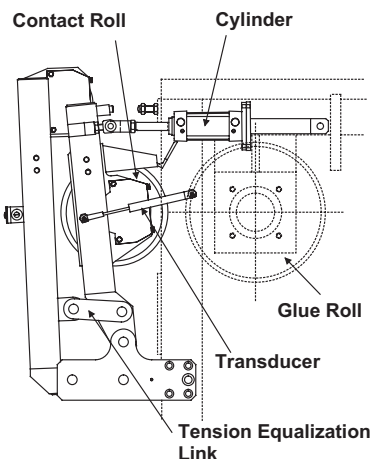
Shown With Mechanical Gap Control System

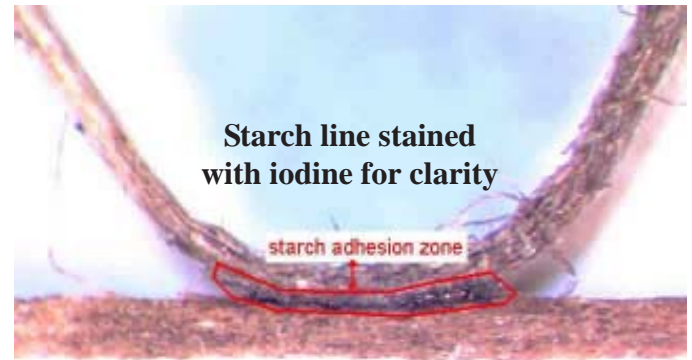


120" Triple Stack for Solid Fiber Lamination

KOHLER PRESSURE GAP CONTROL SYSTEM

- As simple to operate as a contact bar.
- Always has the right pressure for the flute size running.
- Automatically adjusts for flute change and web width.
- Fewer flutes in contact than any other system.
- Maintains constant pressure on flutes if web width changes.
- Patent Pending.





GRADE: 35-26m-35 C-Flute

**BEFORE ISO-BAR
INSTALLATION**

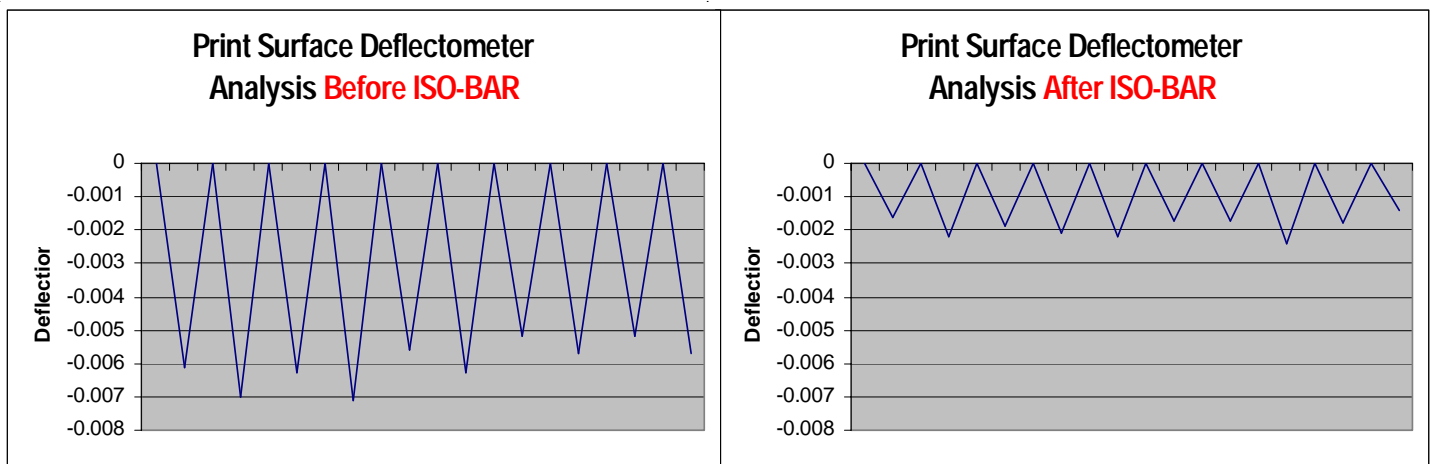


GRADE: 35-26m-35 C-Flute

**AFTER ISO-BAR
INSTALLATION**



The above photos show the difference between the glue line with a convention glue machine and the ISO-BAR glue machine. Note that with the ISO-BAR glue machine the glue line is only on the flute tip, without any glue on the flanks of the flute. The glue line width is completely controllable.



AVERAGE:	-0.006020	INCHES
STD:	0.000668	INCHES
AVERAGE:	-0.152908	MM
STD:	0.016967	MM

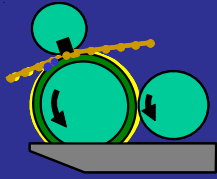
Scale is in
thousandths of an
inch (0.001" =
0.025mm)

AVERAGE:	-0.001900	INCHES
STD:	0.000316	INCHES
AVERAGE:	-0.0483	MM
STD:	0.0080	MM

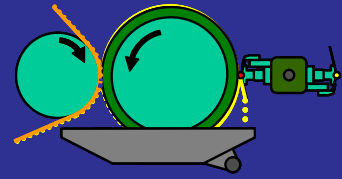
The above graphs show the improvement in surface smoothness provided by the ISO-BAR glue machine. The graph shows that in this case surface deflection (wash boarding) was reduced to less than 1/3 of the previous deflection with the old glue machine. This enabled the customer to downgrade liner basis weight from 42 LB (205 GSM) to as low as 31LB (150GSM) on ECT grades without effecting print quality.

Contact CSI Kohler Coating for more Information
www.kohlercoating.com

Conventional VS ISO-BAR Comparison



SENARIO - Solids - 30%
Line speed 350 MPM (1150 FPM)
Viscosity 30 Seconds - Stein Hall



Assume that you have the world's most perfect conventional glue machine.

It is capable of running a gap of 0.06mm (0.0025in). It's cell depth is only 0.05mm (0.002 in).

It's rolls and bearings have infinite stiffness, with no measurable deflection or run out. Film thickness exposed to the flute tip is $0.06 + 0.05 = 0.11\text{mm}$ (0.0045 in).

A.) Nothing.
You have no other means to further reduce film thickness.

B.) Buy an ISO-BAR.

Assume that you have a standard ISO-BAR glue machine running a #40 rod. Film thickness exposed to the flute tip = 0.10mm (0.004 in).

You need to reduce applied weight by 50% to run a new adhesive cost effectively.

What do you do?

A.) Change rods, swap in a #20 rod which applies a 0.05mm (0.002 in) film to the roll and dial in the new glue weight in 2 to 3 minutes.

WITH THE ISO-BAR GLUE MACHINE

Improved Quality

- Improve ECT scores by up to 10%
- Reduce washboarding by a factor of 3
- Increase flat crush up to 15%
- Increase caliper by .002 - .004 inches (.05 - .10mm)
- Maintain glue line consistency of +/- 1.5%

Improved Production

- Reduce water in board up to 40%
- Decrease energy consumed more than 30%
- Reduce starch consumed up to 30%
- Improve speed on heat-restricted grades
- Eliminate film thickness variations due to speed changes

Provide Ease of Operation for the Operator

- Provide the operator with more control of adhesive application
- Eliminate starch slinging
- Reduce clean up time