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Troubleshooting a glue lap problem

Scope

The following is a step by step method for analyzing and correcting a glue lap problem. All of the steps in Table 1 will be carried out in the plant; the laboratory procedures in Table 2 can be conducted by either internal or external technical services.

Safety precautions

There are no safety precautions.

Contents

Table 1. Physical state of glue lap bond.

Observation	Cause	Corrective Action
(A) Glue dried on one surface before making contact with other surface	Machine stoppage; defective boxes not removed	Ensure that all boxes in folding section are removed; check boxes
(B) Narrow glue lap and/or narrow glue line	Attempt to run short sheets, or attempt to reduce glue usage	Make sure sheets are correct length; use correct number of openings in glue head. Check glue line pressure.
(C) Scrap in glue line causing poor contact of surfaces	"Hang-ups" of slotter head scrap	Check slotter head, knife blade and anvil ; check scrap removal system.
(D) No glue, short glue line	Stoppage in glue feed, extruder not "firing" at correct time	Check glue application system, supply lines, and activation switches.
(E) Glue dried on both surfaces; little or no fiber pull	Insufficient pressure time, or open time of glue too long	Check pressure time; if necessary, reduce open time of glue
(F) Top surface of inner or outer liner peels off when glue lap is peeled apart	A number of potential causes exist	See Table 2 for steps be followed in determining corrective action

Table 2. Laboratory procedure to isolate cause of F (Table 1).

<i>Test</i>	<i>Observation</i>	<i>Action</i>
Evaluate force necessary to separate glue lap	Test result meets predetermined level	Report that glue strength is adequate
	Test result falls below predetermined level	Proceed to check internal bond of linerboard that fails
Evaluate internal bond strength of linerboard that fails in F of Table 1	Internal bond strength of linerboard is below specified level	Glue lap problem is due to linerboard defect; contact mill
(Suggest UM 808 as a suitable means of measuring internal bond strength of a combined linerboard)	Internal bond strength of linerboard exceeds specified level	Glue lap problem is due to glue and/or machine; proceed as in Table 3

Table 3. Procedure to isolate specific cause of glue lap failure when glue and/or machine is suspected.

<i>Observation</i>	<i>Corrective Action</i>
Distortion of box in squaring section	Back off squaring kicker to point where it squares box without distortion
Box subjected to more than six impacts by squaring kicker	Modify depth of squaring kicker
Counter-ejector distorting boxes, or subjecting them to severe stress	Modify counter ejector
No apparent problems with squaring section or counter ejector	Change glue to one with a longer open time, but watch for E in Table 1

Keywords

Internal bond strength, Open time, Glued joints, Box machines, Gluers, Joints, Maintenance, Troubleshooting

Additional information

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