



# LinerCoat®

THINK OUTSIDE THE BOX...

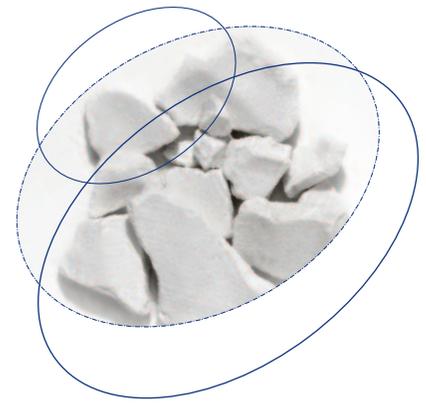
- Replacement of expensive fiber
- Increased machine speeds
- Improve surface smoothness and printability

Delivering Imerys Kaolin performance solutions



**IMERYS**

# SIZE PRESS CONCEPT FOR LINERBOARD - REPLACE FIBER AND INCREASE SPEED



Linerboard producers in China are facing increased competition for fiber sources, which has resulted in higher raw material costs. Demand is strong for both recycled and virgin fiber, leaving linerboard producers with lower profit margins and a limited ability to increase productivity. The use of mineral filler could supplement the mill's raw material supply and help alleviate some of these market pressures.

The use of LinerCoat® can allow linerboard producers to add 2-4% mineral in their size press with the following benefits:

- Cost savings from fiber replacement
- Increased production rate if your paper machine is dryer or fiber limited
- Reduced drying energy demands
- Improved surface smoothness and printability, especially important on white top liner grades

The most significant of these potential benefits is fiber replacement where high quality fiber availability in China is limited and fiber costs have increased dramatically. All of this can be done while maintaining sheet strength properties.

## MILL TRIAL RESULTS

	Pre-Trial	Trial
Starch (gsm)	5.1	4.7
Kaolin (gsm)	0	2.2
<b>Total Coating (gsm)</b>	<b>5.1</b>	<b>6.9</b>
Final Basis weight (gsm)	99	
Steam Demand (t/h)	73	<b>70</b>
Final sheet moisture (%)	5.3	<b>4.8</b>
Burst Strength (kpa)	262	247

- Short duration trial with limited time to optimize
- Lower sheet moisture and steam demand
- Slight loss in strength attributed to loss in starch coat weight

## Application Recommendations

LinerCoat can be supplied to a mill site as a dry or slurry product, depending on the mill location. If dry product is supplied, Imerys can design an on-site system for product storage and makedown into a slurry. This slurry can be mixed with the size press starch solution through a specifically designed pump and flowmeter system before it is applied in the papermaking process.

Some points of consideration for the papermaker when using LinerCoat:

- If total linerboard basis weight is kept constant, fiber in the base sheet is removed, which could be a significant cost savings
- Typically starch is applied at the size press at ~10% solids, with a typical coat weight of ~2 gsm/side
- LinerCoat kaolin slurry can be added directly to the starch solution as it feeds the size press, and solids can increase to 16-18%

LinerCoat can be added at 2 gsm/side (keeping starch constant), therefore base sheet fiber could be reduced by 4 gsm. Overall a 50:50 starch:pigment ratio is recommended, with total coating at ~4 gsm/side. Size press solids will be higher, while maintaining similar coating viscosity. There is also a potential to use more kaolin, with a coat wt of ~6 gsm/side and a 33:67 starch:pigment ratio. This will give better surface properties, including porosity and printability.

## MORE INFORMATION

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