

INK, HEART & SOUL



PAPER COATING GUIDE

Barrier Coatings – RethINK SOLUTIONS for Paper & Board Applications



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Considerations for achieving good barrier performance

Considerations for barrier performance

Common Topics	Target	Consider
Base paper / board	High quality, smooth & dense paper / board	Paper porosity, smoothness, homogeneous structure, internal sizing, surface sizing, & surface coating ("clay coated")
Coating layers	Homogenous coverage without defects and fully closed film surface	More layers = less defects. Pre-coating ("primer") or double coating. Different coating systems have pros & cons. Specialist coating (e.g., curtain, air knife, blade, rod/bar) will usually provide higher coatweight and better coverage than other methods
Coating laydown ("coatweight")	Full coverage and acceptable barrier performance	Higher coatweight usually means better barrier performance but can also increase the risk of blocking and requires more drying capacity
Foam / Air	No air in the coating mix when applied to avoid defects	Use of additional defoamers may affect barrier performance, so adjustment of equipment and use of deaeration systems is preferred
Drying	Defect-free, dry surface and balanced internal paper/board moisture	Type of drying (hot air, IR, etc) and drying conditions have a significant impact on the coating performance. Temperature range and final moisture content are important
Blocking at rewinder	Zero blocking, as this can damage the barrier	Lower web temp and minimum coatweight reduce risk of blocking. Sufficient drying is also critical

Considerations for achieving good converting performance

Important Topics	Considerations for converting performance
Base paper / board	Packaging papers and boards are often specialised and there can be significant differences between different grades, even from the same supplier. It's important we conduct any testing on the same grade as our customer
Barrier requirements	Try to find out all the actual requirements, as well as what is currently being used. Is a combination of different barriers required? This is often not easy. e.g., LDPE is used for commercial reasons but is actually 'over specified' for many applications. Consider some, moderate, good, excellent if specific values are not available
Sealing	Find out as much as possible about the process. e.g., temperature range, dwell time, hot tack, pressure, heat type, coating-to-coating or coating-to-fibre, "lap" or "fin" seal Photos/videos and access to the actual process are always helpful
Further converting	It's important to consider what other functionality might be needed for the coating in the supply chain. e.g., flexibility for folding/bending, stability at high/low temperatures, anti-static, blocking/release, CoF Also, is there a need for printing/gluing on the barrier coating
Applying the coating	Different coating methods have pros and cons. It's important to understand what method is being used and what requirements/limitations that brings. e.g., min/max coatweight, single/multiple layers, drying conditions

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for Paper & Board applications*



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