



BlisterPro® XCEL Services

Klöckner Pentaplast's (kp) newly expanded BlisterPro® XCEL services allow pharmaceutical packaging development to move from design to prototype production to stability testing in very short time frames. This speed to production also allows multiple iterations of design and material adjustments to take place quickly and easily. What once could have taken months of design, testing and feedback, can now be accomplished in weeks.

kp's BlisterPro® XCEL services help package designers, engineers and technicians explore the effects of tool geometry, film types and process conditions, as well as predict the protective barrier properties of the final package without running line trials. BlisterPro® XCEL's capabilities are supported by in-house finite element analysis, CNC (computer numerical control) automation and a state-of-the-art blister packaging machine, allowing for rapid prototyping. Once packaging production is underway, BlisterPro® XCEL services can provide manufacturing consulting, on-site troubleshooting and training to increase line efficiency, speed and quality.

Delivering an entirely new dimension in product and packaging optimization, BlisterPro® XCEL services are now partnered with ASAP lab studies and ASAPprime® accelerated product stability modeling software from FreeThink Technologies. These services use highly accelerated conditions to accurately determine product stability in multiple climate zones, enabling pharmaceutical developers to precisely determine packaging needs.

At the kp i.center in Charlottesville, Virginia, packaging professionals can join in all stages of the BlisterPro® XCEL process to create the perfect package for their product. Collaborations at the kp i.center can result in personalized packaging prototypes in as little as one week.

Providing essential insights into product and packaging needs, Klöckner Pentaplast's BlisterPro® XCEL services help clear the path to product launch, so your first choice will be the right choice, every time.

Capabilities:

- 3-D simulations backed by experimental results
- Address blister design/barrier constraints
- ASAPprime® accelerated product stability modeling software
- ASAP predictive lab studies
- CNC (computer numerical control) automated tooling manufacturing
- Estimate shelf life of products in blisters
- Manufacturing consulting and on-site troubleshooting
- Materials and production training programs
- Pentapharm® BlisterPro® finite element analysis
- Permeability, film-thickness & surface-area prediction of thermoformed cavities
- State-of-the-art blister packaging machine
- Tool designs for optimal barrier performance
- Value engineering consulting to increase line efficiency, speed and quality

BlisterPro® XCEL

Moving at the *speed* of your next big idea.

Applications:

- Evaluation of existing package design and material
- New package design
- Product expansion into new regions
- Product formulation optimization
- Production process improvement
- Switch-out from cold form to thermoformed packaging

Benefits:

- Accelerated speed-to-market
- Accurate product stability profiles across multiple climate zones and rapid comparison to originator products
- Alignment of product stability performance with the most cost effective barrier to meet shelf life requirements
- Cost and time savings across packaging design, testing, and operational phases
- Excellent accuracy of blister MVTR and OTR predictions
- Prevent costly package screening studies, tooling expenditures, production line trials & design pitfalls

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