Waterscoring

hhs
Baumer Group

The key to efficient production of aesthetic packaging

Xcold

Application

Let's stick together

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Perfect scoring for premium quality packaging

The problem of ineffective scoring in packaging production

If scoring fails to adequately reduce the bending stiffness of a substrate, the tension in the fold remains too high. The effect of this tension is to pull the packaging back into its original shape, i.e., to "re-open" it. This is a major challenge, particularly in pack-on-demand processes in which packaging is both produced and packed on site. The tension puts a strain on glued joints – which may not yet be fully cured – and can lead to failure of the packaging.

Cracked linerboards: An aesthetic and business risk

First impressions matter, and they can be crucial for packaging products. Cracked linerboards make a bad impression. They mar the aesthetic design of a product and can have consequences for business, such as reduced payment or rejected deliveries.

Precision scoring: A must for efficient production processes

Scoring is important for making a substrate formable and foldable. Imprecise scoring can impair dimensional accuracy and cause difficulty when erecting the boxes. These effects disrupt automated packing processes and pack-on-demand systems in particular, because they depend on exact dimensions. The results are customer complaints, delays and inefficient production processes. Precision scoring therefore is essential to a trouble-free workflow.

The solution: A temporary reduction in bending stiffness and an increase in elasticity

These problems can be resolved by applying a water-based folding liquid along fold lines. It reduces the bending stiffness and increases the elasticity of the paperboard, making it more flexible and resilient.

Baumer hhs offers a proven solution based on its over 35 years of experience in the packaging industry: water scoring. This method is used successfully not only in packaging production, but also in print finishing. Contact us and we can help you find custom solutions for your packaging needs.

Advantages at a glance:

- Reduces bending stiffness to facilitate folding
- Increases elasticity to prevent linerboards from cracking
- Fewer disruptions in the production process thanks to minimised tension in the folds.
- Enhanced product quality and greater efficiency
- Baumer has 30 years of experience with water scoring

Application in print finishing

Water scoring is an ingenious but simple trick that offers tremendous advantages when folding packaging inserts printed on very thin paper. Its effect is best demonstrated by large sheets that must be folded to very small final sizes: The inserts can often be 3 - 4 mm thick.

The method is simple: A very fine line of water is applied to the precise areas to be folded. Then the paper is immediately folded to its final size, bundled and packed under pressure.

Advantages of water scoring:

- The resulting packaging inserts are thinner, meaning more of them can be included in a single packaging unit. Packing speed increases while cost decreases.
- Most importantly: The inserts no longer pop open and stay virtually flat. This is a major advantage in automated packing processes, but also facilitates manual operations.

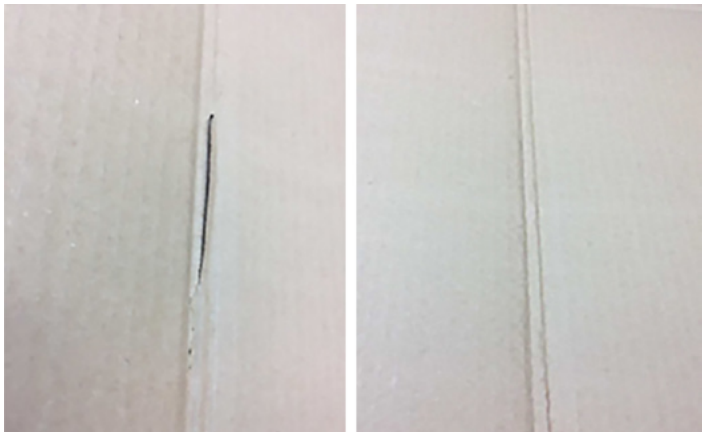
Water-scored packaging inserts are perfectly flat.

Application in corrugated packaging production

The advantage of corrugated packaging lies in its high bending stiffness but relatively low weight. However this advantage is also the reason scoring and folding the material can be a challenge, especially when working against the direction of the fluting. Quality issues of various kinds often result from defective scoring. They include, for instance, cracking of both the inner and outer linerboards because of damage to the fibre structure, an insufficient reduction in bending stiffness, imprecise positioning of the fold line, and failure in the region of the scoring due to excessive loss of strength. These defects can impair the aesthetic quality of a box, cause problems downstream on gluing and packaging lines, make it more difficult to erect the boxes, lead to dimensional inaccuracies, and lessen the overall strength of a packaging product.

Advantages of water scoring:

- Significantly decreases local bending stiffness
- Facilitates the folding process while maximising quality
- Increases the precision of folds along the scoring line, greatly reducing dimensional inaccuracy.
- Prevents fibre breakage and cracked linerboards

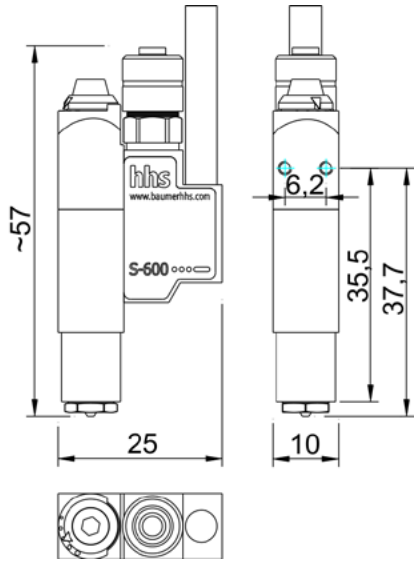


Comparison of corrugated board folded without and with water scoring

Application in folding carton production

The quality and appearance of printed materials depends on the image printed on them. In the case of folding cartons, folding can cause unsightly cracking of the printed image, usually involving small splits in the material through which the colour of the substrate is visible. Cracking impairs the impression of quality the packaging makes on a customer. Applying a folding liquid temporarily increases the elasticity of the layers in a localized area, helping to avoid defects of this kind.

Note: Baumer hhs uses alcohol-free folding liquids that promote maximum functional reliability. They are safe and ideally suited to food packaging applications. They are optimised to rapidly penetrate the substrate, making them a viable option for use even in fast-running machines.



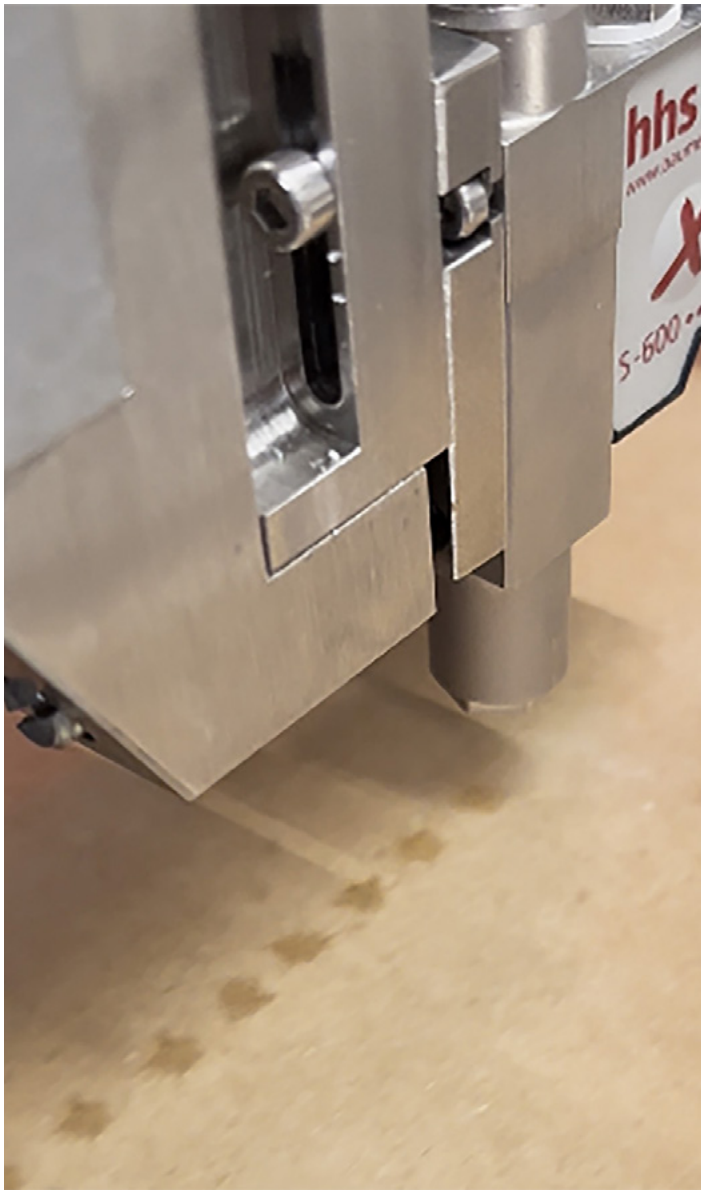
*Dimensions in millimetres

Technical Data

Specification	Value
Length	25 mm
Width	10 mm
Height	~57 mm
Weight	~0,031 kg
Operating pressure, max.	6 bar
Material viscosity (Brookfield)	max. 150 mPa·s

Application technology

Baumer hhs supplies its very compact SW-600 application head for scoring. This electric applicator boasts very small dimensions and extremely rapid operating frequencies of up to 1,000 Hz, depending on the application. With these features, it can easily be integrated in existing machines.



Dot or line application for all machine speeds

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Your competent partner

Baumer hhs, based in Krefeld, Germany, is your worldwide partner for reliable and innovative glue application and quality assurance systems.

For us, quality and precision are basic principles of engineering and manufacturing, and professional services are an integral part of our products. We maintain a constructive and collaborative dialogue with our customers and suppliers, which forms the basis for solutions that optimally meet their individual needs.

Our trained sales staff and technicians support you with any issues you encounter in production. The Baumer hhs solution centre in Krefeld offers you assistance with new applications and in selecting the right adhesives.

We want our customers to be excited – with our premium products and our impeccable all-round service. But it's best to see our products for yourself! Just call or send us an e-mail.

We'd be happy to help you with your next project!

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