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ZERO-WASTE WINGS

A new Generation of Menstrual Pads

Redefining Sustainability & Innovation in Menstrual Hygiene

White Paper | 2025

Paper Converting Machine Company · Winkler + Dünnebier · BALDWIN · HUDSON-SHARP · STAX Technologies TISSUE PACKAGING SOLUTIONS · Northern Engraving and Machine

Zero-Waste Wings

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All information contained in this document is non-binding, and provided for general informational purposes only.

Figures, examples and estimates (e.g. regarding material cost savings) are based on preliminary assumptions and may vary depending on specific product configurations, material types, purchasing volumes, logistics, and local duties.

The customer is responsible for verifying local market requirements, product compliance, and intellectual property considerations before commercialization.

Zero-Waste Wings

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SAVE COSTS + REDUCE WASTE

- Narrow backsheet, saving approx 30 - 40% of backsheet costs
- Low- or zero-waste cut of wing material
- Cheaper final-cut knives (round end-cut instead of wide allround cut)

LEAKAGE PROTECTION

- Hydrophobic instead of hydrophilic wing nonwoven -> no backsheet needed in wing area
- Optionally, wings and hydrophobic nonwoven barriers are one same material

CHOICES

- Different concepts available
- Suitable for different product concepts
- Adaptable to different layouts for retrofit of existing machines

Zero-Waste Wings

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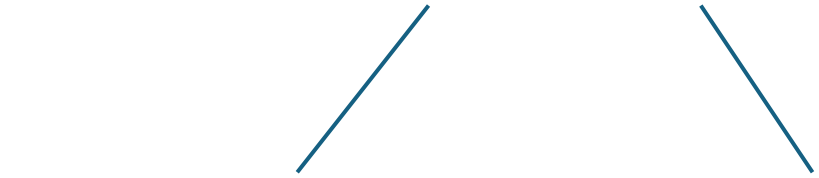
PRODUCT DESIGN OPTIONS

BARRIER WINGS

Zero Waste

DISCRETE WINGS



Low Waste

Zero Waste

Zero-Waste Barrier Wings

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VERSION 1 / CONTINUOUS BARRIER WINGS – PREMIUM PRODUCT

- Zero-waste length-cut of a continuous hydrophobic web, serving at the same time as barrier nonwoven.
- Twisting the wing contour to the outside after cut.
- Alignment in machine direction, allowing opposite or offset position of left + right wing.
- Lamination with body-side of a center topsheet.
- Fixation possible by glue, thermosealing, ultrasonic.
- Inline flexoprinting of barrier wings and/or center topsheet possible.
- Folding of wings towards topsheet surface, fixed by one central bridge release-paper.
- Alternatively, one single release paper on each wing, plus a bridgetape made of non-siliconized paper. This version is especially helpful for thin, slippery wings and high speed.

Zero-Waste Barrier Wings

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Barrier Unwind

Option Flexoprint on Barrier

Length Cut

Twisting Wings to Outside

MD Alignment of Wings

Marriage with Center Topsheet

Option Flexoprint on Center Topsheet

Marriage Topsheets Core Backsheet

Backsheet C-Fold

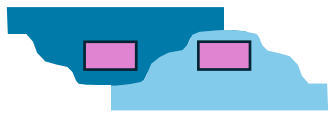
Final Cut (new knives for round end-cut)

Wing Folding

Bridgetape (Option Bridge Paper)

BARRIER-WING PROCESS STEPS

Option Release Paper on each Wing



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Zero-Waste Barrier Wings

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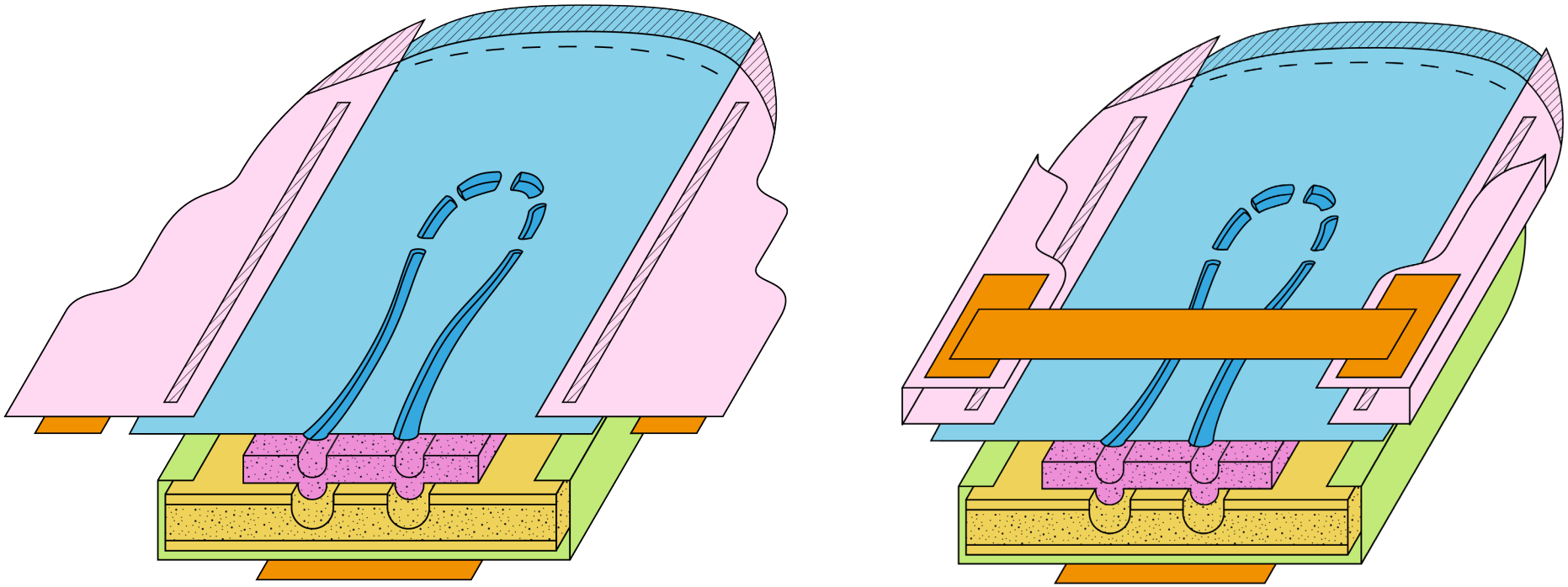
CROSS-SECTIONAL VIEW

Wings can have 1 release-paper each + 1 bridgetape, or 1 bridge-paper only



Continuous Barrier-Wings

Zero-Waste Barrier Wings

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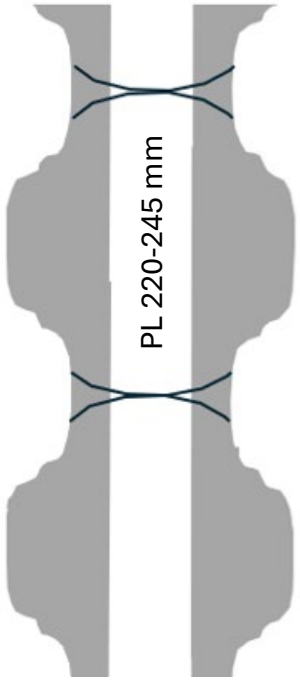
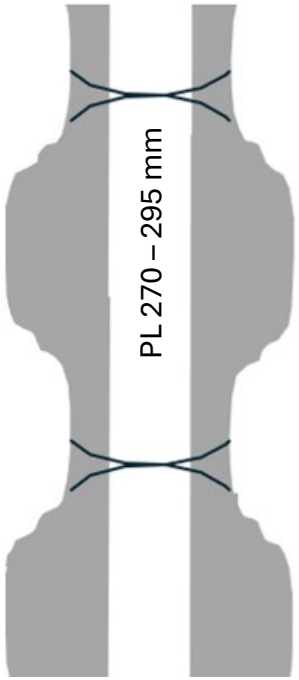
DIFFERENT PRODUCT SIZES

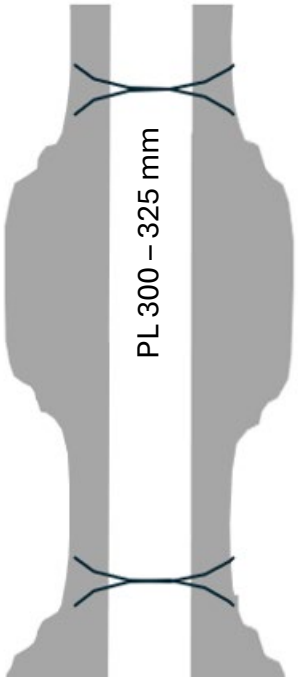
NORMAL / REGULAR



SUPER



OVERNIGHT



These are typical lengths. The final length will be adapted to your needs.

Zero-Waste Barrier Wings

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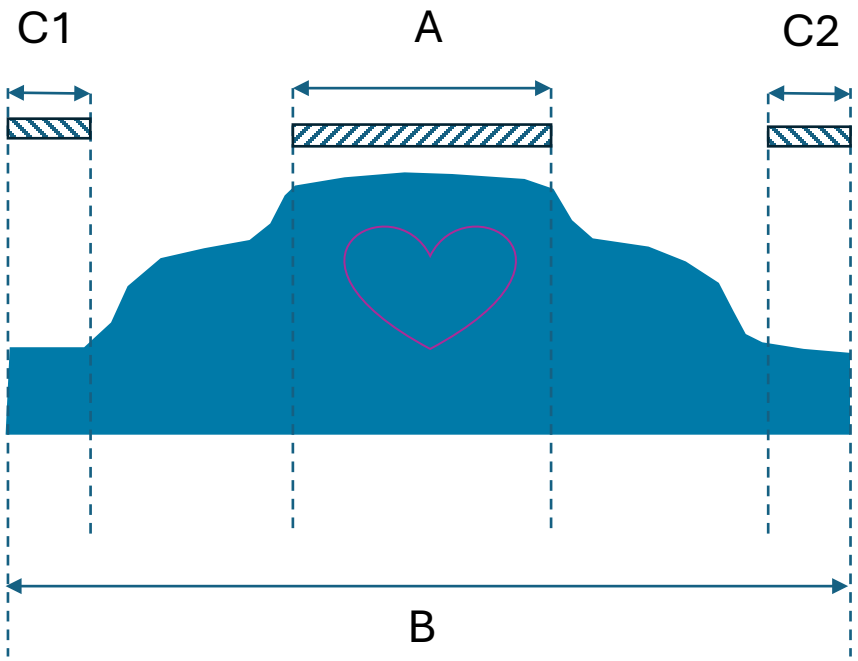
WING DESIGN



Individual wing design is possible, as long as left and right wing contour fit into one another without waste.

Dimensions to be observed:

A) Outer length of wing = length of wingless barrier C1 + C2

B) Length of barrier incl wing = total product length

Zero-Waste Discrete Wings

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VERSION 2 / DISCRETE WINGS – ECONOMY PRODUCT

- Cut the wings (shaped cross-cut) by our baby-diaper back-ear process (low or zero waste).
- Adapt their distance electronically, eliminating disadvantages of common cut + place solutions.
- The distance adaptation includes a 180° turn of the left + right wing to the outside.
- Alternatively, the right wing is moved to the left side, and the left wing to the right side, without turning.
- Alignment in machine direction, allowing opposite or offset position of left+right wing.
- Placement on inside of topsheet or backsheet.
- Alternative placement on body-side of topsheet, to create a discrete leakage barrier in the wing area.
- Fixation possible by glue, thermosealing, ultrasonic.
- Inline flexoprinting of wings and/or topsheet possible.
- Folding of wings towards topsheet surface, fixed by one central bridge release-paper. Either before marriage with product, or afterwards.
- Alternatively, one single release paper on each wing, plus a bridgetape made of non-siliconized paper.

Low-Waste Discrete Wings

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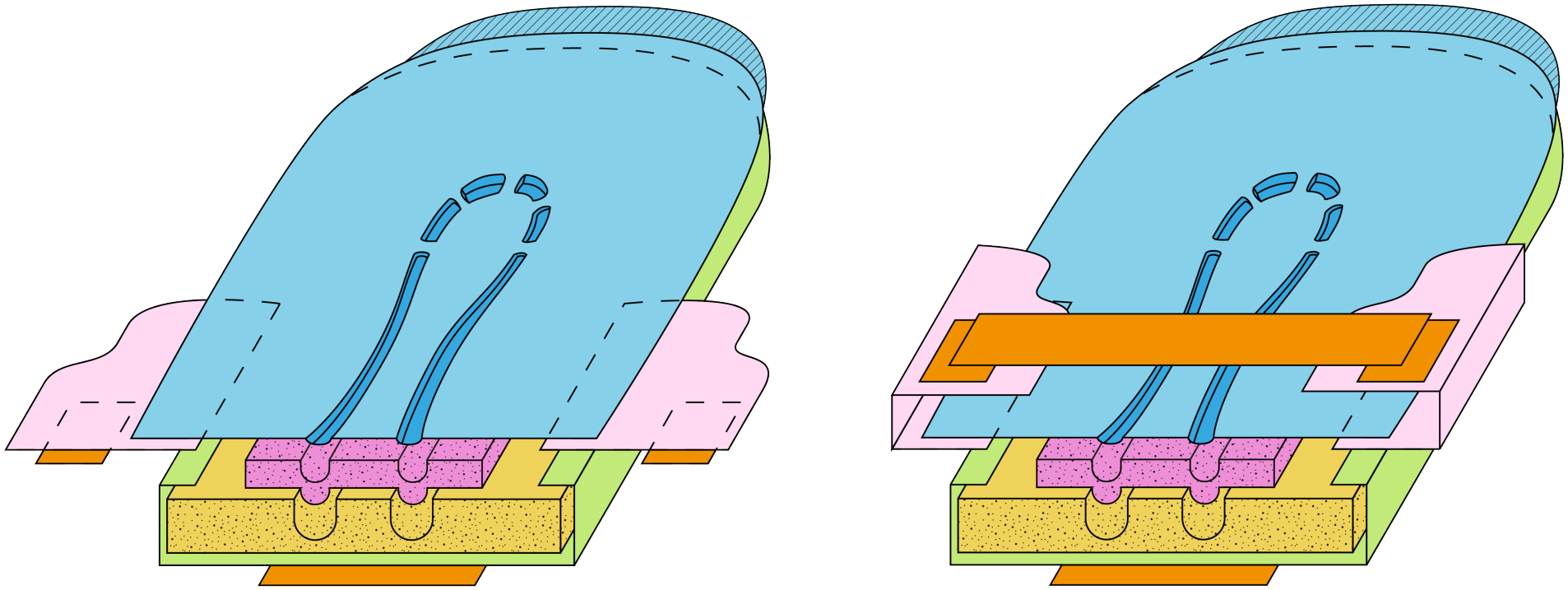
CROSS-SECTIONAL VIEW

Wings can have 1 release-paper each + 1 bridgetape, or 1 bridge-paper only



Low-Waste Wing Contour

Low-Waste Discrete Wings

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Wing Unwind

Option Flexoprint on Wing

Cross Cut

Distance Adaptation

Turning Wings to Outside

MD Alignment of Wings

Marriage with Center Topsheet

Option Flexoprint on Center Topsheet

Marriage Topsheets Core Backsheet

Backsheet C-Fold

Final Cut
(new knives for round end-cut)

Wing Folding

Bridgetape
(Option Bridge Paper)

DISCRETE WING PROCESS STEPS

Low-Waste Design

Option
Release Paper on each Wing

Zero-Waste Discrete Wings

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CROSS-SECTIONAL VIEW

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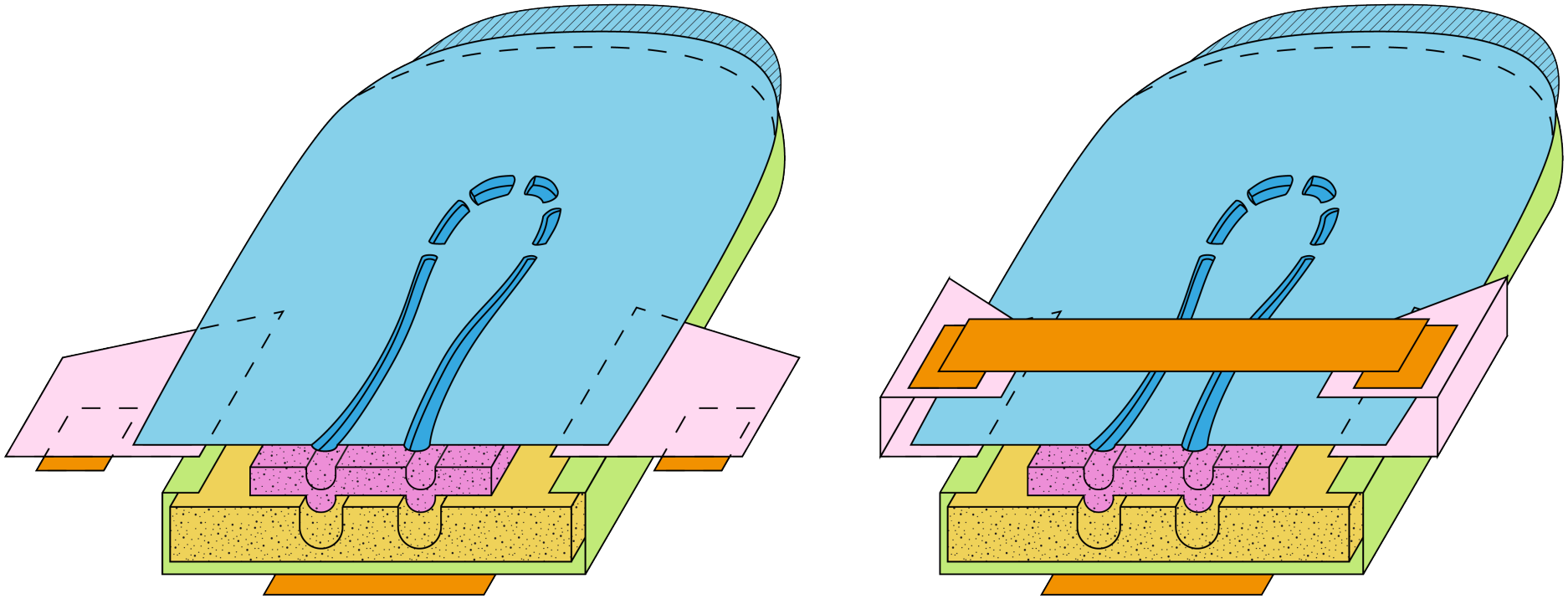

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BENEFITS

- Cost-saving and waste reduction
- Innovative product
- Premium product if combined with barrier functionality
- Many attractive wingshapes possible
- Wing position centered in MD for small products, or off-centered in the upper section for longer products
- Higher basis weight of wing nonwoven supports a perfect wingfolding at high speeds
- We have decades of experience in application of discrete add-on side panels
- The process allows wingfolding before final cut of product, thus increasing process stability
- Upgradability for existing lines

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Thank you for reading our White Paper.

For questions, partnership opportunities or further information, please contact us:

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