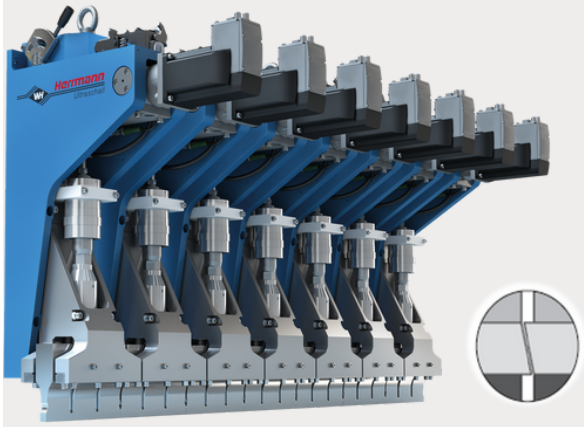


CASE STUDY 0300

Large-Format Textile Converter Improves Laminating Efficiency and Production through Ultrasonic Welding.

HIGHLIGHTS

The Challenge

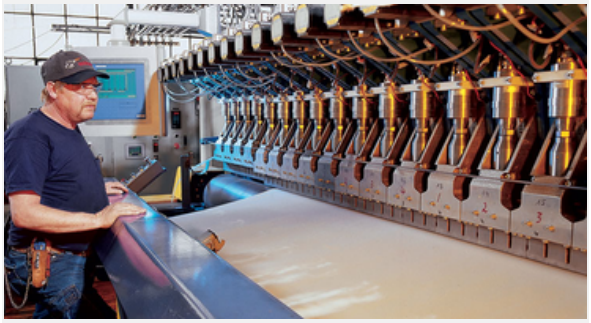
To meet increasing demand for their high-quality roll-to-roll converting services, Beckmann Converting recognized the need to upgrade a key laminating machine to overcome limitations in speed and consistency, particularly when processing challenging multi-layered materials.

The Solution

Beckmann Converting partnered with Herrmann Ultrasonics to implement a state-of-the-art ultrasonic bonding system, enabling precise and consistent bonding even across applications as wide as 126-inches, while minimizing distortion and maximizing uptime.

The Result

The implementation of the new ultrasonic bonding system significantly enhanced Beckmann Converting's laminating line allowing them to add new bonding patterns to their portfolio, such as the new “CC” roll. Key benefits include a substantial increase in production capacity, a marked improvement in product quality, and a significant boost to environmental sustainability through the elimination of harmful adhesives.



Pushing the boundaries of textile manufacturing, Beckmann Converting Inc., leverages ultrasonic technology for high-performance laminates, resulting in an increased production capacity.

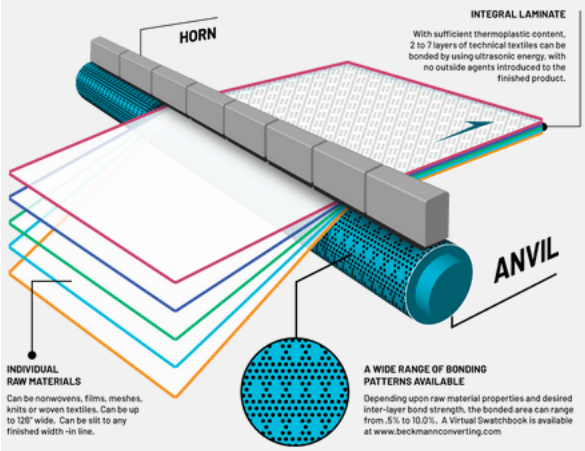
Beckmann Converting, a leading toll converter specializing in unique textile applications, recently partnered with Herrmann Ultrasonics to upgrade a key laminating machine. This upgrade was driven by the evolving needs of the industry, specifically the emergence of novel, more sustainable materials. These new materials presented unique challenges, such as increased web handling difficulties (bagginess, wrinkles) and inconsistent bonding during the lamination process.

They also recognized the need to enhance their production efficiency to meet the growing demand for faster turnaround times from customers. By upgrading their laminating technology, Beckmann Converting aimed to improve production speed, streamline processes, and maintain its competitive edge in the rapidly evolving textile market.

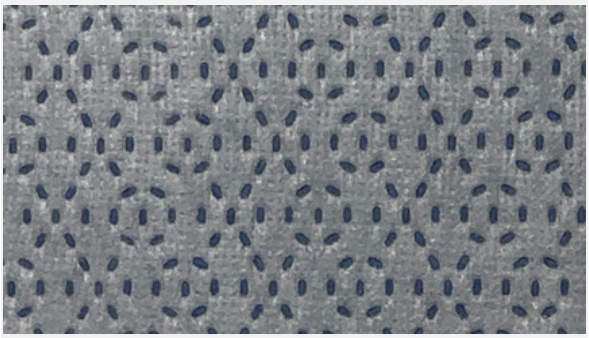
The Challenge: Meet the Growing Demand for High-Quality Textiles

With a growing demand for innovative and complex textile structures, including multi-layer laminates and intricate bonding applications, Beckmann Converting recognized the need to further enhance their production capabilities. While their existing laminating line was capable of producing high-quality results, there was room for improvement in terms of:

- **Production Speed and Efficiency**: Meeting the increasing order volumes and shorter lead times required by their customers while minimizing downtime.
- **Enhanced Bonding Consistency**: Ensuring consistent and reliable bond strength across the entire width of the material, regardless of the complexity of the laminate structure.
- **Evolving Materials**: Effectively handling and processing diverse, evolving materials including sustainable options, while maintaining high-quality and efficient laminating operations.



Laminating Complex Applications



New “CC” Roll Pattern

About Herrmann Ultrasonics

As a specialist in ultrasonic welding of plastics, packaging materials, nonwovens and non-ferrous metals, Herrmann has been developing safe and efficient welding systems for over 60 years. This results in over 2,000 successfully implemented welding solutions each year. With the services of Herrmann Engineering, more than 600 employees excite customers all over the world.

The Solution: Cutting Edge Ultrasonics Bonding System

To address these challenges, Beckmann Converting partnered with Herrmann Ultrasonics, a leading manufacturer of ultrasonics bonding technology. Herrmann provided a comprehensive solution centered around a state-of-the-art ultrasonic bonding system, specifically designed to meet the unique requirements of Beckmann Converting's production environment.

This system incorporated high-powered ultrasonic generators and advanced motion control systems which ensure precise and consistent bonding across the entire width of the material, regardless of thickness or complexity. Benefits of the new system include:

- **Enhanced Bond Quality:** Ultrasonic bonding ensures consistent and reliable bond strength across the entire width of the material, regardless of material thickness or complexity, leading to improved product performance and durability.
- **Increased Production Efficiency:** The fast cycle times of ultrasonic bonding enable higher production volumes, reducing lead times and increasing overall productivity and less system downtime.
- **Reduced Maintenance Costs:** Ultrasonic welding eliminates the need for adhesives and solvents, reducing maintenance requirements and associated costs while extending equipment lifespans.

The Results: Improved Production Capacity

Through the integration of innovative ultrasonic technology into their nonwoven manufacturing process, Beckmann Converting significantly elevated their production capabilities leading to several benefits including enhanced bond quality, increased production efficiency, and reduced maintenance costs.

Beckmann Converting has begun to explore and implement innovative bonding techniques, such as the new "CC" roll pattern. This unique bonding pattern offers exceptional inter-ply adhesion, creating a bonded area close to 10% of the full laminate web, which is ideal for applications that require high strength and durability such as car covers. This demonstrates how the upgraded technology empowers Beckmann Converting to expand its capabilities and provide their customers with a wider range of high-performance, customized solutions.

Manufacturers who partner with Herrmann Ultrasonics gain access to cutting-edge technology and expert support, enabling businesses to achieve new levels of innovation and efficiency in their production processes. Consult with an expert today to explore how our advanced technology solutions can revolutionize your production processes and drive your business to new heights.