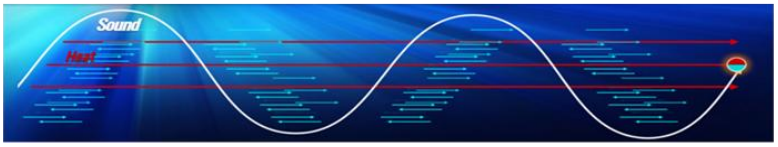


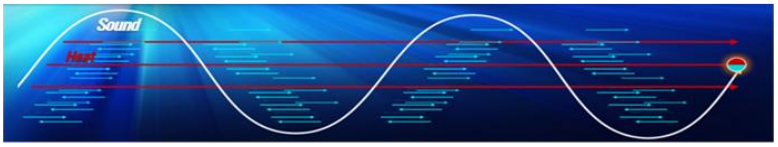
Ultrasonic Curing with Spectra HE Ultra Thermal System.

The demand for sustainable packaging is rapidly transforming the printing and converting industries. A recent challenge faced by one of our clients, a leading packaging converter, underscores this shift. Their customer, a confectionery producer, sought to replace traditional plastic film packaging with fully sustainable paper-based alternatives, while maintaining the same high-quality aesthetic. This transition required significant adjustments to their rotogravure printing process, particularly in drying and curing.

Photo 1. Side view of the rotogravure press

The Challenge: Achieving Sustainable Curing at High Speeds

The new sustainable packaging specifications required the rotogravure press to handle a complex process: printing and drying of inks, applying a specialized overprint varnish/release liner and curing it, cold seal coating and drying. While the solvent-based printing process met initial requirements, the existing drying system struggled to cure the varnish/release liner. This constraint was primarily due to temperature limitations, despite the system consuming a substantial 180 kWh of thermal energy per drying station. The inability to achieve crosslinking or curing the production process was originally conducted in two steps: printing inks and drying as step one and coating- curing and cold seal coating and drying as step two. The cost of the project was high. The process needed another approach.



The Solution: HTI Spectra HE Ultra Thermal System

To address this challenge, Heat Technologies Inc. (HTI) collaborated with the client to integrate the Spectra HE Ultra Drying/Curing Module after the OPV/release liner coating and drying stage. This strategic addition ensured proper curing before the cold seal application. Four months following the order, the system was installed, showcasing HTI's commitment to rapid and effective solutions.

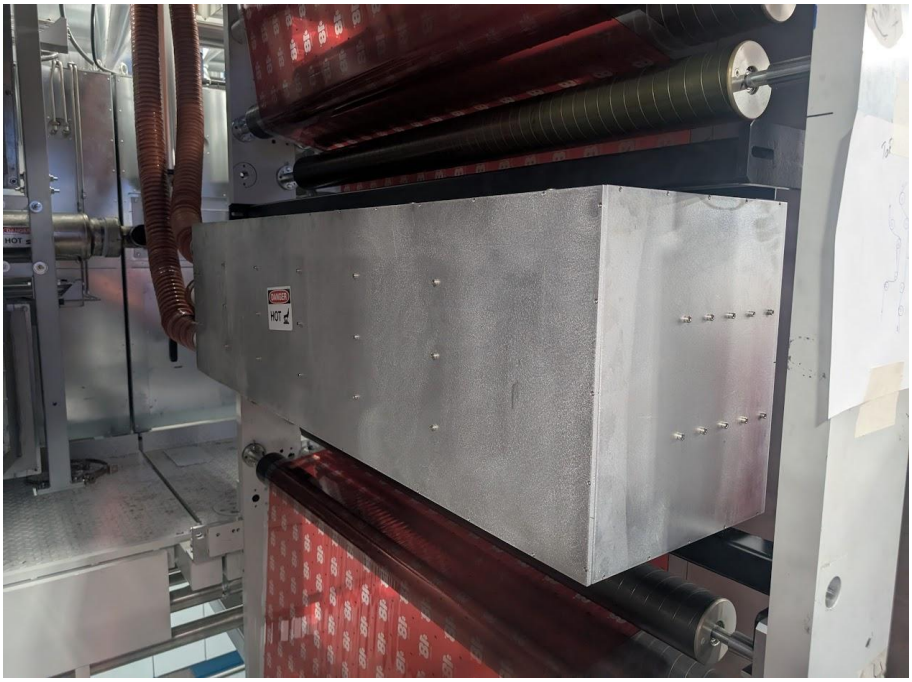
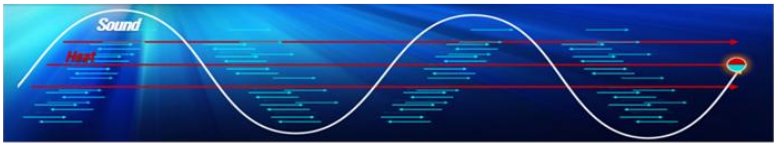


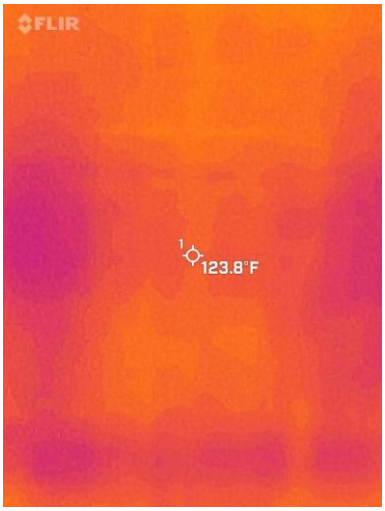
Photo 2. HTI Ultrasonic Spectra HE Ultra Drying and Curing Module Installed.

Key Benefits and Performance:

- **Process Improvement:** *Ability to eliminate two steps of the production and conduct the process in one step-no need to utilize two lines in the production process*.
- **High-Speed Curing:** The Spectra HE Ultra module successfully cured the web at the target speed of 300 meters per minute, overcoming the limitations of the original system.
- **Energy Efficiency:** The system achieved this performance with an installed power of 100 kW and an operating power of just 70 kWh, significantly reducing energy consumption compared to the previous 180 kWh per station.
- **Rapid Integration:** Pre-commissioning at HTI's Atlanta facility minimized downtime during installation, ensuring a smooth transition.



- **Compact and Robust Design:** The module's dimensions (0.6 m length, 1.65 m width, 0.75 m height) allowed for seamless integration into the existing production line. [1]
- **Major Components:** The system comprises a control panel, regenerative blower, safety interlocks, and an efficient electric heater, ensuring consistent and safe operation.



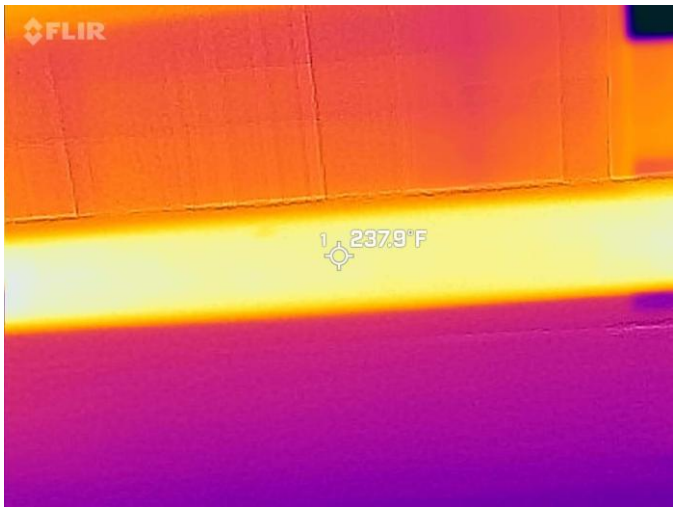


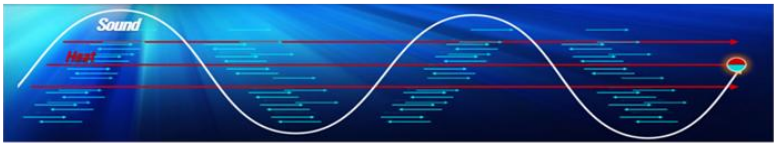
Photo 3 and 4. Temperature of the web before and after the HTI Spectra HE Ultra Module in Operation.

Technical Specifications of the Spectra HE Ultra Drying and Curing Module:

- Dimensions: 0.6 m (web direction) x 1.65 m (across web) x 0.75 m (depth/height)
- Installed Power: 100 kW
- Operating Power (average): 70 kW
- Major Components: control panel, air pressure blower, safety interlocks, electric heater.

The Impact: Enabling Sustainable Packaging Production

The successful implementation of the Spectra HE Ultra system not only resolved the client's production bottleneck but also facilitated the production of sustainable, high-quality packaging. By enabling efficient curing at high speeds with reduced energy consumption, HTI is helping manufacturers meet the growing demand for environmentally friendly packaging solutions.



Conclusion:

This case study demonstrates the critical role of advanced drying and curing technologies in achieving sustainable packaging goals. The HTI Spectra HE Ultra Thermal System provides a powerful and energy-efficient solution for rotogravure printing, empowering manufacturers to meet the challenges of the modern packaging industry.

Contact Information:

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