

HIGH EFFICIENCY DRYING OF WATERBASE COATINGS AND ADHESIVES ON PAPER, FILM & FOIL

CASE HISTORY #1 Dry Waterbase Adhesive on Metalized Foil

A water-based adhesive was applied at a rate of 8.5 pounds per ream, 30 percent solids on metalized polyester film. A line speed of 650 FPM was achieved with a system only 60 inches in heated length rated at 120 KW. This system performed the same work as a 30 ft. long, high velocity convection oven.

CASE HISTORY #2 Dry and Cure PVDC Coating on Polypropylene Film

A waterbase PVDC coating was applied .001 inch thick wet, 30 percent solids onto a polypropylene film with a line speed of 500 FPM. Complete drying and curing was achieved in under 1.5 seconds, with a heated length of only 12 feet.

CASE HISTORY #3 Dry waterbase Catalytic Coating on Paperboard

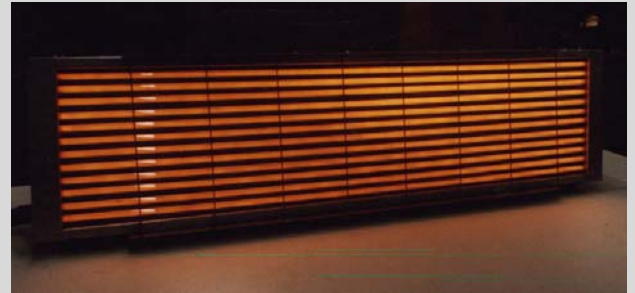
A waterbase coating was applied wet at a thickness of .00075 inches onto a paperboard and was dried in under 0.5 seconds. At a production speed of 300 FPM, this resulted in a heated length of 2.5 feet and a connected load of 72KW for a 48 inch wide sheet.

CASE HISTORY #4 Dry Waterbase Adhesive on Silicone Release Paper

A waterbase adhesive, 50 percent solids, was applied at the rate of 24 pounds per ream, dried at a speed of 100 FPM with a Casso-Solar Infrared Heater system under 3 feet long, consuming 45 KW per hour for a 36 inch wide sheet.

All systems are custom designed for each application. Our Applications Engineering staff will work with you to choose the best configuration for your process and budget. Casso-Solar maintains complete laboratory facilities to prove out coating compatibility with our drying equipment.

Systems may be as simple as a small preheater on an existing line, to a turnkey dryer. All auxiliary equipment including air handing systems, drives, control consoles, web temperature measuring equipment, etc., is available.



State-of-the-art water-base coatings require more energy to dry and cure than traditional solvent base coatings. High efficiency Electric Infrared Drying Systems can provide this extra energy with minimal space requirements, low operating costs and long service life.

Peak efficiencies are achieved by matching the emission wavelength of the radiant heater to the absorption wavelength of the coating. Systems designed with the Casso-Solar Unitube Heater®, operating at 1600°F emitter temperature, will produce infrared energy at wavelengths of 2.5-2.6 microns, which is the wavelength region absorbed best by water base coatings. Film substrates have absorption wavelengths, at 3.5 microns, which will allow the infrared energy to pass through, with minimal pickup, preventing heating of the film and subsequent distortion. Energy lost by passing through a film substrate may be re-claimed with a reflector or by an opposing bank of infrared heaters.

On metalized film or foil, the infrared is reflected directly back through the coating, enhancing the drying efficiency. Coatings on paper and paperboard run with similar high efficiencies. Migration of coatings on paper, can be controlled by placing infrared on both sides of the sheet and varying relative energy output of each heater.

Systems are provided with supply, exhaust and cooling air. Under normal operation, the supply and exhaust air systems remove the evaporated water. During a line stoppage, cooling air is added to the supply and the heaters are shut off, reducing the radiant energy to the product in seconds, preventing damage to the coating and substrate.

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