

- ! good wrap around coating and edge cover
- ! can apply a variety of coatings (e.g. solvent-/water-based, high solids, radiation curable)

Cautions

- ! pieces sometimes need to be coated by humidity sensitizing agent as pieces must be conductive
- ! safety/fire risk
- ! extra cleanliness essential
- ! touch up coating buildup at high points and skips (uncoated areas) in corners caused by Faraday effect
- ! bulky and delicate spray guns
- ! relatively high cost
- ! wrap-around may overcoat rear edges

Vacuum Coating

Pieces are passed through a coating chamber under

Thomasville Furniture Case Study
Thomasville, North Carolina

Thomasville Furniture was realizing an 80 percent loss of finishing materials (20 percent transfer efficiency) from their conventional air spray guns on their chair finishing line. In 1979, the company installed five hand-held airless electrostatic sprayers in an effort to reduce the amount of coating material wasted.

Clean up of the spray booth is now conducted once a week instead of once per day. Material waste was reduced by 30-40 percent and associated wastes and VOC emissions were reduced. The walls of the spray booth are grounded so that overspray is attracted to the walls keeping the remainder of the area clean. The greatest savings occurred in the lines wiping stain where stain usage was reduced from 12 ounces per chair (dipping process) to three ounces per chair. In spite of some difficulties with humidity problems and higher coating prices, a payback period of one year was realized.

Larson Juhl, Inc. Case Study
Ashland, Wisconsin

Larson Juhl used Air Assisted Airless sprayers to apply the finish onto milled mouldings. They switched to High Volume Low Pressure spray guns in seven of its nine finishing processes, resulting in a 45 percent decrease in acrylic- and nitrocellulose-based paints.

Payback was immediate as the decrease in maintenance, parts inventory, and waste disposal outweighed the cost for purchasing the HVLP systems--enough to realize an \$18,000 payback the first year with just one system.

Source: "Larson Juhl, Inc.: Replacing AAAL (Air Assisted Air Less) spray guns with HVLP (High Volume Low Pressure) spray guns," Wisconsin Department of Natural Resources, 1995.

Sun Tui Case Study
St. Paul, Minnesota

In 1992, Sun Tui, which manufactures futon frames, installed an automated electrostatic spray line that applies waterborne coatings to futon frames. The system replaced conventional air spray that applied water based coatings. The system includes a conveyor line, a photosensitive light curtain that communicates piece size information to the spray guns, water spray guns to add humidity to the piece for better conductivity, electrostatic bells which apply the coating, and an infrared oven.

Results have included increasing transfer efficiency 30-35 percent over the conventional system, less overspray and wasted material, and less VOC emissions.

Source: "Futon Maker Plugs into Eelectrostatic Finishing System," *Wood & Wood Products*, January 1993.