
Case Study: Hatteras Yachts, Inc.

Location:	New Bern, NC (Craven County)
Industry:	Yacht Manufacture (SIC 3732)
Pollution Prevention Application:	Process/Equipment Modification
PPP Challenge Grant:	\$15,000
Annual savings:	\$21,366
Payback period:	1.7 years
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Background

Hatteras Yachts manufactures luxury yachts ranging in size from 54 to 130 feet. One of the final production processes is the application of a durable, high-gloss coating to the superstructure (hull, bridge, and deck).

Previously, the company used a high-solids paint which cured after being mixed with a catalyst. Before the painting operation, the paint was mixed with the catalyst in pressure pots. An excess quantity of paint was always prepared to ensure complete coverage of the exterior surfaces of the yachts. The paint was sprayed onto the yachts by a team of four or five painters and, because the yachts are large, the paint supply hoses were up to 100 feet in length. The lifetime of the coating mixture in the pots (before curing occurs) is two hours, and the tack time, i.e., the time for the applied coating to be dry enough to touch, is approximately five hours. On completion of the painting operation, the unused paint was removed from the pots, allowed to cure to a solid form, and discarded as waste. Also the pressure pots and fluid hoses were flushed with cleaning solvents. Thus, the painting and cleaning processes generated large quantities of paint and solvent waste.

Waste Reduction Activities

A new "Plural Component Paint Spray System" was purchased to produce a high-quality coating without the excessive waste products. Paint and catalyst are stored separately on a transportable cart. The two components remain separate until they are used in the spray gun; thus, the uncatalyzed paint does not cure in the fluid hoses, and the only painting equipment to be cleaned is the head of the spray gun. The gun is cleaned at the completion of the coating process by a fluid hose charged with solvent, which replaces the paint supply hose.

Waste Reduction

Only one cup of cleaning solvent is now required to clean the coating equipment after a painting operation. This amount represents a 95-percent reduction in the quantity of both the cleaning solvent used and solvent vapors released to the atmosphere. A decrease in the quantity of hazardous waste generated also resulted from the reduction in solvent usage. The reduction in the excess paint prepared for each process resulted in a 22-percent savings in the quantity of paint used, and, again, solvent emissions to the atmosphere from this reduction in paint were reduced by a similar amount.

Annual Savings

As the new coating process is less labor intensive, the company realizes savings in labor costs of \$4,263 per year. Total annual savings were calculated at \$21,366 per year. With a total project cost of \$37,045, the payback period is 1.7 years.

Other Activities

Not only does the new system eliminate the 2-hour pot life of the former catalyst-paint mixture, but the coating provides a finish of higher quality as airborne contaminants have less opportunity to settle on the painted surface while it is wet. Furthermore, orange peeling surface defects have not occurred as frequently since the installation of the new system.

Disadvantages identified with the plural component system are the initial cost, the limited number of colors available, and the bulk of the equipment.

Summary of Waste Reduction and Savings: Hatteras Yachts, New Bern, NC

Material	Quantity used in old system, gal/yr	Quantity now used, gal/yr	Cost Reduction, %	Savings, \$
Paint	1,200	936	22	9,293
Catalyst	300	234	22	5,623
Cleaning solvent	584	29	95	2,187