

# Cold-applied Mod Bit Selected for Factory That Never Closes

By Sarah Tholen

**W**hen Pratt & Whitney decided to replace the roof of its 170,000 square foot aircraft engine blade manufacturing facility in East Hartford, CT, engineers evaluated three alternatives. In the final analysis, they chose a cold-applied, modified bitumen system for its durability and application.

According to Bob Vassallo, project engineer for Pratt & Whitney, a single ply system was first considered and rejected for durability reasons since the roof area requires frequent modifications to accommodate ventilation exhausts. These are often moved from one area of the roof to the other as the manufacturing requirements on the shop floor are optimized to meet needs.

"We also considered a hot-applied roofing system, but there were a number of issues with that application," said Patrick McCarthy, Project Engineer with Pratt & Whitney. "We had material handling problems due to the location of the building and the space. It is practically impossible to shut down air intakes to control the odor from getting into the factory because it operates 24 hours a day."

Accordingly, the engineering team of Rajan Anburajan, Bob Vassallo, and Patrick McCarthy settled on a cold-applied, modified bitumen system with a 20-year, no-dollar-limit guarantee. "Cold-applied allowed us to handle materials in smaller quantities," said McCarthy. "We also liked the fact that the modified bitumen is manufactured in a controlled environment, therefore leaving less room for application errors."

The original, 40-year-old roofing system was a 4-ply cold tar and gravel roof with cork insulation. Hartford Roofing Co. Inc. of Glastonbury, CT, contractor on the job, removed the old roof and replaced it with Johns Manville's 2-1/2-inch E'NRG'Y 2™ polyisocyanurate foam insulation mechanically fastened to 1/2-inch DuraBoard™ insulation. Roofers then used a spray gun system to apply the adhesive, kept at 120 degrees by heaters. Next, a DynaBase® glass-reinforced SBS modified bitumen base sheet was installed, followed by a DynaKap® modified bitumen cap sheet. DynaFlex® was used for the flashings.

According to Herb Williamson, vice president for Hartford Roofing Co., the project presented a number of challenges for his crew, including project foreman Brad Roche and project superintendent and vice president of field operations, Mark Finan. In order to maximize the efficiency of the manufacturing operation, equipment had



been frequently moved, requiring new ventilation ducts. Accordingly, there were abandoned openings on the roof and abandoned equipment.

"We had to use a great deal of care in replacing the roof deck at the abandoned openings on the roof," Williamson said. "We could not let any dust or dirt get into the building because of the sensitivity of the manufacturing operation. It was necessary to hang plastic below the roof deck to catch the dust and debris."

People were also working in the plant seven days a week, 24 hours a day. This required careful scheduling. Despite the challenges, however, the project was completed in just slightly over two months with a 20-person crew working 10-hour days, six days a week.

Anburajan, Manager Facilities Engineer, complimented both Hartford and Johns Manville on their safety consciousness and quality workmanship. Tim King was regional technical inspector for Johns Manville. ■

## ABOUT THE COMPANIES

Hartford has six locations and more than 550 employees and is the second largest private, family-owned roofing contractor in North America, with 2002 sales projected to exceed \$75 million. Johns Manville, a Berkshire Hathaway company based in Denver, has sales in excess of \$2 billion and employs 9,500 people at 52 manufacturing facilities worldwide. Sarah Tholen is Advertising Manager with the Johns Manville Roofing Systems Group.