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Flying high

Western Roofing Service replaces the roof on a United Airlines maintenance facility

 by *Krista Reisdorf*

San Francisco International Airport has made clear its dedication to the environment. Its 2005 annual review provides examples of the airport's efforts, including increasing the number of airport vehicles that use clean power and reducing post-emergency pesticide and herbicide use.

So when United Airlines decided to replace the 20-year-old roof system on its maintenance facility—which had been experiencing leaks—at San Francisco International Airport, energy efficiency was an important factor. United Airlines also wanted a durable roof system that effectively would protect the daily operations inside the facility.

Western Roofing Service, San Francisco, a Tecta America company, was chosen to remove and replace the building's existing built-up roof (BUR) system.

Compliance

The maintenance facility's existing roof was 1,100 squares, and the roof assembly consisted of a metal deck and rigid board stock insulation covered with a BUR system and gravel. The existing roof was torn off in sections down to the deck.



Existing insulation was adhered directly to the steel deck.

United Airlines decided to install another BUR system because the existing system had performed well and resisted a considerable amount of service traffic. United Airlines chose a four-ply BUR with a gravel surface to cover the 110,000-square-foot area.

"We installed Johns Manville 3-inch-thick perlite insulation mechanically attached to the steel deck and a base ply of coated fiberglass felt, as well as three plies of Type IV felt—all adhered in hot asphalt," says George O'Neill, senior vice president of Western Roofing Service.



Mechanically fastening 3-inch-thick perlite insulation to the steel deck

"We spray-applied 5 gallons per square of Tremco Inc.'s solvent-based white Rock-It Adhesive and added 200 pounds per square of white roofing gravel, which provided United Airlines with a Title 24-compliant roof," he continues.

California's Title 24 states that to qualify as a cool roofing product, roofing products must be rated, labeled and certified according to the Cool Roof Rating Council's system. The maintenance facility's Title 24-compliant roof meets minimum 0.70 reflectivity and 0.75 emissivity ratings.



Photos courtesy of Tremco Inc., Beachwood, Ohio
Tear-off to the steel deck



Adhering three plies of Type IV felt in hot asphalt



Adhering base



Performing detail work on the drain

construction areas.

To address safety concerns, perimeter safety railings were attached to the side of the building using metal posts and steel cables.

ply in hot asphalt

Security concerns also were an issue. During the project, all workers and field personnel had to submit appropriate identification documentation to United Airlines and airport authorities before gaining access to



The finished roof system



Tarps protected operations inside the maintenance facility.

Because the project was being performed in a sensitive location, Western Roofing Service faced a special challenge.

"There was concern about interior protection during the project," O'Neill says. "Jet engines were being rebuilt below, and we had to make sure dust and debris did not fall below the roof system. To solve the problem, we worked with United Airlines facilities staff to install tarps daily beneath the deck sections where tear-off activity took place."

Something new

The energy-efficient project held some novelty for Western Roofing Service.



Spray application of the adhesive

"The installation of the white gravel and Tremco adhesive was a rather new process and one we never have used before," O'Neill says.

O'Neill says Western Roofing Service can be proud of a job well done.

"It was satisfying to see a completed roof system that met all the clients' requirements," he says.



The finished roof system

Krista Reisdorf is managing editor of Professional Roofing magazine.

Project name: United Airlines maintenance facility, San Francisco International Airport

Project location: San Francisco

Project duration: April 2006-August 2006

Roof system type: Hot-applied built-up roof system

Roofing contractor: Western Roofing Service, San Francisco, a Tecta America company

Roofing manufacturer: Tremco Inc., Beachwood, Ohio, and Johns Manville, Denver



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