

WEST ARCHITECTURAL

The magazine of the Western Architect & Specifier
JANUARY/FEBRUARY 2010 ■ \$3.50

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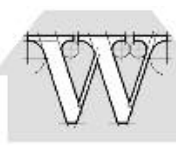
Cover Story



Whirlwind Installation

Whirlpool Distribution Center in Fredrickson, Wash.

by Dwayne Wacenske, thermoplastics marketing manager, Firestone Building Products



With several brands and a diverse line of kitchen, laundry, and home products, Whirlpool is one of the country's major suppliers of home appliances. The company is in the process of transforming its supply chain into a more agile, responsive, and efficient orga-

nization to serve its retail customers and consumers better. As part of this initiative, Whirlpool is building several large regional distribution centers, including a facility on 50 acres in Frederickson, Washington that features an 894,800-sq.ft. roof.

The LEED-registered project, developed by Panattoni Development Co., Sacramento,

Calif., and designed by Ware Malcomb, Irvine, Calif., is a concrete tilt-up structure that features 32' of clear height, 100 dock doors, and 60' staging bays, as well as two drive-in doors. In addition, a 50'-wide canopy approximately 450' long protects the docking bays from the region's inclement weather. In addition to the massive ware-

**THE WHIRLPOOL
DISTRIBUTION FACILITY
IN FREDRICKSON WASH.
BELOW, A WORKER USES
THE ACCUSEAM TOOL.**



The 40-year-old full-service contractor (and nine-time recipient of Firestone's prestigious Master Contractor award) is licensed in Washington, Oregon, California, Nevada, and Utah and focuses on commercial, industrial, retail, and warehouse projects.

us, having product available when we needed it, delivering it on schedule, and holding it back when necessary."

A mechanically attached Firestone UltraPly TPO roofing system featuring 10' wide panels was specified because of its light weight and ability to be installed quickly in cold weather. The reflective, white membrane also offered superior rooftop performance and energy-efficient qualities to assist the facility in earning points toward LEED Gold status.

"Historically we have used preassembled fasteners and plates for mechanically attached applications," said Guthrie. "Our guys are very comfortable with assembled screws and plates, and they have worked well for us for a long period of time."

So when the local field representative from OMG Roofing Products, Agawam, Mass., suggested that Wayne's Roofing consider using the AccuTrac and AccuSeam stand-up installation tools for the Whirlpool project, the initial answer was simply 'no

housing space, the facility also houses administrative space.

The roof is a low-slope (1/2:12) 22-gauge corrugated steel deck, with one layer of 3.55"-thick Firestone ISO 95+™ GL polyiso insulation and a 60-mil, white Firestone UltraPly™ TPO roofing membrane over the top. A parapet wall around the perimeter of the roof ranges in height from 1' at the peak to more than 8' over the office space. In addition, there are approximately 375, 4' x 8' translucent smoke hatches, a dozen large exhaust fans, and six, 20-ton air conditioning units on the roof.

Wayne's Roofing, Inc., Sumner, Wash., served as the project's roofing contractor.

Battling the Elements

The roof installation began in November 2008 and extended through the winter months. Facing the possibility of rain, snow, cold, and fog on a daily basis in the Pacific Northwest, the large project required a fast-track schedule in order to manage and service the client's needs and deliver a quality finished product.

"A project of this size requires immense coordination and patience, particularly at a time of year when weather conditions can completely alter the best laid plans," said Don Guthrie, president of Wayne's Roofing. "Firestone did an amazing job of supporting

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A WORKER FASTENING THE INSULATION TO THE ROOF DECK USING THE ACCUTRAC STAND-UP TOOL.

Whirlwind Installation

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thanks.' AccuTrac is a stand-up insulation attachment tool that aligns and installs the fastener and plate all in one motion. It is easy to use and operate; it does not require roof mechanics to kneel or bend while installing fasteners. But after evaluating the AccuTrac tool, reviewing productivity data, and understanding the health benefits of the ergonomically designed standup tool, Guthrie and Dan Johnson, vice president of operations for Wayne's Roofing, decided to use AccuTrac on the wide open 894,800-sq-ft. project. "Before Wayne's Roofing decided to use AccuTrac on this project, we trained their crews and helped them get comfortable with the entire AccuTrac system on a smaller job first," said Dan Genovese, productivity manager for OMG.

"A happy crew is a productive crew," said Guthrie, "plus, the pricing on AccuTrac screws and plates was more cost-effective and allowed us to be very competitive in our bid. The fastener and plate packaging is less bulky and easier to handle on the roof, and we saw great productivity from our crews on this project." For a project of this

magnitude, productivity was key. The 10- to 12-man roofing crew was able to install up to 265 squares of TPO membrane each day, and they became very comfortable with the stand-up tools. To maximize efficiencies, as one crew installed the polyiso insulation, another rolled out the Firestone UltraPly TPO membrane and fastened it in place so the seams could be welded. This process freed up several mechanics to handle the detail work on all the curbs and penetrations on the roof.

"One of the real benefits of this technology is the consistency of the installation," said Johnson. "The fastener is installed perpendicular to the deck and to the correct depth, so once you adjust the tool for the application, you don't need to worry about overdriving fasteners, which can be an issue on this type of project."

The roofing system was installed per FM Global requirements and included six fasteners per board in the insulation, and 12" on center membrane fastening. In total, Wayne's Roofing installed 170,000, 5" Firestone AP AccuTrac fasteners in the insula-

tion and 140,000, 5" Firestone HD fasteners with 2 $\frac{1}{2}$ " plates in the seams of the membrane.

"Our crews quickly became very comfortable with the stand-up tools," said Joe DiCarlo, project manager for Wayne's Roofing. "We saw great productivity gains, especially when you consider that half of the labor normally required to install fasteners can be reassigned to other tasks. The guys did a better job, had less back fatigue and strain, and we ended up with a better quality installation where each fastener was driven straight and to the proper depth."

The Whirlpool Distribution Center project was completed in May 2009. Despite the fast-track schedule, significant job size, and wintry weather obstacles, the crew was able to successfully finish the roofing installation on time, largely due to well-managed coordination among all parties involved and use of quality roofing systems. The AccuTrac and AccuSeam products also earned high marks by the crew and the project consultant alike, and Wayne's Roofing is already using them on its next big project. 