

# DUPONT BUILDING SCIENCE

## BULLETIN



## CASE HISTORY

### Tyvek® Protects Behind Old and New Masonry on Indianapolis Shopping Mall

Combining reconstructed, historic facades with a modern, urban shopping mall environment has earned the Circle Centre mall a place in retail architectural history. After months of restoration work, the fronts of eight historic Indianapolis buildings became part of the "skin" of the new mall, linking the city's past to 800,000 square feet of new retail space in the heart of downtown Indianapolis.

The ornate facades represent the city's history dating from 1867, and include the Art Deco look of the former Rose Jewelers, the cast iron front of the former Vagen building and the Chicago school design of the J.F. Darmody building. For the past 20 years historic groups have been disassembling, numbering and storing the facades as buildings were demolished or renovated.

The facades are significant because many of them are used as doors in and out of the mall. Getting the exterior facades to merge with the remaining structure of the mall's retail shops, restaurants and public spaces was complex.

"It took at least 20 different architectural schemes before coming up with one for the Vagen facade," said Dave Halvorson, an associate principal and project manager with CSO Architects, Engineers & Interiors.

*"Moisture problems with a porous material like brick are intolerable... We use Tyvek® for all of our stores."* — David Tilton, Collision Architects

The Nordstrom anchor store was a very large brick mass that project architects wanted to adapt to the historical approach. For Nordstrom architects, performance and cost variables were key to specifying products that would combine old and new building technology. Tyvek® was chosen instead of traditional building paper, to wrap the 208,000 square foot store. "With brick veneer, it's important to maintain the integrity of the wall system," said David Tilton of Collision Architects, Seattle. "Moisture problems with a porous material like brick are intolerable," he said. "We specified Tyvek® to cover metal studs and batt insulation under the brick facade. We use Tyvek® for all of our stores."



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Tests conducted by an independent laboratory for DuPont show that Tyvek® is 35% better in water holdout versus 10-minute Grade D building papers. Tyvek® is 14% better in resisting water than 60-minute building papers. Tyvek® holds back more than 210 cm of water under pressure, whereas both #15 building felt and 60-minute papers fail at 114 cm on average. According to Tilton, installation of the wrap is also a critical stage given the structural anchors and wall penetrations in the building design. Tyvek® was installed on the entire mall throughout pre-fabricated panels that averaged 10' x 10'. Installer Bill Pruitt, Vice President of Indy Walls & Ceilings, said a total of 48 rolls of 9' x 195' Tyvek® were installed on the various-sized panels right on the job site. The pre-fab panels consisted of 6-inch steel studs, insulation and foam sheathing board, after which Tyvek® was wrapped over the sheathing board and stapled or screwed in place. The completed panels were hoisted into place by crane

and welded together to form the wall structure. "The large, lightweight rolls of Tyvek® were easy to install," said Pruitt. "While the major reason for the wrap was moisture protection, there is no doubt the stores will have energy savings as well," he said. The wrap significantly reduces air infiltration, the major cause of insulation R-value loss.

The \$300 million Circle Centre mall occupies four city blocks and consists of two anchor stores, more than 100 specialty retailers, a multi-screen cinema, night clubs, themed restaurants, a food court, a parking garage and an eight-story tall glass dome dedicated to fine arts exhibits.



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