



PreVaill Transit™ Vinyl Upholstery Leaves Lasting Impression with BART

San Francisco Bay Area Rapid Transit (BART), the nation's fifth-busiest heavy rail rapid transit system, faced a huge challenge: the transit system's wool-covered seats, considered an attraction when BART began service in 1972, had accumulated stains and unbearable odors which had caused many complaints from riders. The hard-to-clean fabric also was a breeding ground for germs and bacteria and, with 370,000 riders weekly, needed to be replaced.

In an article published by the New York Times, a supervisor at San Francisco State University's biology lab analyzed the content of a random BART seat. Several types of mold and many different strains of bacteria were found on the seat, including three that were resistant to antibiotics. Even after the seat cushion was cleaned with alcohol, potentially harmful bacteria were found growing in the fabric. A clinical professor at the School of Public Health at the University of California, Berkeley, stated that the cloth seats allowed bacteria to flourish because they were difficult to clean and disinfect.¹

Working with LTK Engineering Services, a renowned rail services engineering consultancy, the BART team put a plan together to address the problem. They identified seating options that would improve appearance and germ resistance at a lower cost than their current wool seats. BART received input from the riding public on their seating material preferences, using twelve seating "laboratories" where the riders were invited to try sample seats and provide feedback.

The Issue

- BART's wool-covered seats looked, felt and smelled bad and needed to be replaced every three years
- Negative publicity raised awareness of high potential for germs to be retained
- High annual maintenance costs (cleaning and replacing seats)

The Solution

- OMNOVA Solutions' **PreVaill Transit™** vinyl upholstery with **PreFixx®** protective finish engineered for mass transit applications with excellent durability and cleanability
- Improved appearance, longer life expectancy, improved cleanability and lower cost

PREVAILL™
TRANSIT with **PreFixx®**





BART riders participating in a seating laboratory



Fabric, hard plastic and vinyl seats used in focus groups

Seating Laboratory Study and Evaluation

2,220 area residents participated in the study to evaluate three options – textile, hard plastic and vinyl seats. Many participants provided comments concerning seat materials for the new rail cars.²

“Fabric - somewhat comfortable, feels dirty.
Plastic - not comfortable at all, but clean.
Vinyl - most comfortable, feels clean.”

— BART rider

62% of the riders surveyed selected “loved the vinyl.”³ BART listened to their riders’ feedback, but still needed to do additional research.

62% of the riders selected: “LOVED the vinyl.”

Vinyl upholstery was further evaluated along with wool-based and synthetic fabrics. Materials were compared for their initial cost, expected life, annual cleaning costs and germ resistance.

In all categories, the vinyl upholstery was the clear winner. Compared to the current wool-based seats, replacing the seats with vinyl would save BART over \$500,000 in outside cleaning costs annually, and the seats would last 2-3 times longer.⁴ Furthermore, the cost to replace the seats with vinyl would be approximately 40% less than fabrics. Most important to the many riders who use their trains every day, vinyl upholstery performed significantly better with respect to bacteria resistance than the existing wool-based or newer synthetic fabrics.

A Winning Solution

BART’s research led to **PreVaill Transit** upholstery, engineered by OMNOVA Solutions specifically for mass transit applications. In addition to meeting flame, smoke and toxicity standards, it features OMNOVA’s legendary **PreFixx** Protective Finish, offering durability, stain resistance and easy cleaning.

A fresh design was needed for BART’s new seats. The vinyl substrate provided the perfect canvas for an intricate locally-inspired design. OMNOVA’s design team collaborated with an independent colorist hired by BART to create a custom Bay-centric design called *Water, Wine & Waves*, reflecting the San Francisco Bay, Pinot Noir wine and lines of activity.

Replacing the wool seat covering with vinyl covered seats would save BART over **\$500,000** in annual outside cleaning costs, and the seats would **last 2-3 times longer.**



Water, Wine & Waves, a custom Bay-centric design developed for BART

Switching to vinyl seating upholstery will save BART

1.5 million lbs of wool seat cushions and fabric from going into the landfills every three years!

PreVaill Transit - An Environmentally-Preferred Choice

San Francisco is well known for its sustainability initiatives. It was important to the BART team that all seating options be evaluated for their environmental footprint.

Switching from a wool-based seating which needed to be replaced every three years – including the cushions – to **PreVaill Transit** vinyl seats with an expected life of seven to ten years, would have a positive sustainable impact, eliminating 1.5 million pounds of waste to the landfill every three years.

Furthermore, the **PreVaill Transit** product required minimal maintenance in contrast to the current wool-covered seats. Cleaning the wool seats not only contributed to a significant annual expense, but also added increased chemical exposure from the chemicals and cleaners used on the fabric.

When manufacturing **PreVaill Transit**, OMNOVA Solutions uses environmentally-sensitive manufacturing processes. Committed to reducing its environmental footprint, OMNOVA formalized *Vision 2014* in 2008, an initiative focused on reducing the environmental impact of its manufacturing operations and increasing its offering of products with sustainable features. OMNOVA has set specific sustainability goals and put tools in place to help reach significant milestones by the year 2014.

OMNOVA has committed to putting an end-of-life reclamation program in place for the **PreVaill Transit** vinyl upholstery post-use. When the seats eventually need to be replaced, the material will be reclaimed by OMNOVA for other purposes.

BART Unveils New Vinyl Seats



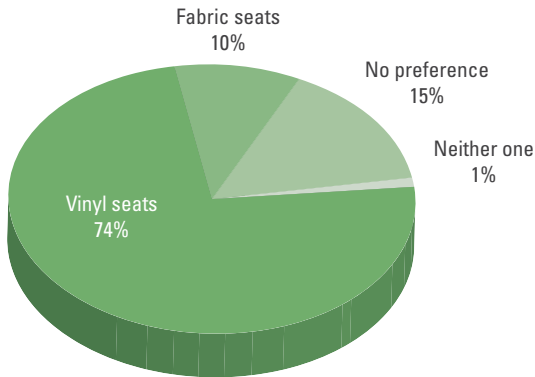
In early 2012, BART began replacing the existing wool seat covers with OMNOVA's **PreVaill Transit** vinyl upholstery. Train cars with the updated seats are being integrated into the existing fleet. BART conducted on-board surveys in these updated train cars, designated with a "New Seats On Board" decal, getting riders' feedback on the new seats.

“ The fact that OMNOVA is developing a plan to take the material back is huge! It shows that OMNOVA is forward-thinking and willing to do the right thing. ”

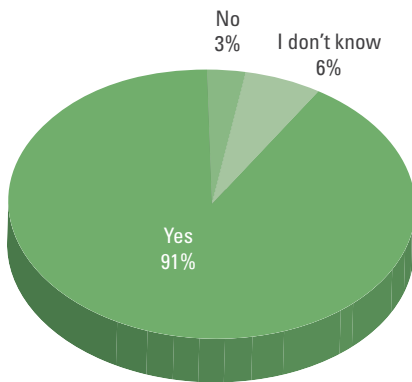
Rich Hollingsworth, LTK Engineering Services

Survey Feedback Continues to Be Positive

Results of the on-board surveys indicated that 93% of riders rated the vinyl seats as "excellent" or "very good" and 74% of riders preferred the vinyl seats over the fabric seats.⁵



Vinyl received more votes than the wool fabric on both overall appearance and comfort. When asked if BART should continue to replace the wool seats with vinyl because the vinyl is easier to keep clean, 91% of those surveyed agreed.



BART plans to continue their replacement of wool seats with vinyl seats and monitor public feedback.

If BART chooses to replace all of the fleet cars, it will save
\$20 million
over the remaining life of the vehicles.

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Sources

- ¹ Zusha Elinson, "On BART Trains, the Seats Are Taken (by Bacteria)," <http://www.nytimes.com/2011/03/06/us/06bcseats.html?pagewanted=all> (March 2011).
- ² "BART Railcar Fleet Cushion and Cover Assemblies," http://www.bart.gov/docs/Board_Vinyl_Seats_11.17.11.final.pdf (November 2011).
- ³ "BART Seat Labs Community Feedback," http://www.bart.gov/docs/Seat_Lab_Report.pdf.
- ⁴ "BART Railcar Fleet Cushion and Cover Assemblies," http://www.bart.gov/docs/Board_Vinyl_Seats_11.17.11.final.pdf (November 2011).
- ⁵ BART Marketing & Research, "Vinyl Seat Covers Survey Results," http://www.bart.gov/docs/cars/Vinyl_Seat_Survey_Results.pdf (May 2012).

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