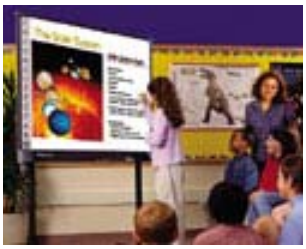
PolyVision

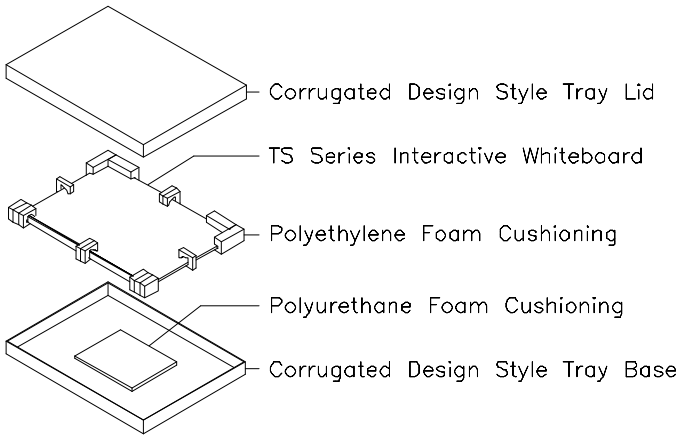
PolyVision, a Steelcase company, has a manufacturing center in Oregon that produces traditional whiteboards and innovative visual and interactive communication solutions for the education, corporate, government and military markets. PolyVision's goal of continuous product improvement and cost reduction has been extended to its packaging. By implementing a packaging optimization program, PolyVision was able to assess its product requirements with a focus on cost efficiency, inventory control, waste reduction, and environmental impact.

One of the packaging optimization program's successes has been with the PolyVision TS (Touch Sensitive) Series Interactive Whiteboard. The TS Series Whiteboard is a product that digitally captures and allows instant saving, publishing, printing, and emailing of white board notes. When used in conjunction with an LCD projector, the white board also has the capability of acting as an interactive projection screen.



The TS 600 was the first configuration targeted for packaging optimization. Approved changes would be phased in throughout the entire product line. PolyVision's goals for the redesign were to provide an equal or improved level of shipping protection, while simultaneously increasing packing efficiency, and reducing both packaging materials and overall costs.

Design #1 was the shipping package prior to the optimization redesign. It consisted of a double wall full telescoping design style tray with combination polyurethane and polyethylene foam interior.



Packaging Design #1

For the redesign process, PolyVision established a goal that any redesigned package would need to meet or exceed the baseline level of protection provided by the original packaging. In order to generate baseline testing data a series of drop tests were conducted. Testing was completed in accordance with the International Safe Transit Association (ISTA) Project 1J (Integrity Test for Individual Packaged Products Considered Flat) standards. Results from the drop tests were used by packaging engineers in an iterative redesign process. Design changes made to the packaging configuration were then tested in order to verify that the desired affect was achieved.

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- New “hinged” polyethylene foam was introduced into the design to reduce material usage, overall packaging costs, and inventory space needed to stage material prior to loading. The living hinge incorporated into this material allows it to ship flat and is set up just prior to use so it also saves in shipping volume. First stages of testing showed that the “hinged” polyethylene foam could be reduced from a 3 inch thickness to 2 ½ inches.

  Information on “Hinged” polyethylene can be found at the following manufacturer links:

  www.pactiv.com/Products_NA/ProtectivePackaging/EngineeredFoam/PolyPlankMDL.aspx

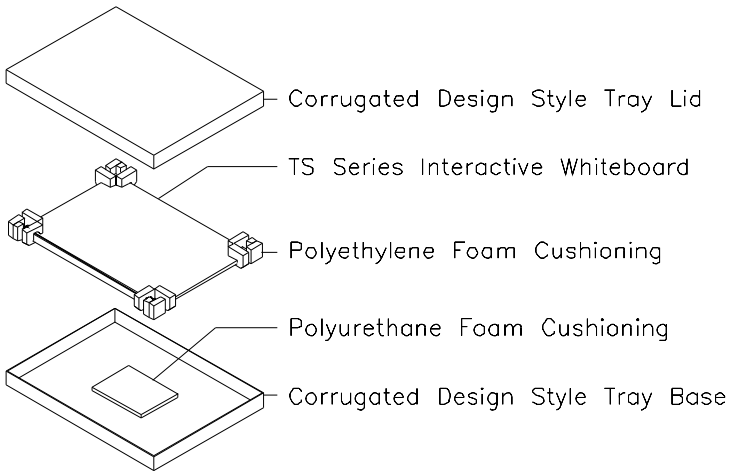
  www.sealedair.com/products/protective/pe_foam/stratocell_plus.html

- The polyethylene corner support pads in the redesigned package started out as a 1.2 pound density, but further testing found that this could be reduced further to a 0.9 pound density.

- The size of the polyurethane foam cushioning was reduced.

- Random density polyurethane foam was incorporated into the redesign. This allowed the foam supplier to utilize polyurethane fall off from other projects, which would otherwise have been recycled or thrown out. In this way, the supplier was able to avoid purchasing new foam.

After several revisions and subsequent drop tests, Design #2 was developed as the redesigned shipping package.



Packaging Design #2

Design #2 utilized the same outer corrugated shipping tray but reduced the amount of polyurethane and polyethylene used for product cushioning. A summary of savings can be seen in the following table. The savings shown for the polyurethane foam are based strictly on a size reduction of the foam cushion. Savings from using random density (scrap) foam is not shown.

	Design #1 (lbs)	Design #2 (lbs)	% Material Savings
Corrugated	14.34	14.34	-
Polyethylene Foam	2.2324	1.3431	39.84 %
Polyurethane Foam	0.5730	0.3438	40.00 %

Material Savings Summary

Design #2 has been approved and implemented as the current shipping package. PolyVision is looking to further reduce packaging material used in its TS series product line. Current testing of Design #3 is under way. It would reduce the depth of the corrugated carton and internal foam cushioning. This will further reduce the amount of corrugated and foam used, thereby increasing pallet efficiencies from 7 to 8 units per pallet or 14.3 percent. PolyVision continues to benefit from the optimization program in the form of reduced packaging costs, a smaller inventory of packaging materials, and a decrease in the amount of outgoing shipping waste.

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