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New Jersey's Milk Jug Bridge

The first bridge made entirely from recycled plastic has been constructed over the Mullica River in Wharton State Park, New Jersey. This single-lane bridge is a 42-foot long fire equipment access road, strong enough to support a fully loaded fire truck weighing 36,000 pounds.

Researchers at Rutgers University patented a process that creates a super-strong material from post-consumer plastics like polystyrene cups and polyethylene milk jugs. Through the process, two or more plastic polymers are melted together, resulting in a much stronger material than either of the polymers alone. This process creates plastic with enough strength and durability to be used as bridge I-beams, railroad ties, and decking—three of many applications.

The new bridge in Wharton State Park is virtually indestructible: it is not affected by water or weather, and it needs none of the painting and maintenance required of steel and wooden structures. It was completed in November 2002 and over time, sunlight and other natural elements will help the plastic form a thin protective coating and a finish that will help the bridge visually blend into the natural surroundings.

Designed by McLaren Engineering, this bridge is the first project that uses the Rutgers technology. It is constructed from large I-beams that are supported by posts and connected by smaller I-beams. The road surface consists of 3-inch thick tongue and groove decking material. The Polywood Corporation created all materials from a blend of polyethylene and polystyrene.

Rutgers' Center for Advanced Materials—via Immiscible Polymer Processing (AMIPP), the patenter of the process—is currently working on similar technologies to create advanced materials for automotive, aerospace, and biomedical applications, including a synthetic bone material that will promote tissue growth when implanted in the body.

For more information, go to Rutgers University Center for Advanced Materials via Immiscible Polymer Processing's Web site: <<http://www.amipp.rutgers.edu/index.html>>.

