

ATTAINABLE SUSTAINABLE



New London Crushing It with Recycled Glass

STORY AND PHOTO BY DAVID TIRRELL-WYSOCKI *Fiddlehead Contributing Writer*

Glass has become a dirty word in recycling. Factors ranging from a homeowner's recycling bin to factories in China have made it more expensive and almost impossible to properly collect, sort and recycle.

A New Hampshire-based recycling organization and some communities hope the crisis focuses attention on a practice they've already embraced: reusing discarded glass in place of gravel or sand. It's a system that preserves a natural resource, saves money on taxes and car repairs and improves the quality of roads and sidewalks.

Recycling glass is difficult because it's very easy to contaminate a load of a certain color with even a tiny amount of a different color or type of glass. In single-stream recycling – all recyclables in the same bin – it's easy to contaminate other

material with broken glass. In addition, China, a huge market for recycled trash, has imposed tougher restrictions, and a Massachusetts factory that bought tons of recycled glass closed this year.

In New London, Highway Department Director Richard Lee had a solution three decades ago. Instead of paying to truck glass to Connecticut, where loads were rejected if they contained a bottle cap or different colors, the town began crushing glass to use in place of sand and gravel. It's called processed glass aggregate, or PGA, which feels like course sand or gravel. You can work it in your hands and not get cut.

"We have been using the product for 30 years in road and building projects all over New London," he said.

The crushed glass replaced or was mixed with gravel as the

bed beneath the surface of paved roads, gravel roads, sidewalks and town highway garages. It replaced sand as fill at other projects.

The town put eight inches of PGA under a gravel trail overlooking Lake Sunapee. Lee walked the trail during mud season this year and found it bone dry – even a section that always was muddy.

That's nice for hikers. But the concept is even better for drivers who bob and weave to avoid muddy trenches or frost heaves – those ridges and canyons that develop in spring as road beds freeze and thaw daily. Unlike gravel or sand, PGA does not hold moisture, so it doesn't freeze and thaw, meaning there are fewer frost heaves and potentially fewer flat tires or wrecked auto suspensions and front-ends.

"It is less frost-susceptible than any sand or gravel in the state of New Hampshire," Lee said.

In addition to keeping glass out of landfills, PGA saves money. Lee estimates that for roughly every ton he uses, the town saves \$88 – \$76 not spent on landfill fees and \$12 not spent on gravel.

He used about 900 tons of PGA beneath new sidewalks last year. That's about \$79,000 in saved tax money. Plus, 900 tons of gravel stayed in a hillside somewhere.

A few other communities have used PGA, including Hanover and Warner. But generally, Lee said, it's a tough sell because even though the material is used beneath the road or sidewalk, and covered by asphalt, gravel or concrete, the perception is that crushed glass will cut tires or will not compact as well as gravel.

In Epsom, the Northeast Resource Recovery Association

(NRRRA) works to spread the word about PGA and coordinate other recycling issues for its 400-member communities. It works with five host sites in New Hampshire and Vermont, including Lee's New London operation, which processes glass from 15 communities.

Unlike New London or Warner, which complete their own road projects, many communities hire contractors, who typically are not familiar with PGA or doubt its effectiveness, said NRRRA Executive Director Michael Durfor.

"What we really need to find are communities that will use the glass once we crush it," he said.

The material also may have a bad rap because if used on a surface, and not covered, it can reflect headlights.

"It shines at night (in headlights) and everyone panics that they are going to cut their tires," Durfor said. "One town used it on a shoulder and the drivers saw it light up and freaked out and they have never used it again."

Durfor is encouraged that a developer plans to use PGA beneath a parking lot at a Manchester project, and he's constantly looking for new uses to help ease what he sees as a recycling crisis.

"I'm hopeful that we are going to sit down and make sure we have a system that works, and I think this will force us to do it," Durfor said.

Glass comes from sand, and Lee sees crushed glass as an almost biblical solution – sort of "from dust to dust."

"It was sand in the ground when it started its life," Lee said. "Why not use it as sand back in the ground when it finishes."

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