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Cascade entrepreneur sees a future in Styrofoam

Cascade entrepreneur sees a future in styrofoam By Lisa Towers Staff Writer • **lisa.towers@wcinet.com**

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Dave Rhomberg stands beside his model 315 shredding machine that sells for $6,000.

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Just when you were convinced that styrofoam was a terrible product for the environment, along comes chemist and entrepreneur Dave Rhomberg to tell you how great it is.

We have all heard that Styrofoam (EPS) is not recyclable, but according to Rhomberg, it makes great building material.

Rhomberg was previously a particle scientist and has worked for the Tennessee Valley Authority and the Vector Corporation in Marion. “As a chemist, I saw EPS as an extremely unique material,” said Rhomberg.

“It insulates. It has great density. It resists water and insects and lasts nearly forever. The same reason it is terrible in the landfill is the reason it is great in building material.”

Rhomberg said that styrofoam can be added to concrete to increase its insulation value.

Concrete with EPS can then be used to pour foundations. “Concrete has almost no insulation value. That’s the reason water condenses on it and then you get mold,” said Rhomberg. “If you have insulation in the concrete, you knock out the mold.” He said that mold is common in most basements.

EPS can also be used in streets and sidewalks. Concrete with EPS weighs less, saves trucking costs and is easier on blades in mixing equipment, he said. Substitution of styrofoam means less sand and gravel mining. Styrofoam in concrete is also more resilient and durable because it is crack-resistant and water resistant, said Rhomberg.

While Rhomberg is not the first to discover this, he believes he has created a superior product by shredding the styrofoam. He said the styrofoam industry began to manufacture beads as aggregate to mix with concrete. However, the aggregate quickly gained a bad reputation because of its texture. “Round and smooth is the worst thing to mix into a wet material,” said Rhomberg. “If somebody adds a little too much water, it destroys whole jobs.”

He compared the smooth beads to a bubble. “A bubble is the shape it is because it is the fastest way to get out of liquid.”

In comparison, shredded beads are not smooth, said Rhomberg. “They hold their place in water.” That’s why Rhomberg created a shredding machine and started his business, Enstyro, to manufacture and sell equipment.

But concrete is a tough industry to crack, according to Rhomberg. “It is a big, old industry that focuses on compression strength and wears it as a badge of honor,” he said. “In many cases they make concrete stronger in PSI (pounds per square inch) than is necessary for the job.”

While soiled food-grade styrofoam containers are not conducive to shredding, packing material is.

“Civilization needs to use up its materials,” said Rhomberg. One of the reasons styrofoam is not recycled is because its light weight and high volume means high shipping costs for a low return. He said that styrofoam can be melted down, but it produces an extremely cheap plastic.

Rhomberg has sold his machines to concrete companies, mortar companies, companies that produce packing peanuts and companies that shred the foam and turn it back into styrofoam products.

“I push concrete, though,” he said. “It’s upscaling the waste, making it serve us for many years and using it at its highest potential.”

Rhomberg said he tries to avoid pushing the green aspects of recycling styrofoam, because “green” doesn’t drive purchasing decisions. “You can push green all day, but you’re pushing uphill.”

In order for the concrete industry to become vested in the idea, it needs to be regulated first, said Rhomberg. It will take money to pay labs to test concrete properties. “Eventually my hope is that some sort of groundswell and obviousness of this will force the hand of government to do something,” he said.

Rhomberg is working on getting colleges involved so that the product's potential can be introduced to engineering students. He said that students at Chico State in Chico, Calif., and University of Louisville in Kentucky are using his product in a concrete canoe competition, for example.

Enstyro has been selling the machines for almost three years, and though sales are picking up, like any new business, it was slow to start. Rhomberg's wife, Jennifer, with whom he has four children between 8 and 14 years old, has been very supportive, he said. "She has picked up a lot of the slack."

Jennifer was a stay-at-home mom, but now works for Keep Collective and Thirty-one Gifts. "She's done real well and works very hard," said Rhomberg.

Because he is a chemist first and would rather stay in his lab on First Avenue in Cascade, Rhomberg said he could use a good salesman to pitch his equipment.