

# Glass: the new aggregate

Recyclers, aggregate suppliers, and WisDOT are working together to take advantage of a new raw material for roads: mixed glass. Between 35,000 and 45,000 tons are produced a year at Wisconsin recycling facilities. Cleaned, milled, and blended 10%, and possibly as much as 20%, with aggregate, the glass can be used economically and effectively as utility trench backfill and base course material.

"Outagamie County is now using a glass-aggregate mix in backfill," says Jeanine Knapp, who manages the Outagamie County Materials Recycling Facility. Under a Department of Natural Resources grant, the County Highway Department has also experimented with adding glass to asphalt mixes in some test pavements, a technology about which WisDOT pavement researchers have strong reservations.

A statewide working group plans to hold two demonstrations before the 1996 construction season ends, Outagamie County Recycling Facility Manager Jeanine Knapp says. These may show glass being used as backfill, base material, drainage medium, or in the lower layers of asphalt pavement. She hopes a number of Wisconsin's streets and highway people will be able to attend.

Having completed two research projects on glass use, WisDOT now encourages using it for base course and backfill material. A Supplemental Specification to the *Standard Specifications for Road and Bridge Construction* is nearly complete. Updated sections in the *Facilities Development Manual* describing glass and other recycled material use are due out soon.

One aggregate dealer, Valley Sand and Gravel in Muskego, is producing a "compacted bank run" material

that includes glass up to 1/2 inch in diameter. Before mixing the glass with the aggregate, the dealer uses screens to "beneficiate" or clean the mixed color glass, removing unwanted material like plastic or metal. "There will be no restrictions or tracking requirements when the material is used in accordance with approved specifications," says Kate Cooper, chief of the Waste Reduction and Recycling Section at the Department of Natural Resources.

Recycling facilities can sell color-separated clear, green and brown container glass, but there are limited markets for what is called "mixed color cullet." Some Wisconsin recycling facilities currently pay to have their mixed color cullet mechanically color sorted and beneficiated at a high-tech facility in Illinois. Other recycling facilities are stockpiling their glass and searching for local projects where glass can be used beneficially. Mixing glass with aggregate and incorporating it into trenches and road base courses is a good way to reuse these resources.

"As long as the glass-aggregate meets performance requirements and specifications we're happy to have contractors and municipal crews use it," says Steve Shober, Chief Pavement and Research Engineer at WisDOT.

*For information on the fall demonstration projects contact Jeanine Knapp, phone: 414/832-4710, fax: 414/788-4130. A performance report: Use of recycled glass in edge drain trench, #WI-03-96, is available from the T.I.C. Use the form on page 7, call, or e-mail for your copy. When the new specifications and Facilities Development Manual sections are ready they will automatically be sent to people who normally get those materials. Others can contact: Mark Truby at WisDOT, 608/266-9349, PO Box 7965, Madison, WI 53707-7965 to request copies after they are printed.*

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