



## King County Environmental Purchasing Program

### Tire-Rubber Material and Products

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#### Introduction

Used tires become raw material for the manufacture of an increasing number of products. Applications for shredded, ground, or chipped tires include products such as rubber mats, playground surfaces, lightweight fill, fuel and "soaker" hoses and other products.

#### Usage History and Experience

The county spent \$230,000 to retread tires for trucks and other heavy equipment at the Renton Maintenance Facility, Fleet Administration Division and Solid Waste Operations. This not only avoided landfill disposal of tires, but also saved the county approximately \$230,000 in new-tire expense in 2006, as retreading a tire is half the cost of buying a new tire.

Seventeen [recycled front-load bucket scrapers](#), made from post-consumer tires, are being used at two transfer stations. This product is more durable and costs less than virgin scrapers.

King County Fleet Equipment Shop has been using a [recycled rubber/plastic composite product](#) to line equipment trailer decks since 2001. This product, which replaces exotic hardwoods customarily used for this application, performs better than wood, provides a nonskid surface, is durable, and has recycled content. They use this product as a replacement decking and now require new equipment to be delivered with this material already in place, including one trailer last year.

#### Rubber Decking

King County now requires new trailers to be delivered with a "recycled tire flooring material." Following is a

specification from a recent bid for a trailer.

Shall be 1-1/2" recycled tire flooring material on the outer tilt deck area. Deck frame structure and crossmembers must be "engineered" by manufacturer to provide sufficient support of decking material, either by adding longitudinals or increasing crossmembers in track area. Rubber decking must rise above center deck and perimeter frame 1/2-inch. Manufacturer to provide decking support "engineering" with bid submittal. King County must accept final design before bid award.

Rubberized decking material on complete 16' tilt deck area. 2-1/2" x 2-1/2" x .120 cross members to be placed on a maximum of 8" centers.

Here are some pictures taken of a trailer with recycled tire rubber flooring that has been in place since 2001. Pictures were taken at the end of 2004. The decking still looks brand new.



### Rubberized Asphalt

Asphalt made with recycled rubber was used in an overlay project by Roads Division in 1998. It had been suggested that using "rubberized asphalt" might reduce traffic noise in this 6.3 mile overlay project. The project included noise measurement on the existing deteriorated concrete pavement, the new pavement with a typical asphalt surface, this surface laid on a "rubblized" base, and 3,600 linear feet (1,804 tons) of "rubberized asphalt." No significant differences in noise-levels were found between the asphalt surfaces, though all were quieter than the deteriorated concrete surface, with noise reduced from between 2.6 to 4.8 decibels. The cost of the rubberized section was approximately 35% higher than conventional asphalt. For more information about this project, please see the [product summary sheet](#).

### Other Recycled Rubber Products

#### Rubber Sidewalks

There is a company out of California called Rubber Sidewalks that manufactures modular sidewalks made with recycled tire rubber. This product has been used by several municipalities in California, as well as installations in the Eastern States. It was used in the [City of Seattle](#) in 2005 and is being evaluated by several jurisdictions in Washington State.

These modular recycled tire rubber paving system help municipalities save trees and eliminate trip hazards. To find out more, visit the [Rubber Sidewalks website](#).

#### Rubberized Asphalt

Several states have used recycled tires in pavement applications, which has noise reduction properties. Asphalt rubber is generally a mixture of 20% crumb rubber particles derived from the grinding of waste tires with 80% paving grade asphalt. Asphalt rubber is engineered to be