

Beneficial Use of Reclaimed Asphalt Grindings

Background

Reclaimed asphalt pavement (RAP) is a common term used for removed and/or reprocessed pavement materials containing a mixture of petroleum-derived asphalt and mineral aggregates (gravel and sand). It is generated when pavement from old roads, parking lots and driveways is removed for reconstruction or resurfacing. RAP can be broken up asphalt chunks or asphalt grindings. Grindings are typically less than 1 inch in size and produced by the mechanical grinding of asphaltic pavement surfaces. This factsheet is intended to address best management practices for the beneficial use of reclaimed asphalt grindings.

Environmental and Public Health Concerns

While broken up large chunks of old, weathered and consolidated asphalt pavement pose minimal risk of harm to the environment or public health, asphalt grindings may pose a risk because of potential exposure to newly exposed asphalt binder. If not managed appropriately, carcinogenic compounds contained in the asphalt binder (polycyclic aromatic hydrocarbons – PAHs) may pose human health and environmental concerns particularly when asphalt material is ground into small particles.



Asphalt Grindings Pile

Some tests have shown that these compounds do not leach from asphalt grindings, however, asphalt grindings contain small amounts of fine particulates that may include asphalt binder. Although there are no available extensive studies demonstrating whether or not asphalt grindings particulates cause harm to human health or the environment, DEQ recommends that asphalt grindings be managed to minimize the potential release of fine particles.

Recycling Asphalt Grindings

DEQ does not regulate asphalt grindings as solid waste when it is recycled back into new asphalt pavement and roads under specific conditions. (If these conditions are not met, asphalt grindings are solid waste and subject to DEQ solid waste regulations.) Both the aggregate and the asphalt in grindings are valuable, recyclable materials that can be recycled into new asphalt pavement surfaces, saving materials, greenhouse gas emissions, energy and money.



Asphalt Grinding Equipment

Permitting Exemptions

Oregon Administrative Rules (OAR) provide an exemption from solid waste permitting requirements for some uses of solid waste that are considered beneficial. The solid waste material must be used for a productive purpose and be managed safely under specified conditions of use. When asphalt grindings meet the criteria in the table below, it is exempt from solid waste permit requirements.

Solid Waste	Beneficial Use	Conditions on Use
(a) Asphalt pavement or asphalt grindings from road projects	As asphalt and aggregate in new asphalt pavement or as fill within road prisms	Asphalt grindings must be compacted when used within road prisms

OAR 340-093-0270(5)

Incorporating asphalt grindings into the production of new asphalt pavement is a very common practice. The Oregon Department of Transportation and many city and county road departments write specifications allowing and/or requiring new projects to incorporate asphalt grindings.

The use of asphalt grindings as fill or top dressing within road prisms is also common. For purposes of this factsheet, the road prism includes areas used for driving or storing vehicles, and associated embankments and



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structural support, e.g. parking lots, driveways, turn outs, shoulders, as well as roadways. Asphalt grindings used within a road prism are typically used under or within the roadbed surface, it is unusual for grindings to be placed out into the ditches. DEQ does not recommend using grindings as fill in ditches, if used in ditches the grindings need to be compacted as described in this factsheet.

Conditions on use

Asphalt grindings must be covered or compacted when used within road prisms.

Protections can be accomplished in two ways:

- 1) capping, covering or encapsulating the grindings or
- 2) compacting the grindings.

Placing asphalt grindings within the road, capped or covered by new asphalt paving or new gravel, is recommended by DEQ as the most protective practice.

However, compaction of asphalt grindings can reduce risks by using the adhesive properties of the asphalt to bind up the aggregate and harmful constituents.

Compaction must be accomplished by using standard compaction techniques, such as weighted rolling equipment, vibratory plate compactors or using the same equipment that would be used to compact aggregate for the specific application, at the time of lay down. Compaction by vehicle traffic is not an acceptable or sufficient method of compaction.

Generators of asphalt grindings must provide the following information (through written documentation, labeling, or other means) to users who intend to use the grindings in a manner other than making new asphalt pavement that identifies:

- The material as asphalt grindings;
- That asphalt grindings contains carcinogenic compounds - polycyclic aromatic hydrocarbons (PAHs) which may pose human health and environmental concerns, if not handled appropriately;
- That it is approved for use as fill in roads, parking lots and driveways under certain conditions; and
- Conditions of use - if the grindings are used as underlayment/fill, or exposed surface material in roads, parking/storage lots or driveways, then the asphalt grindings must be compacted with standard compaction equipment.



Compacted Grindings on Road Shoulder

For more information please contact a Regional Solid Waste Permit Coordinator:

Eastern Region: 541-298-7255 x221

Eastern Region counties include:

Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla (including Milton-Freewater), Union, Wallowa, Wasco, and Wheeler.

Northwest Region: 503-229-5263

Northwest Region counties include:

Clackamas, Clatsop, Columbia, Multnomah, Tillamook, and Washington.

Western Region: 541-687-7465

Western Region counties include:

Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, and Yamhill.

Alternative Formats

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