



**RECYCLED ASPHALT PAVEMENT AND ASPHALT MILLINGS (RAP)
REUSE GUIDANCE**

MARCH 2013
(VERSION 1.0)

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A. GENERAL INFORMATION

It is the policy of the New Jersey Department of Environmental Protection (Department or NJDEP) to encourage and promote the use of recycled asphalt pavement (RAP), including asphalt millings excavated from public highways and roads consistent with the provisions of N.J.A.C. 7:26 & 26A. The Department has determined that the allowed uses of RAP described in this guidance document are consistent with the provisions of N.J.A.C. 7:26 and N.J.A.C. 7:26A. This guidance document (“Guidance”) is intended only as a guide to address the controlled use of recycled asphalt millings and does not replace any regulations in any context.

RAP may be recycled pursuant to existing regulations at N.J.A.C. 7:26A-1.4(a)1 for recycling directly into hot mix asphalt pavement without the Department’s prior approval; reused directly for road construction without the Department’s approval as outlined below; and, used for beneficial uses pursuant to N.J.A.C. 7:26-1.1(a)1 and 1.7(g) respectively without or with site-specific Department approval, as outlined below.

B. DEFINITION OF TERMS

Allowed Uses: Allowed Uses shall mean Commercial Allowed Uses, Transportation Allowed Uses and Other Allowed Uses pursuant to Paragraph C(4) of this Guidance.

Child Care Center: means such a facility as defined at N.J.S.A. 30:5B-13 et seq.

Clean Site: A site that contains soil or non-soil materials that meet the definition of “Clean fill” at N.J.A.C. 7:26E-1.8 and the Residential Direct Contact Soil Remediation Standards (RDCSR) at N.J.A.C. 7:26D.

Commercial Allowed Uses: Commercial Allowed Uses shall have the meaning set forth in Paragraph C(3) of this Guidance.

Cover Material: Soil or non-soil materials that meet the definition of “Clean fill” at N.J.A.C. 7:26E-1.8 and the Residential Direct Contact Soil Remediation Standards (RDCSR) at N.J.A.C. 7:26D such as, but not limited to, recycled concrete, topsoil, unconsolidated sediment (sand, gravel, clay, silt, and the like), and rock obtained directly from a quarry. Cover Material does not include coal or other carbonaceous materials extracted from the earth.

Nonresidential: As used herein, the term "nonresidential" means for commercial, or industrial uses or other location of nonresidential use as defined at N.J.A.C. 7:26D-1.5 (definitions of "Nonresidential Direct Contact Soil Remediation Standard" and "Nonresidential Use").

Recycled Asphalt Pavement (RAP): Recycled asphalt pavement (RAP) shall mean asphalt millings (the material produced from the milling of roads before repaving) and pieces of asphaltic roadway pavement removed from the roadway surface or subbase, or from other

asphalt-paved surfaces such as parking lots. RAP does not include other Class B recyclable materials that contain recycled asphalt.

Residential: As used herein, the term "Residential" means a human residence, child care center, school, or other location of residential use as defined at N.J.A.C. 7:26D-1.5 (definitions of "Residential Direct Contact Soil Remediation Standard" and "Residential Use").

Transportation Allowed Use: Transportation Allowed Use shall have the meanings set forth in Paragraph C(2) of this Guidance.

C. ALLOWED USES

1. General Standards

- a. Unless otherwise approved in advance in writing by the Department in accordance with applicable State law, to the extent that RAP is used in Transportation Allowed Uses, such use shall be in accordance with the following NJDOT 2007 Standard Specification for Road and Bridge Construction (or subsequent version): Section 203 -- Embankments for roadways, Subsection 203.03.01, which allows use of RAP in I-14 soil aggregate embankment that is at least two (2) feet above the water table.
- b. A Transportation Allowed Use would be prohibited if site-specific engineered design requirements demonstrate unsuitable performance of the RAP.
- c. Unless otherwise specified herein, all Allowed Uses of RAP shall be fully consistent with appropriate engineering design (including the volume of material).
- d. RAP may be taken directly to and used by asphalt manufacturing plants for direct incorporation into hot mix asphalt or warm mix asphalt, in accordance with NJDOT standards, pursuant to the recycling exemption for such use at N.J.A.C. 7:26A-1.4(a)1.i and (b).
- e. Any use of RAP under slabs of concrete at any site requires the filing of a Deed Notice identifying the location, quantity and amount of the RAP; installation, operation and maintenance of a complete vapor barrier; compliance with the Department's Vapor Intrusion Technical Guidance; compliance with all local building code and zoning and other requirements. This use of RAP is strictly limited to use under the slab. RAP at the site that cannot be consolidated to the area under the slab must be removed and managed as RAP in accordance with this Guidance or disposed as Solid Waste.

2. Transportation Allowed Uses (Nonresidential Sites)

- a. Subject to the conditions set forth herein, RAP may be used in nonresidential roadway transportation and/or construction-related activities and under nonresidential building structure slabs that are unoccupied except for infrequent, short-term visits of employees or other persons (such as at salt storage or

transportation equipment storage buildings, hereinafter “Transportation Buildings”), without the Department’s prior site- or project-specific approval (“Transportation Allowed Uses”). These uses are considered direct use pursuant to N.J.A.C. 7:26-1.1(a)1 and do not require authorization as a Beneficial Use Project by the Department pursuant to N.J.A.C. 7:26-1.7(g) when performed as outlined below.

- b. Except as set forth in Paragraph E(8) of this Guidance, RAP may be used for roadway and parking area soil aggregate subbase material, if the RAP is placed directly beneath, and fully contained by a paved road surface of either hot mix asphalt or Portland cement concrete.
- c. RAP may be used to construct or repave roadway or vehicle use areas, such as parking lots and pot-hole filling, if such application is performed when the material is sufficiently hot to make the asphalt sufficiently pliable and adhesive to bind the asphalt millings particles on application. Alternately, RAP may be thoroughly mixed with an asphalt emulsion to produce a cold mix. These applications of the RAP should be followed by immediate rolling to complete the integration of the milling pieces and particles into a bound surface that is similar in consistency and performance to a hot mix asphalt or warm mix asphalt paved surface, such as a road. Rolling the surface will permanently rebind the RAP particles into a slab to prevent erosion and will ensure a dense, flat paved surface suitable for vehicular use.
- d. RAP may be used as surfacing materials if an appropriate binder is applied to bind the RAP. Liquid asphalt emulsion may be used to bind the RAP in surficial applications.
- e. RAP may also be used for the following, subject to the requirements of Paragraph C(2)(d) to the extent that RAP is used as surficial material and subject to Paragraph C(1)(b), as applicable:
 - (i.) Roadway edge stability and guard rail base material provided that the use complies with Paragraph C(2)(d) of this Guidance.;
 - (ii.) Base material (such as NJDOT I-14) under impervious surfaces, such as footings, foundations and slabs of Transportation Buildings.;
 - (iii.) Pipe, utility corridor bedding material above the seasonal, high ground water level covered with Cover Material, of a composition, characteristic and thickness that will prevent exposure of RAP at the surface. There shall be no visible RAP at the surface or at the perimeter of the application of Cover Material over RAP. The Cover Material layer shall be maintained to prevent RAP migration to the surface and perimeter.
 - (iv.) Component of boulder/stacked concrete wall structure;
 - (v.) Underpass abutment structures; and

(vi.) Stabilized wall structures, abutment fill, and retaining wall backfill material.

- f. RAP may be covered with Cover Material, of a composition, characteristic and thickness that will prevent exposure of RAP at the surface. There shall be no visible RAP at the surface or at the perimeter of the application of Cover Material over RAP. The Cover Material layer shall be maintained to prevent RAP migration to the surface and perimeter.
3. **Industrial and Commercial Applications — Nonresidential uses only (“Commercial Allowed Uses”)**
- a. Building Foundations — except as set forth in Paragraph E(3), RAP may be used in subbase material placed under concrete slabs for nonresidential building structures in accordance with an appropriate engineering design and Paragraph C(1)(e) of this Guidance.
 - b. Other uses as approved by the Department per N.J.A.C. 7:26-1.7(g), such as at Clean Sites without prior construction, on a case-by-case basis and in accordance with an appropriate engineering design pursuant to Paragraphs E(3) and C(4) of this Guidance.
4. **Other Allowed Uses**

Other uses of RAP may be authorized pursuant to regulations at N.J.A.C. 7:26-1.7(g) for beneficial use of materials (“Other Allowed Uses”). Contact the Beneficial Use section of the Bureau of Landfill and Hazardous Waste Permitting, Solid and Hazardous Waste Management Program at (609) 984-6985 for more information on the authorization process for a Certificate of Authority to Operate a Beneficial Use Project for RAP beneficial use applications. An application form for a Certificate of Authority to Operate a Beneficial Use Project, along with other information concerning the regulation of beneficial use of materials in New Jersey, can be found within the internet web page for beneficial use at: <http://www.state.nj.us/dep/dshw/rrtp/bud.htm> .

D. STORAGE: RAP for Transportation Allowed Uses, Commercial Allowed Uses and Other Allowed Uses shall be stored in compliance with all applicable laws.

E. PROHIBITED USES

The following uses of RAP are prohibited, except as provided below:

- 1. As final surfacing material, unless the RAP is bound with asphalt emulsion, or paved with hot mix asphalt or Portland cement concrete;
- 2. In wetlands, flood fringe, floodways or buffers to these regulated areas, unless such use is in conjunction with the repair, maintenance, or replacement of an existing vehicular paved surface, roadway or parking lot, and is undertaken in accordance with the requirements of the Freshwater Wetlands Protection Act

(FWPA), Flood Hazard Area Control Act (FHACA), and the regulations promulgated pursuant to these statutes;

3. As fill material at any Clean Site, except as authorized by the Department in writing in advance on a site- or project-specific basis, or as outlined for specific instances in Section C above;
4. Use in the reclamation of quarries of unconsolidated materials (e.g., sand, gravel);
5. Use in the reclamation and restoration of bedrock quarries unless specifically approved in writing in advance by the Department and in accordance with all relevant permit and other regulatory requirements;
6. Use as fill material, except for uses as provided for by this guidance in accordance with State law.
7. Less than two (2) feet above the seasonal high water table at the site of placement.
8. Use as roadway subbase in projects that must meet NJDOT specifications.

F. ENVIRONMENTAL AND PUBLIC HAZARDS

The bitumen binder used in asphalt paving applications contains a relatively high concentration of a family of organic compounds that has the potential to pose human health and environmental concerns in certain circumstances, especially when asphalt material is ground into very small particles that easily blow off of or wash from the surface. These compounds, known as polycyclic aromatic hydrocarbons (PAHs) are present in RAP at higher levels than the criteria established by the NJDEP's Site Remediation Program guidance for general use in a loose fashion on land. RAP used alone without a paved top surface has the potential to significantly migrate from the roadway through the actions of water, wind, and physical displacement and possibly contaminate surrounding soils and/or surface water sediments. Traffic traveling on the unpaved RAP could generate dust containing the compounds referenced above and the dust would be a major migration route of the RAP to the surrounding environment.

G. VEHICLE REQUIREMENTS

Note that a NJDEP solid waste vehicle registration pursuant to N.J.A.C. 7:26-1 et seq. for vehicles hauling RAP is not required for the transport of RAP for uses meeting the conditions of Section C and D above, to NJDEP-approved recycling centers or for Department-approved beneficial uses. However, a NJDEP solid waste vehicle registration is required for vehicles hauling RAP if the RAP is being disposed of as solid waste pursuant to N.J.A.C. 7:26-1 et seq. either in or out of State.

H. COMPLIANCE WITH OTHER LAWS AND REQUIREMENTS

Nothing contained in this guidance document is intended or shall be construed to exempt any use of RAP from compliance with other applicable lawful State and federal requirements and as subject to N.J.S.A. 13:1E et seq. and shall not supersede any applicable statutes or regulations.

This guidance does not represent an authorization to use RAP without obtaining site or project-specific authorization as a Certificate of Authority to Operate a Beneficial Use Project pursuant to N.J.A.C. 7:26-1.7(g), except for the uses as indicated above in Section C.2. Failure to obtain proper Department approval as required by State law prior to using RAP, except for the uses indicated in Section C.2 above may subject the responsible party to enforcement action, including, but not limited to the assessment of penalties and responsibility for any necessary remediation. This guidance shall not affect the Department's ability to pursue ongoing enforcement actions regarding the use of RAP or initiate enforcement actions against entities for past uses of RAP that are not in conformance with the provisions of this guidance document or applicable regulations.

Should you have any questions regarding this guidance document, you may discuss your questions with a representative in the Technical Assistance unit of the Bureau of Landfill and Hazardous Waste Permitting at (609) 984-6985 between the hours of 9:00 a.m. and 4:00 p.m.