DES
DEPARTMENT OF ENVIRONMENT AND SUSTAINABILITY
air quality | desert conservation PROGRAM | sustainability

Guidance: Specifications for Alternative Asphalt Paving

Alternative asphalt paving is an economical form of asphalt approved by DES to help landowners reduce the expense of traditional paving. In order for it to work properly, however, owners must complete the preparation and application process in accordance with the instructions below. This method may fail if the subgrade and base material are not prepared correctly, or if the wrong type or amount of SS-1H asphalt binder (or equivalent) is applied. The site will then not meet Division of Air Quality (DAQ) standards for compliance. DES therefore recommends using a licensed contractor knowledgeable in grading and asphalt preparation for this process.

Alternative asphalt paving is approved for use on storage yards and parking lots associated with businesses (such as construction companies) that require paved storage and parking areas. It is also approved for parking lots used temporarily for special events (such as Christmas tree lots). It is not approved for commercial use in areas where the public has access or is allowed to park vehicles.

Owners who choose to use alternative asphalt paving must have written approval from DAQ before starting the process, and must maintain the paving to the specifications and maintenance requirements in this guidance. In situations where alternative asphalt paving is not suitable, owners must use traditional hot asphalt concrete or concrete with a minimum base of 2 inches.

A. Preparation and Application

1. Prepare the subgrade surface for positive drainage, making sure the surface is smooth and compacted. Add material as needed to ensure the subgrade is smooth, without divots or surface indentations.

2. Process rotomill chips or reclaimed asphalt pavement (RAP) in a separate place to protect the subgrade area. Ensure the rotomill chips or RAP are at or above the optimum moisture content (i.e., very wet).

3. Using a blade or laydown machine, lay the material for the desired uncompacted thickness in one pass: for example, 5 inches of uncompacted material for a 3-inch compacted base.

4. Compact the rotomill chips with a Dynapac CC-50 (or equivalent) steel wheel vibratory compactor as described in steps A & B below. **Do not use rubber-tire compactors, which will compromise the subgrade with the amount of water being used in the rotomill chips**. Because the steel drum of the compactor has a tendency to bridge over low spots, it is important to follow Step #1 (subgrade prep) precisely.

   (A) The compactor roller has to vibrate enough to bring the water to the surface. There must be enough water on the surface that material does not stick to the steel drum.

   Note: Do not add water to the surface of the material before compaction; it will wash the fines to the bottom of the compacted surface, which will make it look like a large rock pocket. If this happens, the rotomill chips or RAP must be re-processed to get the fines back to the top.

   (B) Roll the material until the fines are consolidated and brought to the surface, creating a sheen. Roller passes must run the full length of the paving area to avoid roller marks.

   Note: If possible, do not run the blade over the grade again. However, if this becomes necessary, it must be done while the water is still on the surface of the compacted area and the millings are still malleable. Immediately re-compact.

5. Do not disturb the surface for 3–5 days so it has time to dry. Any rubber-tired equipment driven on the new alternative asphalt area before the finish grade dries will leave tire marks/ruts. Rock pockets will be obvious because they will be loose and un-compacted, and any rock pocket areas will have to be repaired. **No compaction testing is required.**

6. Once the surface is dry, spray **SS-1H asphalt binder** (or equivalent) at an application rate of:

   - **Option 1:** A 50–50 mix of SS-1H asphalt binder (or equivalent) and hot water at a rate of $6/10^{th}$ of a gallon per square yard. Stay off the lot until the asphalt binder cures. This will take 2–4 weeks depending on ambient temperature.
   - **Option 2:** A 50/50 mix of SS-1H asphalt binder (or equivalent) and hot water at a rate of $3/10^{th}$ of a gallon per square yard. Stay off the lot until the asphalt binder cures. This will take 2–4 weeks depending on ambient temperature. Apply another $3/10^{th}$ of a gallon per square yard over the first application, with another 2–4 weeks required to cure depending on ambient air temperature.

IMPORTANT

The SS-1H asphalt binder (or equivalent) must be fully cured (2–4 weeks) before the lot can be striped (duration will depend on the ambient temperature). The binder only protects the surface of the compacted base; it does not blend with the material. The weight of the equipment that will be stored/driven on the lot must be taken into account when determining the thickness of the rotomill chips or RAP: **for example,** a 3-inch thickness may be sufficient to park cars and light-duty trucks, but it will shatter under the weight of a semi-trailer truck or loader.

B. Maintenance

Maintain the alternative asphalt pavement to the specifications in Section A. Immediately repair worn or damaged areas. Paving must be maintained in a sealed condition using the SS-1H asphalt binder (or equivalent).