



## CARE AND MAINTENANCE OF AN ASPHALT DRIVEWAY

### **DESCRIPTION**

Asphalt (Blacktop) Driveways are constructed using Hot Mix Asphalt (HMA) which is a mixture of Asphalt Cement (the binder) and aggregate (sand, gravel and/or rock) mixed in prescribed proportions in a Hot Mix Asphalt Plant, hauled to your site in trucks, placed and compacted on a prepared base and/or subgrade.<sup>(1)</sup>

### **CARE**

#### **a) Surface Distortion**

Asphalt cement, which is the glue that holds the HMA together, is a thermoplastic material which gets harder as the ambient temperature goes down and gets softer as it goes up. HMA mixtures are also designed to be flexible to minimize cracking which results in low strength under concentrated continuous loading. For these reasons, care should be exercised in the use of HMA pavements, particularly early in the life of the pavement, for example:

- 1) Motorcycle or bicycle kickstands and dolly-wheels for trailers should be placed on blocks or pads to prevent indentations into the pavement surface.
- 2) Care should be exercised in turning vehicles with power steering while the vehicle is stationary as surface scuffing may result.

#### **b) Spills**

Asphalt Cement is a byproduct of the distillation of crude petroleum and is soluble in other petroleum products or fuels. Care should be exercised to prevent spillage of gasoline, motor oil or other products that would damage the HMA surface. If a spill does occur, immediate action is necessary to prevent permanent structural and/or aesthetic damage to the driveway surface. Steps include:

- 1) Use absorbent material to remove excess spilled substance and dispose of appropriately,
- 2) Flush the surface with water from a hose to wash away and/or dilute the product spilled,
- 3) Use a household detergent with degreaser and a brush with nonmetallic bristles to thoroughly scrub the spill area and then re-rinse with water.

### **MAINTENANCE**

HMA pavements that are properly designed and constructed should not need maintenance for a number of years. Potential maintenance consists of three types of activities:

**a) Crack Sealing:** In cold climates, pavements shrink as temperatures decline and at some point may crack. New materials and processes have been developed to minimize this type of cracking but it is still possible to occur at some level. Cracks in and of themselves are not a serious problem until deterioration occurs with time. The rate of deterioration can be reduced by sealing the cracks with various materials but the cost-effectiveness of this process is variable.

**b) Seal Coating<sup>(2)</sup>:** Seal coating is a process where the surface of the driveway is coated with a layer of asphalt or of asphalt with a cover aggregate. Seal coats are most effective in preventing or halting deterioration of the HMA pavement surface from raveling, which is a separation of the asphalt coating from the mineral aggregate in the HMA. Deterioration should not occur with a well-designed and constructed HMA driveway, thus minimizing the benefit of a seal coat as a maintenance tool. If a seal coat is desired for aesthetic purposes, an application of a dilute asphalt emulsion is the most cost-effective treatment. **Products containing non-compatible materials such as coal tar should not be used.**

**c) Overlays:** The most cost-effective maintenance of an HMA driveway is to place a thin HMA overlay in the distant future.<sup>(3)</sup>

### **REFERENCES**

- (1) - Asphalt Paving Design Guide, [www.asphaltisbest.com](http://www.asphaltisbest.com)
- (2) - FAQ Subject Areas, Surface Treatments, [www.asphaltinstitute.org](http://www.asphaltinstitute.org)
- (3) - Hot Mix Asphalt (HMA) as Surface Treatment, [www.asphaltisbest.com](http://www.asphaltisbest.com), "Resources"