

# Management of AGGREGATE STOCKPILES

*The number and size of aggregate stockpiles at an asphalt plant will vary from site to site, depending on the distance from aggregate sources and the variety of asphalt paving mixes being produced. However, the same basic principles of stockpile management apply at every plant site.*

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## Benefits of Good Stockpile Management

- Lower drying costs (reduced fuel consumption, lower emissions)
- Increased production capacity
- Decreased material loss
- Improved quality control results
- Reduced contamination
- More consistent gradation



## Consequences of Poor Stockpile Management

- Segregation
- Contamination
- Higher moisture content
- Possibility for out-of-tolerance gradation or volumetric properties

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## Basic Principles of Stockpile Management

### Grade and Pave Beneath Stockpiles

Fuel consumption is the most significant cost of producing asphalt paving mixes. Generally, for every percent of moisture *decrease*, fuel consumption will *decrease* by 10% and production will *increase* by 10% to 20%. While there have been significant advances in equipment technology to lower the cost of drying aggregate, in many cases the most cost-effective way to reduce drying costs is to drain moisture from the stockpiles or keep it out.

To reduce the moisture in stockpiles:

- Slope the surface beneath stockpiles 2% to 4%.
- Pave the sloped surface beneath stockpiles.
- Cover the stockpiles, particularly finer products.

To further reduce the moisture in the aggregates transferred to the feed bins:

- Remove aggregates from the stockpile several feet above ground level.
- Don't drop the bucket to the ground and scrape it along the ground into the stockpile.

### Communicate Stockpile Layout

As with most any management process, the better the communication, the better the process. Communication between suppliers, QC personnel, plant operators, loader operators, and delivery drivers is essential for good stockpile management.

Consider the following:

- Hold an annual meeting with all parties involved in building stockpiles.
- Place signs to identify each stockpile.
- Obtain QC data from each supplier on a regular basis.
- Ensure that QC personnel maintain contact with suppliers, drivers, and loader operators.

### References

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### Minimize Segregation and Contamination

Segregation in stockpiles is a leading cause of segregated and poor performing asphalt paving mixes.

The following guidelines will help minimize segregation and contamination of stockpiles:

- Place aggregates on solid, draining surfaces.
- Construct stockpiles in horizontal lifts.
- Keep pneumatic-tired equipment off stockpiles.
- Lift and place material with front-end loader.
- Avoid pushing material up and/or off ramps.
- Unload trucks opposite the working face of the stockpile.
- Keep stockpiles separated with distance or walls.



### Impacts

- Reducing moisture content reduces the cost of producing asphalt paving mixes and increases plant capacity.
- Increased plant capacity and efficiency can shorten plant operating time for the same daily production levels, or allow for higher daily production levels.
- Minimizing stockpile segregation and contamination will reduce mix variability (which often results in decreased pay).
- Reducing fuel consumption reduces plant emissions.
- Reducing material losses reduces the consumption of natural resources. **AP**

This article is designed to provide information of interest to the asphalt pavement industry and is not to be considered a publication of standards or regulations.

