The use of shingle byproduct from the manufacturing process in hot-mix asphalt offers the potential for economic savings. There are many factors that impact economics, and experiences may differ, depending on individual circumstances. This fact sheet addresses some commonly asked questions about the economic benefits of using shingle byproduct in hot-mix asphalt.

**Q: Why can using shingle byproduct result in cost savings?**

**A:** The use of shingle byproduct in hot-mix asphalt can reduce the overall cost to pave a road because shingles, which consist of about 40 percent asphalt, offer one cost-effective alternative to virgin asphalt and aggregate used in paving projects.

The costs for virgin asphalt and aggregates throughout most of the country continue to rise. That cost varies, depending on your location and the relative availability of virgin asphalt and virgin aggregates.

**Q: What factors influence the cost?**

**A:** There are costs involved in processing shingle byproduct that include equipment and labor to efficiently grind the byproduct, transportation, and storage.

**Q: What is Minnesota’s experience with economic savings?**

**A:** The use of shingle byproduct in hot-mix asphalt is relatively new in Minnesota. Public and private organizations recently began using the material in mixes for roads and parking lots (see Case Studies fact sheet). While there has been extensive market development and research in Minnesota, there is not extensive data about cost savings.

Bituminous Roadways, Inc., Inver Grove Heights, Minn., and Allied Blacktop Corp., Eau Claire, Wis., are two producers of hot-mix asphalt with shingle byproduct. Representatives of Bituminous Roadways and Allied Blacktop estimate savings at approximately $.50 to $1 per ton of finished hot-mix asphalt, which typically costs about $17 to $20 per ton for some grades.
**Q: What are national estimates of economic savings?**

**A:** In January 1997, the National Asphalt Pavement Association published a special report, *Use of Waste Asphalt Shingles in Hot-Mix Asphalt: State-of-the-Practice*. The report concluded that cost savings using 5 percent shingle byproduct in hot-mix asphalt range from between $1 per ton to $2.80 per ton.

**Q: Why do estimates of cost savings vary?**

**A:** Many variables come into play when estimating possible cost savings. Those variables include the grade of hot-mix asphalt produced, the cost for virgin liquid asphalt and alternative aggregates, landfill tipping fees, and the capital cost of equipment, as well as acquisition, processing, and handling expenses.

“Savings are relative, and largely relate to the price of liquid asphalt cement (AC),” according to a second National Asphalt Pavement Association (NAPA) report, based on a series of presentations at NAPA’s seminar Reclaimed/Reprocessed Materials in Hot-Mix Asphalt, in September 1999. Written by C. Jackie Williams, the article, “Interest Mounts in Recycled Roofing Shingles: As Savings Accrue to Producers, Landfill Space is Saved,” indicates that if the price of liquid AC is high, shingles offer a greater potential for savings.

**Q: What do the differing cost savings figures mean?**

**A:** It’s important to note that the use of shingle byproduct can result in economic savings. In any individual case, it’s smart to request estimates for producing hot-mix asphalt with and without shingle byproduct. In addition, don’t forget to factor in the environmental benefits of keeping shingle byproduct out of local landfills.

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