GAF DuraShield
High Performance Pavement Coating

Maintenance Impact Report

Keep roads performing longer for less

The clearest gauge of road condition is PCI — the Pavement Condition Index. Over the life cycle of the pavement on a local road, DuraShield SR can help maintain a higher average PCI at a lower cost than leading asphalt-emulsion maintenance treatments. Using DuraShield SR pavement coating can increase PCI immediately upon application, help maintain the road longer, and reduce the frequency of future maintenance by preventing asphalt pavement breakdown.

Over time all roads deteriorate and eventually fail.

Using DuraShield SR for pavement preservation, successive coating treatments maintain the local road at a "good" to "very good" level, extending that road's useful life.

- Use of high quality resin and epoxy fortifier provides for reduced loss of fines, and better adhesion, compared to asphalt-emulsion-based maintenance treatments.
- Reduced comparable raveling and binder aging than leading asphalt-emulsion maintenance treatments due to reduced UV and heat damage via solar reflective pigmentation. Validated by ASU testing.
- Reduced water penetration into pavement layer than leading asphalt-emulsion maintenance treatments, slowing asphalt oxidation and minimizing thermal cycling damaging effect.

The scenarios on the next page are based on the following assumptions:

- **Comparative weather and wear durability** testing conducted by the National Center for Asphalt Technology using wet three-wheel polishing tests for 20+ years of simulated life.
- **Projected over 55 years**, starting with a newly paved asphalt road subjected to <800 ADT (Average Daily Traffic) with 90 percent being light vehicles and 10 percent being trucks, in an environment that has 260 days with solar radiation at solar noon >600 W m^2, 30 days of precipitation >0.2 cm day-1, and 45 days <32 degrees Fahrenheit.
- **Pavement Condition Index** (PCI) is calculated using ASTM 6433-18 on an annual basis in the scenarios.
- **Total cost of maintenance** was calculated over the 55-year life cycle of the road before total replacement. It assumes a 12'-wide lane and includes all material and application costs implemented in service of maintaining the road, including crack filler, utility patch repairs, pothole repairs, 1.5" mill and repave, and application of asphalt-emulsion maintenance treatments OR DuraShield SR. Materials employed for crack filler, utility patch repairs, and pothole repairs were assumed to be equal.
- **Assumed costs for asphalt-emulsion maintenance treatment materials ($2.50–$3.75/yd.)** were taken from the Pavement Preservation and Recycling Alliance (PPRA, ppraportal.com/) which employed a cost survey conducted by an impartial third party. The cost used for DuraShield SR is $6.07/yd.
- **For each scenario, labor cost was assumed as 2.5x the material cost** for all materials as a general standard based on contractor feedback. However, localized costs can vary greatly based on location and other factors.

GAF Roads

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Extends road life by 50 - 60% over asphalt emulsion treatments

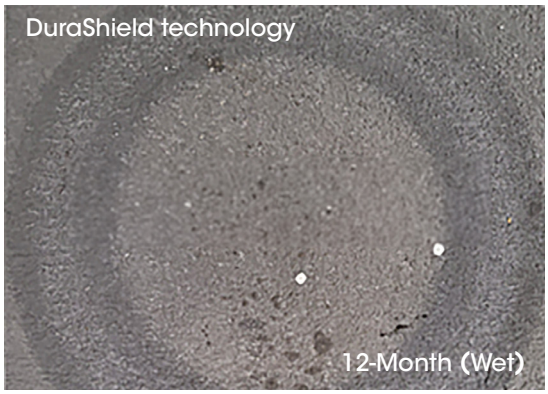
Managed with:	Service Life Before Repave	Number of Treatments	Maintenance Cost ($/lm)
Asphalt Emulsion	26 Years	M&R: 2 Coating: 6	Total: $535,040 Annualized: $9,728
DuraShield-SR	**41 Years**	**M&R: 1** **Coating: 5**	**Total: $386,320** **Annualized: $7,024**

Comparative wear and weather performance

National Center for Asphalt Testing (NCAT) conducted comparative wear and weather performance testing by subjecting prepared new asphalt pavement slabs coated with the leading maintenance coatings and DuraShield-SR to accelerated wear and weather aging using a three-wheel polishing device with water for a minimum of 300,000 cycles.

Mix design: Superpave 12.5mm (max stone size passes 12.5 mm screen) with Trap Rock Binder: PG 64-22

Cycles to Breakthrough: 15K cycles



Cycles to Breakthrough: >300K cycles

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