



NCDOT Pavement Preservation Bulletin Materials and Tests Unit

CRS-2P Emulsion in Chip Seals

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What is a CRS-2P emulsion?

CRS-2P is a Cationic, Rapid-Setting, High Viscosity, Polymer Asphalt Emulsion. It is produced by emulsifying a polymer-modified asphalt binder. It is used widespread nationally in Chip Seals.

NC State Research Project 2011-03

To summarize Dr. Kim's key findings about CRS-2P:

- CRS-2P was the most bleeding and rutting resistant.
- CRS-2L emulsion is fine, but CRS-2P emulsion is more effective because it shows better performance in both field and lab tests and is not much more expensive.
- CRS-2P is recommended for higher trafficked and heavily cracked roads. [Read the full report here.](#)



Pictured Above: Pulling a chip out from a 2 day old seal reveals the elastic properties of the CRS-2P emulsion.

When should we Specify CRS-2P?

CRS-2P emulsion is applicable in all standard Chip Seal applications.

With chip seal roads that are severely oxidized or raveled, have a bit more traffic (>1000 AADT), or in areas with prolonged heat and humidity in warm months, a CRS-2P could be beneficial. Based on data from 2 projects, the cost increase for CRS-2P could be between \$0.05-0.25/gallon. If you would like to discuss bringing a polymer Chip Seal to your Division, please reach out to the Pavement Preservation team. Our contact info is on the second page.

Division 3 CRS-2P Projects

In 2025, a few routes chip sealed in Division 3, with CRS-2L, exhibited aggregate loss and bleeding, despite proper construction practices. To show their stakeholders improvements to their Chip Seal program, Division 3 specified CRS-2P emulsion in their 2026 projects. DC00489 and DC00490 were constructed this summer and early returns are incredibly positive. M&T and Division 3 personnel observed a **well bonded chip seal and less loose aggregate** than previous Chip Seals. Lab sampling indicated the CRS-2P had a **high asphalt residue, elastic recovery, and softening point, which are indicators of good performance.**

Pictured Left: CRS-2P Chip Seal paving in Division 3.

Pictured Below: Completed CRS-2P Chip and Fog Seal.



PP Team Contact Info and Bulletin Sign-Up



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