

Manual for Cape Seals

Gary Hicks, PhD, PE, Lerosé Lane, PE, and DingXin Cheng, PhD

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This manual is one of several designed to empower local agency staff and contractors, through training, to choose the right pavement treatment at the right time to optimize preventative maintenance funds. Most local agencies defer road maintenance over many years, and there are thousands of miles of public roads that are currently in poor conditions. With new state funding available for maintenance and construction projects, proper road preventative maintenance is an issue of paramount importance.

Cape seals originated in Cape Province of South Africa near Cape Town, hence the name Cape. They consist of a single chip seal which is covered by a slurry surfacing, either a slurry seal or a microsurfacing. They were first used as a wearing course in the construction of low-volume roads. In the past several years, they have evolved into maintenance treatments that can be successfully used on both low- and high-volume roads. The popularity of cape seals is a direct result of their

low initial costs in comparison to thin hot mix asphalt (HMA) overlays. Currently, with improved binders and equipment, considerable interest has been shown for using cape seals in a wide range of applications, such as on public roads, highways, local streets, and a multitude of other surfacing needs throughout the world.

Different binders can be used in the chip seals, being either cold or hot applied. Cold applied binders include modified and unmodified asphalt emulsions, normally with rapid setting additives. Hot applied binders can be polymer-modified asphalt cements, asphalt rubber, and rubberized asphalt such as polymer/crumb rubber blends. The chip seal surface is then covered as soon as possible with a slurry surfacing. The appropriate binder type for the chip seal layer and the slurry surfacing are selected based on pavement condition, climate, aggregate properties, desired service life, and cost.

Study Methods

The project consisted of conducting a detailed literature review followed by the development of a detailed manual to help agencies and industry select the right Cape seal treatment, design and construct the treatment, and provide guidance for quality assurance. The manual also includes detailed troubleshooting guides in case something goes wrong during construction for Cape seals.

Key Findings

The key findings are the best practices for the design and construction of Cape seals. Most of the needed information regarding Cape seals is in this manual, which can be easily used by both local agencies and industry.

Policy Recommendations

This manual, if followed, should prevent most failures in the construction of Cape seals. It is imperative that better specifications be used to ensure better performance and fewer failures.



a) What We Want



b): What We Don't Want

Figure. Photos of Good and Bad Cape Seal Projects

About the Authors

R. Gary Hicks, PhD, P.E., Program Manager for CP2 Center, and is a P.E. in the states of California, Oregon, and Alaska. Lerose Lane, P.E.(California), Senior Pavement Preservation Engineer for CP2 Center. DingXin Cheng, PhD, P.E. (Texas), is Director of CP2 Center and a Professor of Civil Engineering at CSU, Chico. The CP2 Center operates under the Department of Civil Engineering at CSU, Chico.

To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/1845C



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