

AQUAPHALT®

permanent repair material for asphalt + concrete

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Virginia Paving Company, Division of The Lane Construction Company

Evaluation of Aquaphalt in the Monitor-Merrimac Memorial Bridge-Tunnel

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In February of 2013, Virginia Paving Company was struggling to repair leaking joints in the Monitor-Merrimac Memorial Bridge-Tunnel (MMMBT), a 4.5 mile-long crossing for heavily travelled Interstate 664. It tunnels under the Hampton Roads Harbor and connects the cities of Newport News and the seven largest cities of Hampton Roads, Virginia. After failed attempts with other mixes, Aquaphalt is the only product that continues to hold up in the tunnel's wet, dirty conditions.



This shows an example of what we were dealing with, at the throat of the tunnel we were at 27' below sea level with sea water seeping in around a lot of these joints. As we removed the asphalt to repair the joint water was constantly seeping in. We would attempt to seal the joint the best we could with an injection sealant process then fill the patch with Aquaphalt.

Figure 1: Water Seeping In

Leaking joint stopped the best we could, but as you can see less than ideal conditions for asphalt with wet dirty conditions. In a lot of cases there was still standing water in these areas. I was skeptical at first whether the Aquaphalt would stay in these patches but it stayed in and the more we did the more confidence I had with this product.

Figure 2: Prepped Area Ready to Lay Aquaphalt





We placed the Aquaphalt in 2 lifts to make sure it didn't settle too much with the heavy traffic volume on Interstate 664. In one instance when we came in the next night, one of the patches did settle about $\frac{3}{4}$ " so I tried putting a skim patch on top of what we did the night before doubting that it would adhere and stay in place. Not only did it stay in place there was water still seeping out of this patch. This was approximately 3 years ago and it is still in place.

Figure 3: The First Lift

Example of a finished patch, and as you can see there is still some sea water still seeping from the patch. Even with water still coming in the Aquaphalt remains in good shape after approximately 3 years.

Figure 4: Completed Patch



This was a pothole that was approx. 10" deep, down to the concrete below. Massive amount of sea water running out of it right in the wheel path of the right lane. Filled it with Aquaphalt to safe up the lane until we did the joint repair in this location. Aquaphalt stayed in place until the repair was performed.

Figure 5: Pothole in Lane

In Conclusion

The pictures I have attached are just some examples of how we utilized Aquaphalt. Regular hot mix would not have done the job with the wet, dirty conditions. We repaired over 30 joints at the approaches of the MMBT in this manner. This project made me an Aquaphalt believer. Really, I don't know what other product we could have used with the conditions we were up against. Aquaphalt is an excellent product and comes in different aggregate sizes to best suit the job at hand.