



Project:

VDOT Culvert Rehabilitation – Flying Fox, VA

Lynchburg District, Appomattox Residency, Flying Fox
(38°00'14.6"N 78°49'35.1"W)
90' of 4'10" (w), 3'4" (h) CMP running under Critzer
Shop Rd (VA-151), structural pipe restoration.

Engineered Structural System:

Nukote Metal Prime I @ 5 mils, Nukote PP300 @ min 1850 mils, Nukote ST-M @ 120 mils as a topcoat on Nukote PP300. applied to properly prepared substrate, in direct conjunction with the Project Specification. The installed system was certified to perform independently of the existing culvert, capable of carrying the roadway above independently.

Completion Date:

May 2020

Client:
VDOT (Virginia Department of Transportation)

Manufacturer:
Nukote Coating Systems

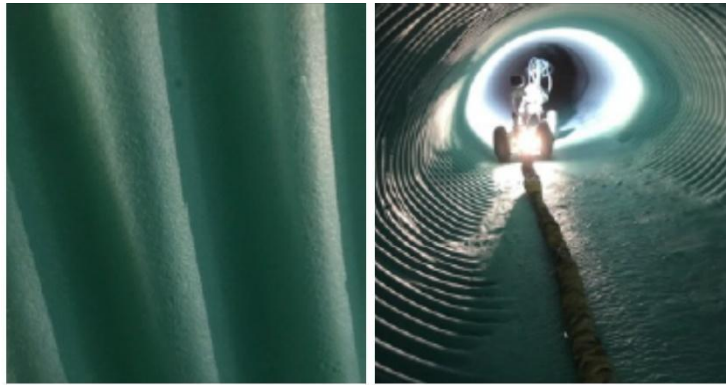
Contractor/ Applicator:
Atlantic Industrial Coatings

Area:
90' of 4'10" (w), 3'4" (h) CMP

Location:
Flying Fox, VA



Project Profile



Description:

The project involved spraying a structural liner inside of a deteriorated, galvanized corrugated steel culvert. Due to corrosion, the structural bearing capacity of the culvert had been compromised and an engineered solution to carry the load of vehicular traffic was needed. A solution which did not disrupt traffic and, simultaneously, minimized flow reduction was required. The chosen method of rehabilitation involved utilizing Nukote PP300 and Nukote ST-M to create a structural, composite liner.

Host pipe was dewatered and cleaned. Multiple areas of the invert were missing and required repair/filling. After repairs were performed, the pipe was cleaned again, dried and the ends of the pipe were primed. The entire invert was coated lightly with ST-M (~40 mils). PP300 was then applied using the Ringtech 360 system. Several delays due to weather and robot malfunction occurred. Each time, the pipe was cleaned, dried and primed prior to restarting application of PP300. Due to the shape of the existing pipe, additional passes were made without rotation in order to achieve desired thickness at the 4 o'clock and 8 o'clock positions. Minimum of 1850mils was achieved with some areas exceeding 1900mils. Final passes of ST-M with Ringtech 360 exceeded 100mils

The last 2 feet of each end, which are outside of the load zone, were tapered down from 2000mils in order to achieve a strong, edge free wrap of ST-M onto the headwalls. The ST-M wrapping was hand applied. The upstream end of the pipe had a large cavity immediately in front of the pipe, which was filled with concrete per customer request. This effectively prevents any flow of water from coming into contact with the liner system along the invert edge.

