



Hampton Roads Bridge and Tunnel Expansion (USA) Sheet Waterproofing

Country	USA, Norfolk, Virginia (VA)
Type	Highway
Client	Virginia Department of Transportation (VDOT)
Main Contractor	Dragados, VINCI, Flatiron, Dodin Campenon Bernard
Execution of the work	Renesco Inc.
Designer	HDR, Mott MacDonald
Construction Period	2022-2024

Project Description

The Hampton Roads Bridge and Tunnel (HRBT) Expansion is a three-and-a-half-mile (5.6 km) bridge-tunnel that runs between the cities of Hampton and Norfolk and connects the Peninsula and Southside Hampton Roads.

The HRBT is the largest highway construction project in Virginia's history. It will occur in the I-64 corridor between Settlers Landing Road in Hampton and I-564 in Norfolk and include adding a third lane and a drivable shoulder to I-64 in each direction. New twin two-lane tunnels, approximately 7'500 ft long (2'440 m) and 45 ft in (outer) diameter, will accommodate four lanes of traffic for a total of eight lanes of capacity across the water and will be constructed as bored tunnels. The tunnels will be constructed by a 46 ft diameter variable density Tunnel Boring Machine (TBM), creating the second largest tunnel opening for a TBM in North America.

Geology

The geology of the Coastal Plain of Virginia consists of late Jurassic and Cretaceous clay, sand, and gravels. Quaternary Alluvium (Qc) underlain by Yorktown Sands (Tys).

Scope of Service

The portals of the north and south islands, as well as the launch pits will be waterproofed with a loose-laid sheet membrane around the entire perimeter between the initial (shotcrete) lining, slurry wall and the final CIP concrete lining.

- 100 mil (2.5 mm) PVC-P sheet waterproofing
- Geotextile, Polypropylene (22oz./sq. yd)
- PVC-P Water barriers (16- inches, 6 ribs)
- Remedial Grouting System & Concept
- BA anchors



1. Overview about the launch pit shafts. South Island
2. Waterproofing of the pits
3. Portal area