



HS2 Northolt Tunnel (UK) Cross-Passage Waterproofing

Country	United Kingdom
Type	Railway
Client	High Speed Two (HS2) Limited
Main Contractor	SCS JV (Skanska, Costain, Strabag)
Execution of the work	Renesco UK Ltd.
Designer	Design House JV (Arup, Typsa, Strabag)
Construction Period	2025-2026

Project Description

High Speed 2 (HS2) is a planned high-speed railway running between London in the South and Birmingham in the North with approximately 200 km track.

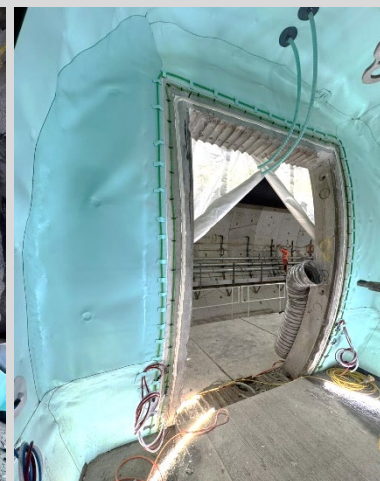
The two Main Works Civils lots start from Euston Station in London. S1 includes two 9 km twin bored tunnels between the new HS2 stations, Euston and Old Oak Common. S2 continues from Old Oak Common with 15 km of twin bored tunnels to West Ruislip where there is approximately 5 km of open route before transitioning into C1 lot.

The Northolt Tunnel is 8.4 miles long, running underground between West Ruislip Victoria Road in Ealing, west London – just outside HS2's Old Oak Common station. At its deepest point, the tunnel is 35 meters below ground. The tunnel was constructed using four boring tunnel machines (TBMs). The connections have been made using a spray concrete lining (SCL) mining technique. The distance between the two tunnel bores ranges from 6 meters to 20 meters. Out of 34 cross-passages connecting the northbound and southbound tunnel, 11 of them were constructed using a ground freezing technique. This method was adopted due to the presence of water bearing soils with a high-water table present in the ground in the western section of the tunnel.

Scope of Service

Supply and Install of the waterproof membrane system, including all ancillary items, in accordance with the specifications.

- Sheet membrane, PVC-P, 2 mm
- 1'200g/sqm PP protection geotextile
- Protection sheet membrane, 1.5 mm
- Water barriers, 400/30/6, PVC-P
- Termination at pre-cast-concrete-elements with adhesive strips/tapes
- Injection system, active control sockets, injection hoses, hydrophilic swelling profiles
- BA-Anchors



1. Crown – Installation of the waterproofing system
2. Cross-passages with secondary lining cast in place
3. Invert – Installation of the waterproofing system