



## HS2 Chiltern tunnels (UK) Cross-Passage Waterproofing

<b>Country</b>	United Kingdom
<b>Type</b>	Railway
<b>Client</b>	High Speed Two (HS2) Limited
<b>Main Contractor</b>	Align JV (Bouygues, VolkerFritzpatrick, SirRobert McAlpine)
<b>Execution of the work</b>	Renesco UK Ltd.
<b>Designer</b>	Ingérop, Jacobs
<b>Construction Period</b>	2022-2025

## Project Description

High Speed 2 (HS2) is the new High Speed Rail Network running between London in the South and Manchester and Leeds to the North. Phase-1 involves the route between London and Birmingham with approximately 200km of new high-speed rail being laid, just under half is located under West-London, between the HS2 southern terminus at Euston Station and a portal at West Ruislip.

The C1 package of HS2 consists of 21.6 km of high-speed rail infrastructure in a rural environment. This will include a 3.37 km viaduct, the Chiltern Tunnel under the Chiltern Hills and five vent shafts handling both intervention and tunnel ventilation facilities. The Chiltern Tunnel is the longest tunnel on the HS2 route between London and Crewe. The twin-bore tunnel is 16 km (10 miles) long with thirty-eight cross-passages linking the northbound and southbound tunnels.

## Scope of Service

Supply, transport, and installation of a loose-laid waterproofing sheet membrane system under pressurized water conditions for the 38 cross-passages and 4 adits. Primary lining with shotcrete, sheet waterproofing according to BTS 3<sup>rd</sup> edition Clause 312 (British standard), full-round (360°) sealing, secondary lining via cast-in-place concrete and the option for remedial grouting/injection works.

- Sheet membrane, PVC-P, 2 mm
- 1'400 g/sqm PP protection geotextile
- Protection sheet membrane, 2.0mm
- Water barriers, 240/20/4, PVC-P
- Termination at pre-cast-concrete-elements with adhesive strips/ tapes
- Injection system, active control sockets, injection hoses, hydrophilic swelling profiles, contract grouting socket, penetrations, and acrylic injections.
- BA-Anchors



1. Primary Liner/ shotcrete
2. Tunnel Portal
3. Cross-Passage Waterproofing