

World's longest immersed road and rail tunnel

Denmark is set to build one of Europe's largest infrastructure projects, the 18km-long Fehmarn Belt Fixed Link undersea tunnel to Germany. Immersed tube construction involves making tunnel segments on land and floating them out to sea, sinking and connecting them together

HOW TUNNEL WILL BE CONSTRUCTED

1 Fabrication: Reinforced concrete segments cast and joined in factory near Rodbyhavn, Denmark

2 Launching: Tunnel element fitted with watertight bulkheads and moved to dry dock. Dock flooded with seawater

3 Transport: Tugs move element towards pre-dug trench on seabed

4 Immersion
Pontoons attached. Water pumped into ballast tanks inside element. Element gradually lowered to seabed using pontoon suspension wires

5 Finishing
Elements joined with watertight seals. Trench filled in. Bulkheads removed, joints between elements completed

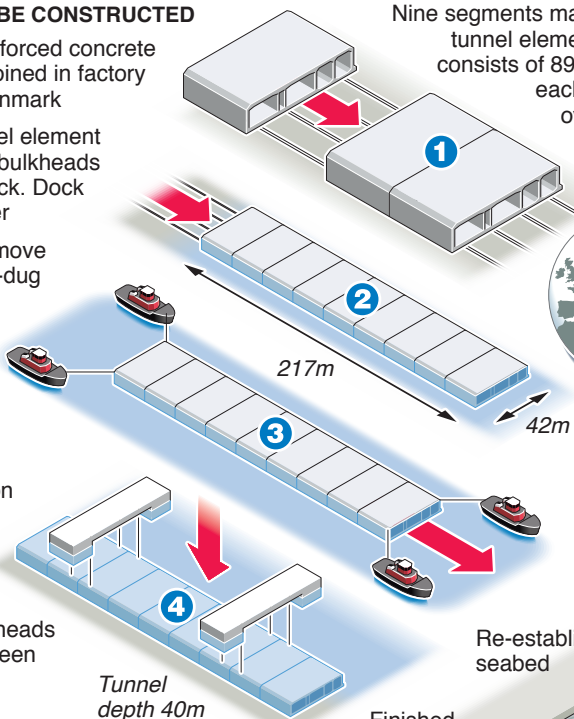
PROJECT DETAILS

► **Construction:** Planned to begin in 2018. Tunnel due to open in 2026

► **Travel time:** Seven minutes by train, about 10 minutes by road. Current ferry transit takes 45 minutes (plus waiting time to board ferry)

► **Cost estimate:**
€7 billion

Nine segments make up one tunnel element. Tunnel consists of 89 elements, each weighing over 70,000 tonnes



CROSS SECTION THROUGH TUNNEL

General fill (sand)

Locking fill (crushed rock or gravel)

Gravel bed

Finished tunnel

Protection layer (rock)

Re-established seabed

Trench

Two rail tubes

Service / escape tube

Two road tubes, each with two-lane motorway plus emergency lane

