Traditional immersed tunnelling results in a tunnel buried beneath the waterway which it traverses.

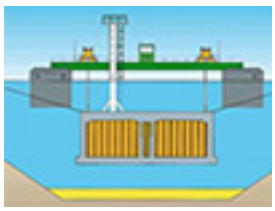
Construction procedure

A trench is dredged in the bed of the water channel.

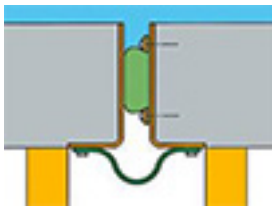
Tunnel elements are constructed in the dry, for example in a casting basin, a fabrication yard, on a ship-lift platform or in a factory unit.

The ends of the element are then temporarily sealed with bulkheads.

Each tunnel element is transported to the tunnel site - usually floating, occasionally on a barge, or assisted by cranes.



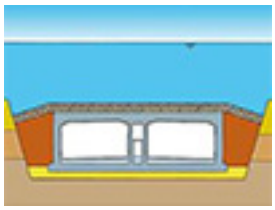
The tunnel element is lowered to its final place on the bottom of the dredged trench.



The new element is placed against the previous element under water. Water is then pumped out of the space between the bulkheads.

Water pressure on the free end of the new element compresses the rubber seal between the two elements, closing the joint.

Backfill material is placed beside and over the tunnel to fill the trench and permanently bury the tunnel, as illustrated.



Approach structures can be built on the banks before, after or concurrently with the immersed tunnel, to suit local circumstances.