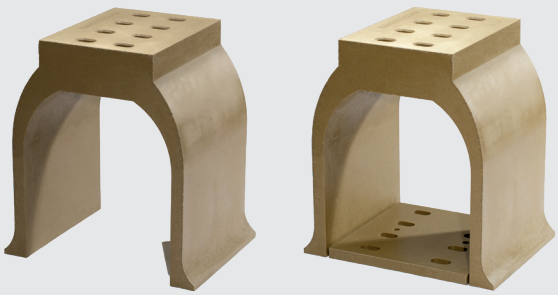
ACO Climate Stilt Tunnel

DATA SHEET

For use in crossings installed flush with the surface.

The ACO Climate Stilt Tunnel with slotted upper surface is installed flush with ground level, in areas which only require Load Class C 250. The units can be installed with or without the slotted climate plate, and can connect to ACO Climate tunnels.

The benefits for amphibians and small animals are easily explained: installation flush with the road surface permits minimum crossing distances, uncomplicated entrance areas at road verge level, optimum climatic conditions due to the ingress of water and air and, at the same time, optimum adaptation of tunnel temperature to ambient conditions.



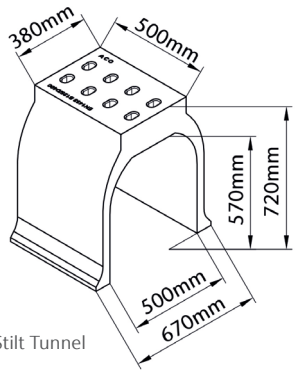
ACO Climate Stilt Tunnel

Benefits

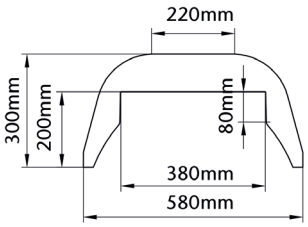
- Compatibility with climate tunnels and entrances
- Slotted top regulates moisture and temperature
- Tunnel material unaffected by water flooding
- Crossing lengths reduced due to shallow installation
- Minimal coefficients of expansion permit precise
- installation without expansion joints

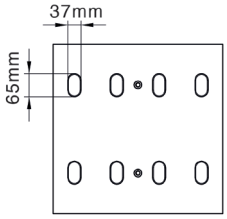
Applications

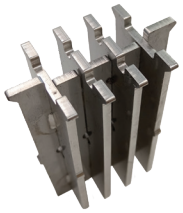
- Migratory paths across road systems
- Tunnels across paths, verges and areas of light traffic vehicles



Climate Stilt Tunnel

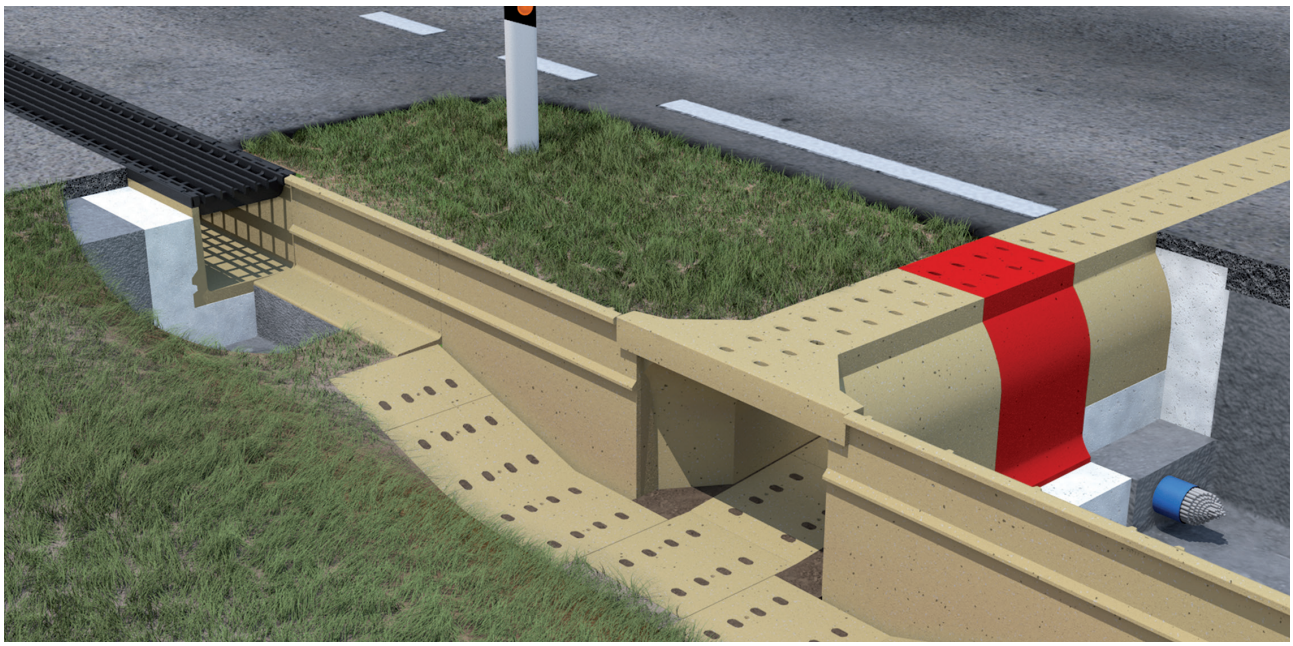


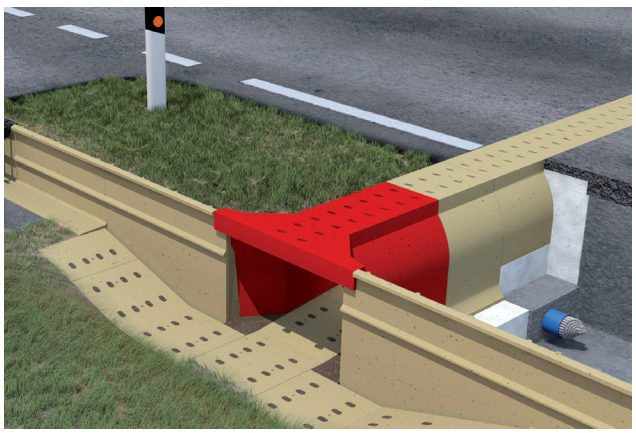




Inlet Fin

Product Code	Description	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
ACO Climate Stilt Tunnel					
11131	Climate stilt tunnel slotted	500	580	720	129.0
11132	Climate stilt tunnel plus plate*	-	-	-	-
11129	Climate tunnel stepdown	50	580	300	6.9
11127	Climate plate with drain holes	480	480	30	16.0
46324	Climate stilt tunnel HeelGuard™ inlet fin	62	36	84	0.3



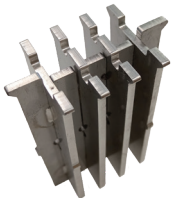


Compatibility

ACO Climate Stilt tunnels with slotted tops can be incorporated into tunnel crossing systems. Connecting directly to the tunnel entrance in verges, or as a entire tunnel in areas of light traffic (Load Class C 250). The range of Climate tunnels include solid and slotted top tunnels and tunnel entrances.

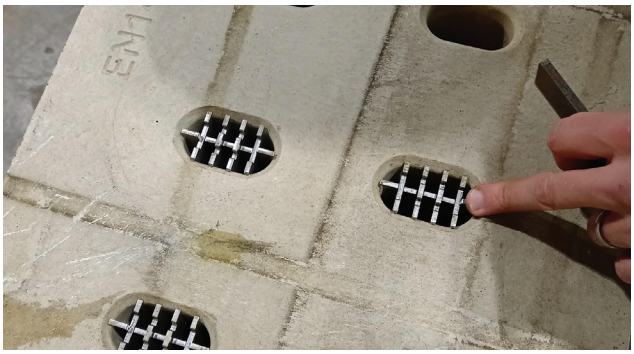
The versatility of the system allows the tunnels to be installed at surface height and transitioning between roads, pedestrian areas and verges.

Inlet Fin

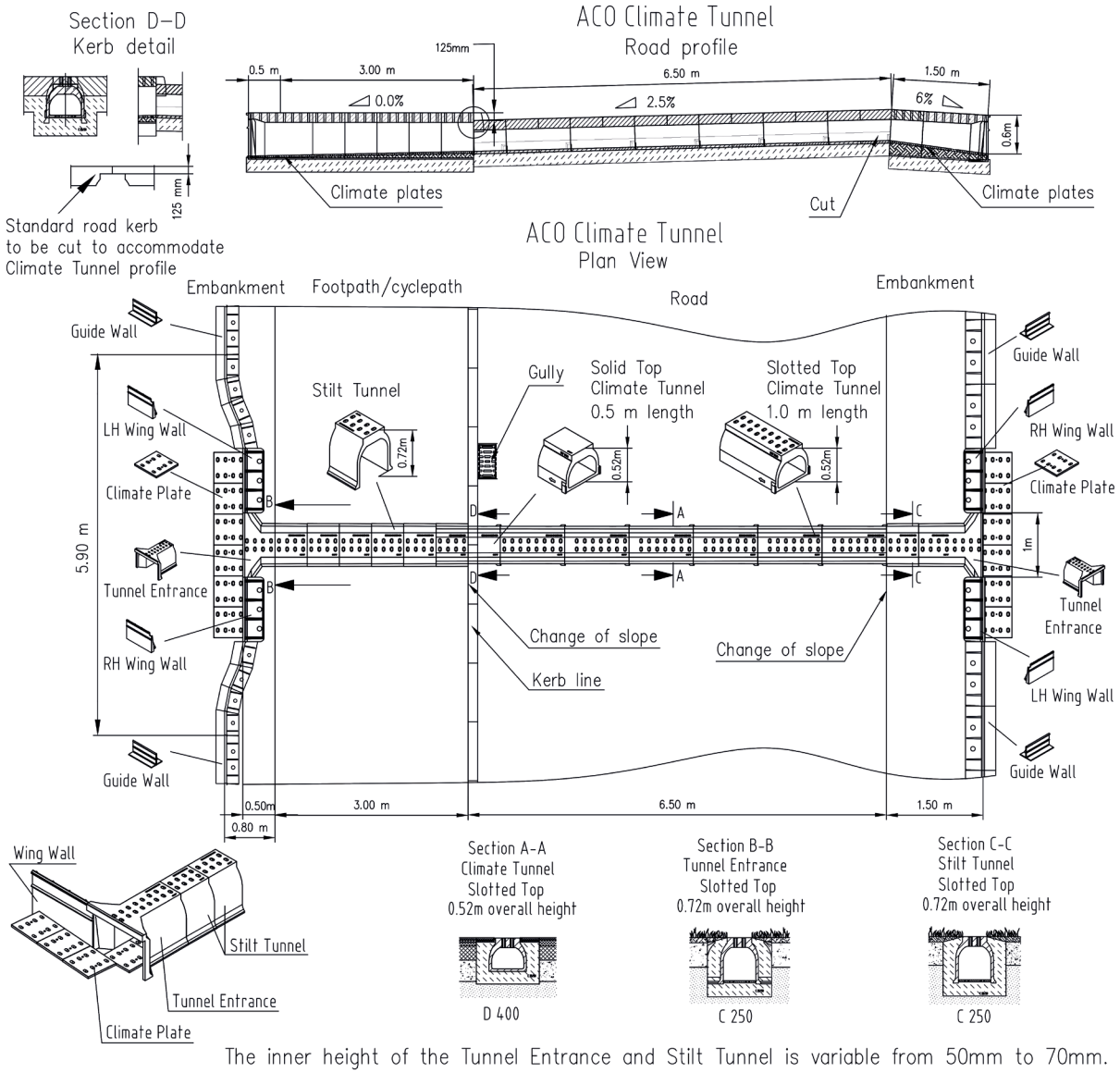


Within pavement area a HeelGuard™ solution may be required, and ACO have introduced an inlet fin for these types of installations.

This stainless steel inlet fin reduces the inlet size of ACO Stilt tunnels, whilst still allowing moisture and light to enter the tunnel below. The Inlet Fin provides a HeelGuard™ structure particularly suited for tunnel sections which span pedestrian pavements. These units are easily installed in existing or newly installed Stilt tunnel inlets.



This crossing installation is an indicative example and should be adapted to meet site specific conditions.



The inner height of the Tunnel Entrance and Stilt Tunnel is variable from 50mm to 70mm.

Protection of amphibians

Smooth, non-absorbent surfaces with minimal thermal conductivity form an ideal contact area for amphibians. ACO Climate Stilt Tunnels are manufactured without using metal reinforcement, eliminating the possibility of disorientation to animals arising from distortion of magnetic fields.

Optimally designed slotted openings at surface level permit the ingress of rainwater, thus not only serving the moisture needs particularly of younger amphibians, but also creating a thermal effect, helping the crossing temperature to approximate closely to ambient temperatures.

The airflow in crossings often presents problems in closed systems due to “central dryness” inside the tunnel. The slots in the ACO Climate Stilt Tunnel form numerous air-inlet openings so that airflow is minimised and vital moisture is retained. Surveys have shown that this system is effective in use.

Tips on laying tunnels

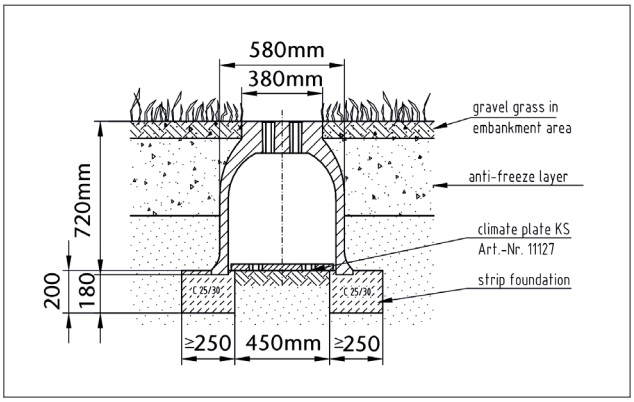
The top surface of the tunnel sits flush with the upper surface. Bevelled cutting of tunnel elements (by the customer or on site) is required to suit changes in gradient within the length of the tunnel.

Stilt tunnels are often laid so that they extend outside the road surface into the verge areas, connecting to ACO Climate tunnel with D 400 Load Class for carriageway areas. ACO Climate Stilt Tunnel elements are installed flush with the tunnel and at the same level at both ends. These are installed in the course of concreting work.

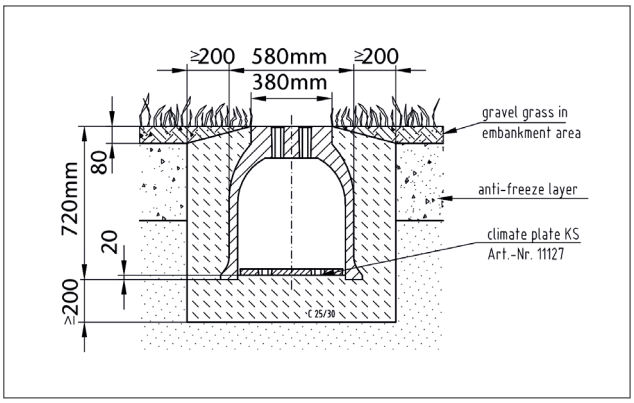
The combined length should extend through the width of the crossing area and safety verges (normally 1.50m from the edge of the trafficked crossing).

The following should also be taken into account:

- Siting of the guide wall.
- The use of closed elements where specially required. Please refer to the details of our Climate Tunnel Solid and Slotted Top or to our Design Services department for further details.



B 125 installation



C 250 installation

Installation – Cllimate Stilt Tunnel

STEP 1

When asphalting is completed, cut the surface out to a width of 1000mm or to suit the width of the digger bucket or other special requirements. For installation flush with the surface, excavate the trench for the foundation to a depth of approx. 900mm.

C250 installation: Lay a C 25/30 concrete footing of approx. 200mm thick-ness and compact onto a load-bearing foundation.

B125 installation: Lay two footings of C25/30 concrete footings of approx. 200mm thick and 25mm wide, at 45mm spacing.

STEP 2

Position the tunnel and entrance elements on this concrete footing to the correct line and level. Lay the individual elements so that they butt tight up against each other.

Fill the voids on each side of the tunnel with C 25/30 concrete and compact evenly in layers on both sides. The final top level of the concrete will depend on such factors as the thickness of the asphalt binding and top courses. The top of the concrete should be approx. 80mm below the upper surface of the tunnel, sloped upward towards channel.

STEP 3

Next, repair the surface either side of the tunnel. If rolled asphalt is used, do not roll over the line of the channel. Take care to ensure that the space is not overfilled or underfilled.

The Climate Stilt Tunnel system can also be installed before the top course is laid. Care should be taken to ensure an even height at the join between the surface of the tunnel and the top course and that there are also expansion joints at the edge of the concrete surround.

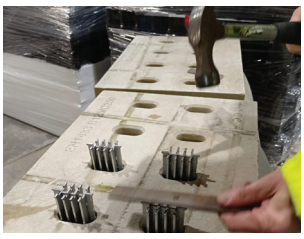
STEP 4

Lay a gravel bed in the verge areas before and after the tunnel. Clean any residual concrete and/or asphalt from the floor of the climate tunnel.

Installation – Inlet Fins

STEP 1

Align and insert inlet fins in the Stilt tunnel inlets.



STEP 2

Using a wooden block or metal plate over the inlet fin, tap repeatedly with a hammer using gentle/reasonable force, until the inlet is flush with the surface of the unit.

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