

Fish Friendly Flap Valves

...part of our **Fish Migration Solutions** range



Aquatic Control Engineering is market leader for the provision of fish and eel migration solutions and has installed hundreds of fish friendly flap valves in the UK and Ireland. Designed and manufactured since 2004, years of research, development and design have provided our customers with a high quality and functioning fish access solution. Our fish friendly flaps are manufactured in High Density Polyethylene (HDPE), a sustainable plastic material which is robust, durable and UV stable.

ACE fish friendly flap valves are available in three main designs suited to a range of environmental conditions including:

- Tidal and wave action waters
- Critical flood risk areas
- Infrequent and seasonal use sites

ACE Fish Friendly Pet Flap

This fish friendly flap valve is best suited to inland waters where tidal variability is not a factor and where there is a moderate to low flood risk. This design provides a very cost effective installation and allows a greater window for fish migration to occur in either direction.



Pet Flap Installation: Uckinghall



Pet Flap Installation: IDB

How it works...

- A flap valve is manufactured with a smaller upside-down pet flap on the front side.
- A robust steel floating arm is attached to the top of the pet flap.
- As water levels rise on the downstream side the main flap valve closes but the smaller remains open to allow passage for fish.
- This passage is enhanced by the float which rises and closes the flap slowly to a determined height of water.

The pet flap closing height can be adjusted during and after installation for optimal operation throughout its lifetime. This pet flap has been design tested with the University of Southampton and features in a number of important river restoration publications. It has allowed for cost effective fish passage to occur where barrier removal is not an option.

ACE Reset Float Flap Valve

This fish friendly valve has been designed to better operate in tidal areas. The design also prevents the fish flap from failing open, a critical requirement for fish flaps in flood risk catchments.

How it works...

- A flap valve is constructed with a smaller downward facing gate at an appropriate height for the tide levels.

Aquatic Control Engineering Ltd

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ACE Fish Friendly Flap Valves

...technology that frees nature

- The reset technology allows the fish flap to float and remain open as tidal waters rise and press against main door.
- At a predetermined level the reset technology forces the fish flap to shut.
- As the tide reaches low levels the fish flap is able to reset itself for the next cycle.

This technology is automated using innovative flow valves and does not require electricity or telemetry to operate on site. The reset technology is adjustable allowing the user to control the level at which the flap shuts after installation.

Retro Fitting

Both the pet flap and reset float system can be retro fitted to an existing door, often reducing overall project cost. This allows doors in good condition to remain in service and prevents wasteful replacement of structures.

Our expert installations team are able to complete the full cycle of works on-site to a high quality.



Retrofitting Example: Pet Flap



Reset tidal flap valve: Berwick-upon Tweed.

ACE Side Hung Doors

This door design allows the greatest level of fish migration, suited to sites where the door only needs to close at exceptionally high levels to prevent too much water entering ditches, tributaries or similar.

Composed of stainless steel or HDPE the doors remain open until a water gradient causes the venturi effect to shut the doors.

How it works...

- The doors are open and allow bi-directional flow.
- As the downstream water level rises the upstream gradient steepens and causes water to rush through the gates.
- This venturi effect combined with calculated door weighing closes the gates shut at a predetermined level.

The level at which the gates shut is calculated and controlled using a weighted door system. This is adjustable post installation, allowing the user to adapt and alter the shutting level as required. Again this technology does not require any electricity or telemetry to operate on site.



Side hung fish doors: Ashlone Wharf

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