Raising the stakes with SeaQureWeld

Our sector-leading quality assurance programme is taking fish pen manufacturing to the next level.

The forces of nature in exposed farming locations demand a robustly manufactured fish pen system that will take everything that the harsh marine environment will throw at it.

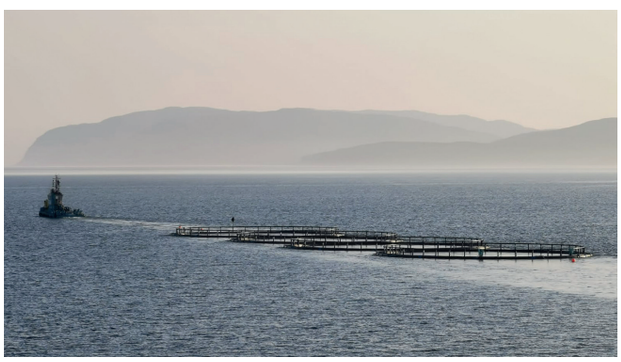
Fish farmers in exposed locations expect heavy-duty pens on their site to be strong and live long. Pens play a crucial role in keeping their fish secure and healthy, their farm technicians safe, and provide effortless access to in-pen technology and subsea connections. To exceed those expectations, we have raised the stakes by investing in a sector-leading quality assurance programme in the production of its HDPE fish farm pens while implementing a series of design improvements.

Well-known brand names in our resilient range of pens include SeaQurePen, Triton, Oceanflex, and Aquaflex. Circumferences range from 40 metres up to 200 metres. Developed over 30 years, our pen systems have been successfully installed in some of the harshest offshore marine environments all over the world.

Over the past four years, customer demand for our pen systems has increased markedly. At our pen manufacturing business, Gael Force Fusion, production and refurbishment works have expanded beyond our main base near Oban, with additional full-time manufacturing also taking place at Kishorn alongside longstanding remote build sites in Orkney and Shetland.

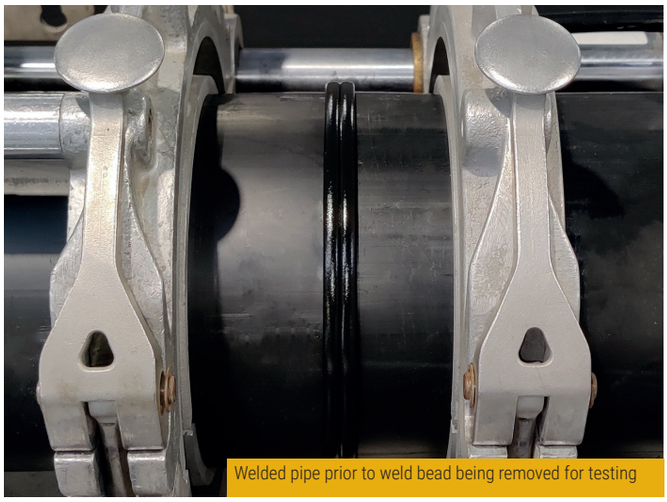
But while customer demand has been developing, so too has our desire to ramp up our focus on delivering high levels of quality assurance.

"We have completely raised our game by investing heavily in several areas to reinforce our quality assurance process for the design and build of pens. The prime goal for us is to offer a best-in-class standard of manufacturing excellence and quality assurance that fish farmers should expect; the gold standard in the sector." Group Production Director Stephen Offord explains.



Underpinning this unique quality assurance programme is an ISO 9001:2015 accredited quality management system and a purpose-built QHSE software platform. In 2021, we were accredited to manufacture pens in accordance with NS9415 standards by the leading Norwegian certification body, Aquastructures. These are critical foundations for formalising strict pen build procedures, monitoring plant and machinery, and supporting the continuous skills and training development of their workforce. Strong, clear team communication is also critical as part of the programme and the adopted QHSE software enhances this through the use of automated email alerts.

“The important outcome from this highly rigorous testing process is that an unsatisfactory weld will not be permitted to leave the manufacturing area and, most crucially, will never make it into the pen assembly stage.”



Welded pipe prior to weld bead being removed for testing

SeaQureWeld

At the heart of the programme is SeaQureWeld – a stringent process for assuring the highest standards of quality in the butt fusion welding of HDPE pipe joints during pen assembly. Tight Incoming Quality Assurance (IQA) checks are carried out with records retained on all critical components and materials entering the production area to ensure they meet high-quality standards.

Gael Force has invested in highly specialised weld inspection equipment which is used to perform quality tests on every weld bead produced from butt-fused pipe joints. The process is used over and above the requirements set out in the polyethylene standard WIS 4-32-08 which only requires the removal and hand testing of weld beads.

The weld inspection equipment allows further in-depth testing and analysis of the external weld bead created during butt fusion and identifies defects at a higher level within the joint with pinpoint precision and accuracy. It logs all the detail related to each individual weld which is filed per project on the accompanying specialist database on the cloud, ensuring maximum traceability.

In the unlikely event of a defect, the weld inspection equipment, which is controlled with a tablet and smartphone app, immediately detects this, and automatically triggers an email alert which is sent instantly to the supervisor and production manager.

The section of pipe containing the defect weld is cut away and removed, data recorded in the app and sent for independent weld analysis. The weld is then completely re-done, and the testing process begins again until a pass result is returned on the next bead.

Bead Removal

“SeaQureWeld is on a different level from anything we have seen in the market and is going to offer customers added confidence in our pen building procedures. Our team, to their credit, have worked extremely hard to embed our robust quality assurance process into their daily routines and we are seeing that pay off for our customers”.

Scan the code on your smartphone to view weld inspection equipment in action.