

FRAMO SONIHULL

Protect offshore installations with ultrasonic anti-fouling technology



Smart biofouling management

Framo Sonihull ultrasonic anti-fouling technology is an easy way to reduce costs, labour and performance issues on offshore installations and supporting vessels. Sonihull is the world's leading chemical-free biofouling management solution, proven in decades of experience at sea.

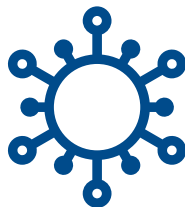
Clean wins with ultrasound

Biofouling costs the offshore industry each and every year, deteriorating both assets and efficiency. External build-up of algae, weeds and barnacles adds significant weight to offshore structures, and it accounts for around 30% of lifecycle corrosion. Within offshore systems, it can impair vital cooling and cause premature equipment failure. And where propulsion is used for positioning or transport, it has a direct impact on fuel consumption and emissions.

Using ultrasound, Sonihull offers a clean and cost-effective way to combat marine growth. Without chemicals or mechanical intervention, it prevents structural loading and keeps efficiency high. As a result, it quickly pays itself back through maintenance and energy savings.

Why choose Framo Sonihull?

- Effective prevention of biofouling – without releasing biocides, microplastics or other harmful substances into the environment
- End-to-end protection of offshore structures and critical seawater systems
- Reduced downtime and costs through prolonged intervals between mechanical cleanings
- No disturbance to crews, offshore structures or electronic equipment
- Easy engineering and installation – ATEX and IECEx approved



Sonihull application areas

Without biocides, Sonihull ultrasonic technology inhibits biofouling on pumps and other solid surface exposed to raw seawater.

- Pumps
- Hulls and pontoons
- Sea chests
- Tanks
- Pipework
 - Strainers
 - Intakes
 - Pipes
 - Valves
- Coolers
 - Box coolers
 - Plate coolers
 - Shell-and-tube coolers
- Freshwater generators
- Propulsion systems
 - Propellers
 - Thrusters
 - Waterjets
- Legs, columns and monopiles

Protecting offshore industry

Fixed platforms



FPSOs



Rigs and drillships



Wind turbines



FSRUs



Offshore support vessels*



*Systems sold as Alfa Laval Sonihull

Simply effective technology

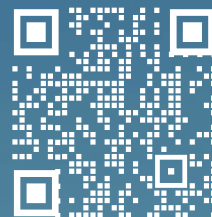
Framo Sonihull combats biofouling without the use of harmful substances, major equipment or manual labour. It safeguards efficiency and extends the time between mechanical cleanings.

How Sonihull works

Sonihull uses ultrasound to create microscopic agitation, which has a gentle but continuous effect. It keeps hulls and equipment clean by eliminating microorganisms on the surface, which removes the first link in the food chain. Without this biofilm, surfaces become less inviting for larger organisms that feed on it. Likewise, the microscopic movement of the water prevents barnacle and mussel larvae from attaching.

The agitation is caused by non-inertial cavitation, a low-energy process that produces no shockwave and no risk of surface erosion or pitting:

- Sonihull generates acoustic pulses in targeted ultrasonic frequencies, which are transmitted through the material the transducers are attached to.
- The pulses create an oscillating pattern of decreasing and increasing pressure on the material surface.
- Microscopic bubbles form as the pressure drops and implode as the pressure increases.

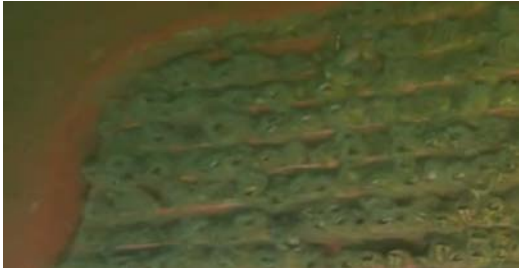


Framo Sonihull

Typical results with Framo Sonihull protection

Sea chest grating – unprotected

Biofouling build-up obstructs water inflow



Sea chest grating – protected

Free flow of water maximizes cooling potential



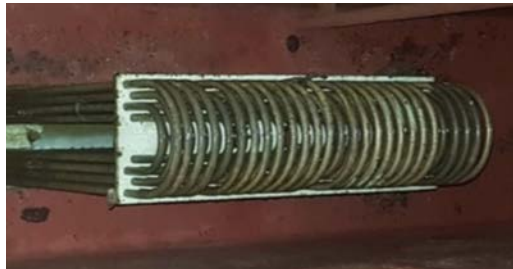
Box coolers – unprotected

Biofouling build-up inhibits effective heat transfer



Box coolers – protected

Clean surfaces provide high cooling efficiency



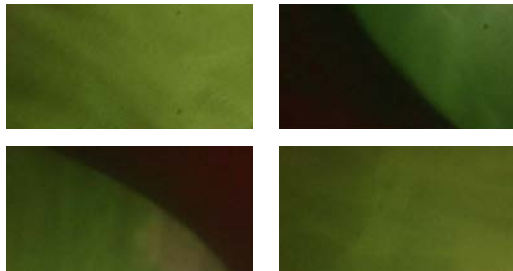
Propellers – unprotected

Barnacles, algae and hard deposits impair efficiency



Propellers – protected

Clean surfaces retain their hydrodynamic properties



Shrinking costs and footprint

Biofouling management with Sonihull safeguards offshore assets and operating economy – along with the environment, in more ways than one.



Extended lifetime

Biofouling is a major contributor to corrosion. By keeping submerged surfaces clean, Sonihull preserves their integrity and prolongs their working life. Offshore structures stay in profitable service, avoiding costly repairs and replacements over time.



Reduced labour

Continuous protection with Sonihull reduces maintenance downtime for key equipment like coolers and freshwater generators. In addition, it avoids much larger costs for underwater inspection and manual cleaning of submerged offshore structures.



Maximized efficiency

Biofouling degrades both thermal and hydrodynamic efficiency. Sonihull protects sea chests and critical cooling systems, keeping heat transfer and process performance high. And where propulsion is used, it prevents drag-increasing build-up. Indirectly or directly, these factors reduce energy use.



Reduced emissions

Greater energy efficiency means less fuel burned. That contributes to rapid payback for a Sonihull system, and it lowers emissions as well. On support vessels covered by marine regulations, it can mean an improved Carbon Intensity Indicator (CII) rating.



Ecosystem protection

By using ultrasound, Sonihull avoids potential harm to aquatic ecosystems. As well as decreasing reliance on biocidal coatings, it reduces the need for manual cleaning that can release metals and harmful compounds into the water.

Framo Sonihull systems

We ensure comprehensive biofouling protection through customer-focused design. Each Sonihull solution is engineered for simplicity and effective performance. You can be sure of robust ultrasound transmission, matched to the application and the surfaces involved.

Easy, cost-effective installation

Installing a Sonihull system is a simple, non-invasive process where no through penetrations are needed. Installation can be timed conveniently and managed efficiently, without major disturbance to your offshore operations.

With no expensive anodes to install or replace, Sonihull also saves both CAPEX and OPEX compared to impressed-current technology.

Versatile attachments

From marine-grade aluminium and stainless steel mounting rings to a wide range of adapters, there are options for attaching to different surfaces and structures as needed. A universal pipe adapter, for example, fits flat surfaces like sea chests and box coolers but also curved hulls and pipes of more than 35 mm in diameter. There are also offset adaptors for hard-to-reach surfaces.

Scalable reliability – Framo Sonihull Xtreme

In environments where safety standards are non-negotiable, Sonihull Xtreme sets the benchmark. The solution is certified to the most stringent ATEX and IECEx requirements, with transducers approved for Zones 0, 1 and 2. The control units, which are housed in precision-engineered aluminium or 316 stainless steel, are rated for Zones 1 and 2.

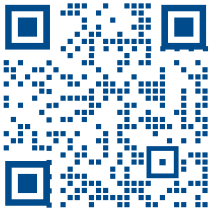
Each control unit commands up to 16 transducers across cable runs of up to 80 metres, delivering the scalability and resilience that complex offshore and marine installations require. The transducers can connect from up to 100 m away with no loss in performance.

Sophisticated as well as stable, Sonihull Xtreme allows individual transducers or groups to act as independent systems, running selectable ultrasonic tracks. Advanced algorithms, intelligent thermal management and features like auto recovery ensure thorough performance optimisation, allowing the system to adapt dynamically to varying operational conditions.



Let's protect your offshore assets

Contact us today to discuss how your offshore installations, vessels and equipment could benefit from biofouling management with Framo Sonihull.



Visit our website

The Framo Sonihull product range





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