

EQ-Piling

Next generation of
'at-the-source'
noise mitigation



Reducing noise thanks to prolonged, gradual energy transfer. EQ-Piling leverages decades of experience with conventional impact hammers as well as nearfield and at-the-source noise reduction. IOIP's newly-developed approach allows you to meet even the most stringent environmental regulations and ensure marine life safety during installation without additional noise mitigation measures.

How does EQ-Piling work?

A vast water tank acts as a drop weight. This tank, containing up to seventeen hundred tons of seawater, is raised by hydraulic lift cylinders and released automatically from a drop height

setpoint. The freefall on nitrogen buffers, acting as a cushion, generates an impact force that lasts 15-20 times longer than conventional piling. The result: smoother energy transfer to the monopile and significantly reduced noise levels.

EQ-Piling advantages

- Significant noise reduction
- No additional mitigation measures required
- Reduced project costs
- Decreased carbon emissions
- Greater efficiency
- Future-proof

IQIP EQ-Piling

A step change in noise-compliant monopile installation

EQ piling offers significant benefits for monopile installation projects. First of all, it significantly reduces noise. That means more efficient and less complex installations, lower costs, reduced energy consumption, and simplified project management.

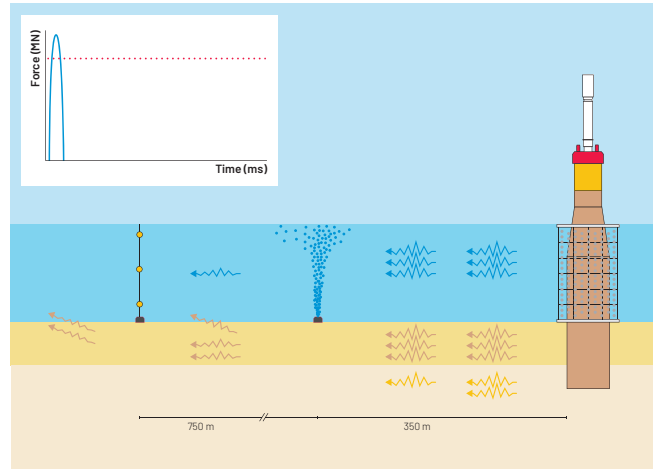
- **Noise reduction**
Simulations using finite element modelling show a significant reduction in sound exposure levels as well as sound pressure levels compared to conventional hammers.
- **Reduced cost, simplified project management**
In most cases, additional noise mitigation measures, such as big bubble curtains, aren't required. That reduces pile driving project costs, interruptions, and project management complexity.
- **Lower emissions**
EQ-Piling can help reach climate targets such as the EU 2050 net-zero emissions goal. Fewer vessels are required, reducing energy consumption and carbon emissions.
- **Installation benefits**
Lower drive acceleration means secondary steel fixings such as boat landings can be installed on monopiles before pile driving, making installation easier and more efficient.
- **Reduced fatigue**
The ramped straight in line downward force reduces pile fatigue by up to 90%.
- **Future-proof**
EQ-Piling isn't limited to any anvil size or ram weight and can be used with ever-larger monopile diameters and weights, as well as in challenging soil conditions where traditional noise mitigation is less effective.

Increasingly large turbines with higher capacity need significantly larger monopile foundations, installed at greater depth. Ever-greater force is required to overcome soil resistance while at the same time environmental legislation keeps becoming stricter. IQIP's innovative technique offers the solution, ensuring developers, governments and contractors can fully comply with environmental regulations.

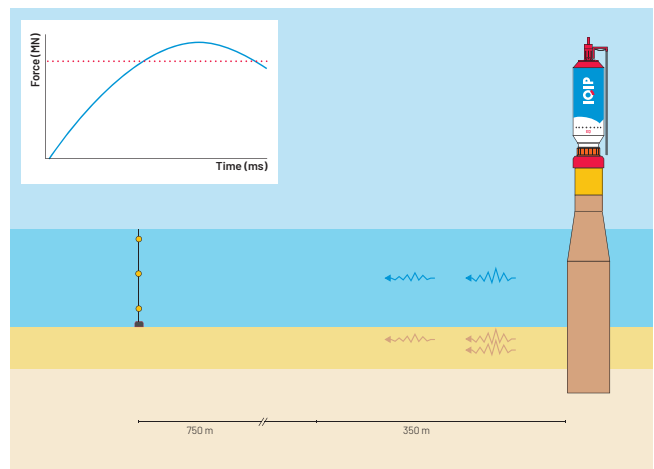
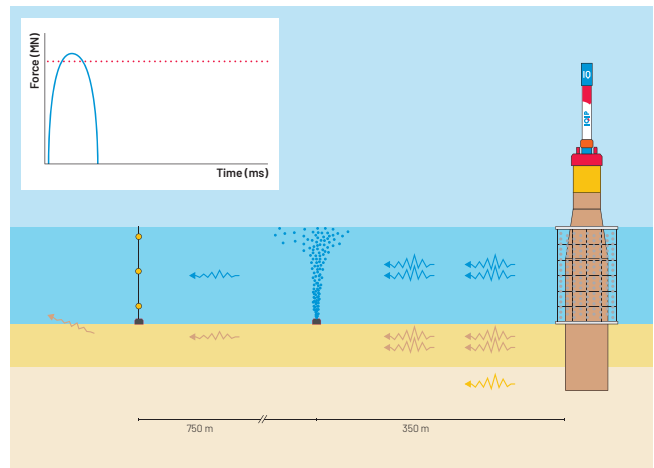
Find out more about EQ-Piling, IQIP's highly effective noise at-the-source mitigation empowering construction of increasingly large offshore wind turbines



Conventional piling



IQ-series with PULSE®



The 'time' factor makes it possible to strike a balance between drivability and noise mitigation.