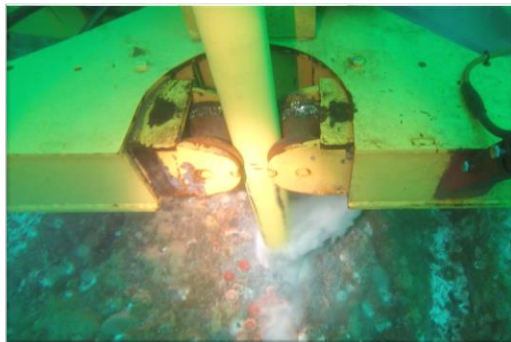
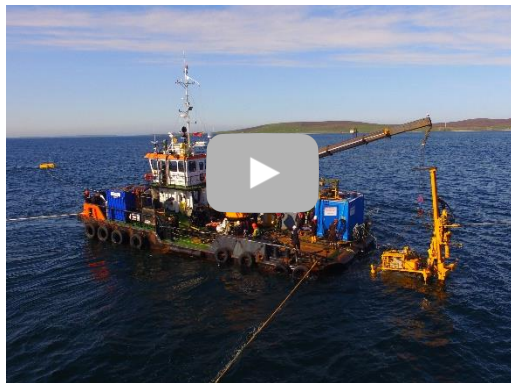


Direct Embedment Anchoring Solutions

RAPTOR Rock Anchors



Drilled Rock Anchors

The RAPTOR family of anchors are high-strength, corrosion resistant rock bolts that can be installed subsea using Sustainable Marine Energy's Anchoring ROV (AROV), or on land using a standard drill rig.

RAPTORS are a torque controlled double reaming type anchor, with no requirement for grout. The range consists of three anchors to suit a range of applications where moorings are required on rock. Typical applications include instrumentation buoys, aquaculture, offshore renewables and vessel moorings.

RAPTOR anchors are manufactured using high-grade materials that have been carefully selected to ensure long term corrosion resistance and provide high holding capacities. RAPTOR anchors are suited to sites with a rocky seabed that is largely free from boulders, with no or shallow sediment layers.

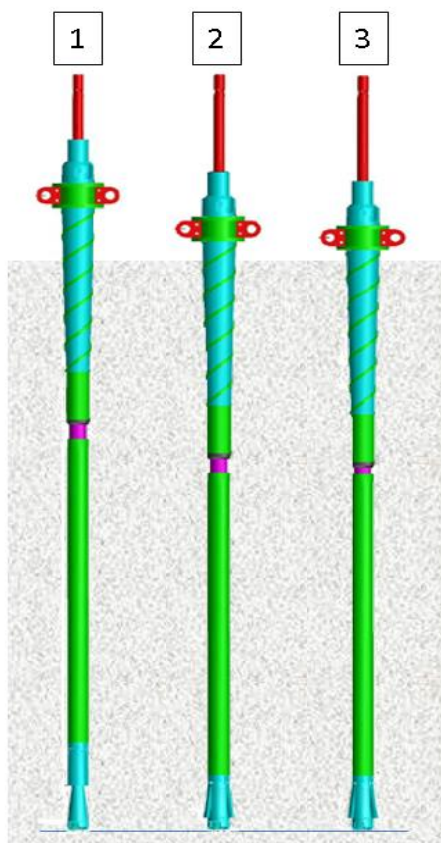


THE RAPTOR ADVANTAGE

- High strength rock bolt for areas where traditional anchors can't or don't work
- An anchor equivalent to hundreds of tons of concrete is installed from a multicat
- The Anchor is ready to use immediately after installation, with no requirement for grout setting time or post-tensioning
- Precise positioning of anchors on the seabed with no possibility of future movement
- Low environmental impact, minimal seabed disturbance
- Low logistical costs compared to traditional gravity foundations
- Low mobilisation and transport costs for anchors and AROV
- Very quiet installation, no requirement for listing on the UK Marine Noise Registry

Installation

The Raptor anchor is installed in a continuous three step process, resulting in a grout-free, mechanically bolted connection with a known pre-tension.



1. Anchor drills into substrate to required depth rotating both inner and outer stems
2. Inner stem stops rotating. The outer stem continues rotating reaming the upper taper into the rock. The cutting fingers are simultaneously forced over the lower cone reaming the lower taper into the rock.
3. The anchor is tensioned, pulling the top and bottom tapers together, and the nut is tightened to clamp the anchor into the rock at a known pre-tension.

RAPTOR Range*

DATA SHEET

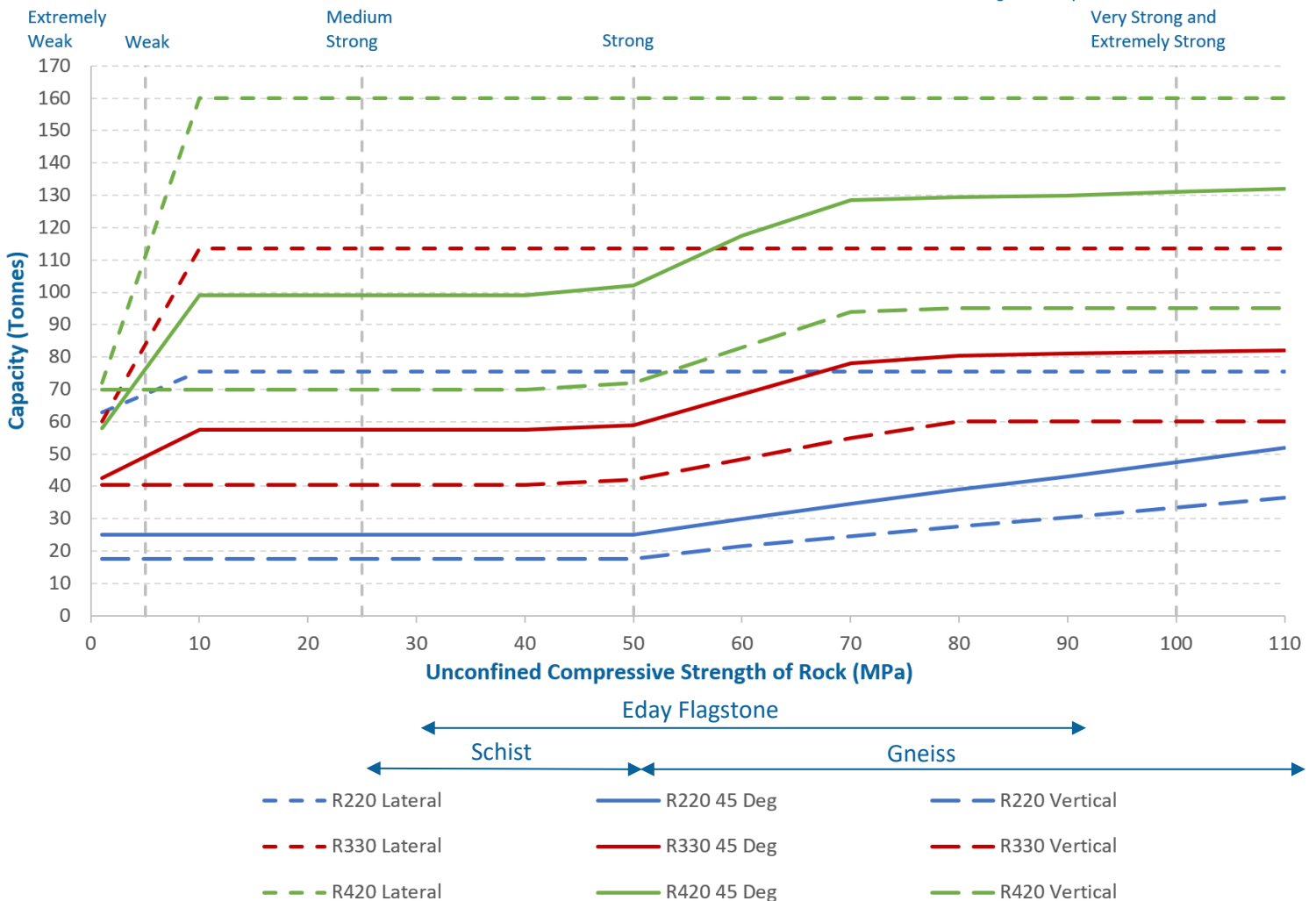


Raptor	Overall Length (cm)	Lateral Mechanical Capacity (Tonnes)	Vertical Mechanical Capacity (Tonnes)
R	XXX	YYY	ZZZ
R	220	105	120
R	330	155	120
R	420	220	120



RAPTOR Capacity Chart

Strength descriptions are based on Eurocode 7
Very Strong and Extremely Strong



*Standard RAPTOR range, please contact us if your project requires a larger or smaller rock anchor. Bespoke solutions are available; single anchors with capacities greater than 500t, and multiple anchors with templates that can react more than 1000t.