First ETD Mooring Line

Cortland Develops Easy-To-Deploy Oceanographic Mooring Line to Aid in Tsunami Detection

The Challenge

When the National Oceanic and Atmospheric Administration (NOAA) wanted to decrease deployment infrastructure and costs for its tsunami warning buoys system, Cortland was approached to develop the mooring line for the world's first Easy-To-Deploy (ETD) mooring system, the latest in buoy and mooring technology.

The Solution

Normally mooring line systems connect a multitude of cables, which makes them cumbersome, large and difficult to install. However, Cortland's innovative solution, developed and patented in conjunction with NOAA, offers significant installation and maintenance cost advantages over conventional designs. The durable construction of Cortland's ETD (Easy to Deploy) oceanographic mooring line system eliminates connecting hardware, which means that the systems last longer, are more reliable, and reduce operation and maintenance costs compared with traditional solutions.

For more information visit cortlandcompany.com.

Photo: Australian Bureau of Meteorology

Key Facts

About Cortland
- cortlandcompany.com
- 335 employees worldwide
- 6 manufacturing locations in 4 countries
- Manufacturer of custom-designed high performance rope, sling, cable and umbilical solutions

Project
ETD Oceanographic Mooring Line to Aid in Tsunami Detection

Location
Tasman and Coral Seas

Technologies used
Patented continuous graded construction, eliminating connecting hardware.

Features of ETD Mooring Line
- Torque free
- No connecting hardware
- Shakedown strum suppression
- Reverse catenary design
- Fishbite protection
- High strength
- Compact footprint

"Usually, mooring systems connect one type of cable, to another type of cable, to another, making the system large, cumbersome and tough to deploy. Transporting and deploying typical mooring systems is also difficult and requires large vessels and significant time at sea. With Cortland's new ETD mooring line, a few men could deploy it off a vessel as small as a commercial fishing boat."

**Luis Padilla,
Cortland Company**

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NOAA's ETD system includes Cortland's mooring line and an anchor subsystem, with the buoy's own reel and spooling system functioning as its anchor. The ETD's small size and ease of deployment means it can be installed by a small vessel, thus reducing crew and vessel requirements.

With over 40% of the world's population presently living within 2 miles of the ocean, the best way to provide early warning to vulnerable communities is to establish a network of wave sensitive buoys that transmit real-time information. Management of the U.S. Tsunami Warning System and the deep-ocean buoy network, known as DART (Deep-Ocean Assessment and Reporting of Tsunamis) is NOAA's responsibility. NOAA determines how to allocate available resources to best monitor potential tsunami hazards, based on threats in relation to vulnerable populations. The organization is also responsible for the maintenance and new deployment of DART buoys. Science Applications International Corporation (SAIC) licenses the DART technology from NOAA and produces and supports the ETD DART system for the international community, strengthening the global tsunami network.

This type of deep-ocean mooring system is an important component of tsunami detection. Tsunamis endanger millions of people worldwide; therefore real-time offshore wave analysis is critical to minimizing their impact. To help with this, an ever-increasing system of buoys is being maintained and deployed throughout the world's oceans, enabling scientists to better predict the time of arrival, height, and duration of tsunamis. Cortland's mooring line will help tsunami forecasting to be more accurate, reliable and cost effective, ultimately resulting in saved lives and resources.
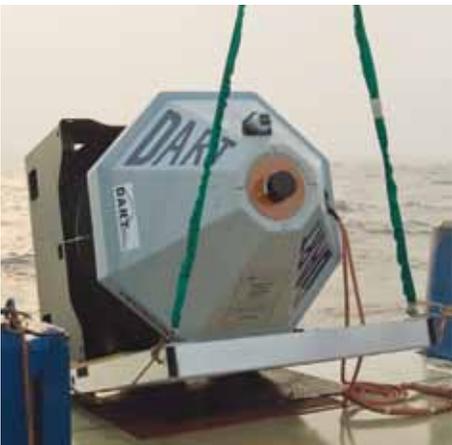
"Cortland is a valued partner and has been critical in making this breakthrough technology robust and cost-effective."

**Christian Meinig,
Director of Engineering,
NOAA-PMEL**

Photo: Australian Bureau of Meteorology

Satellite

ETD Buoy
w/ bi-directional satellite
telemetry, MET package,
and acoustic seafloor link

CTD Profiler
w/ Inductive Communications

Blended Composite
Reverse Catenary Mooring

Water Depth:
< 5500m

DART Tsunameter
w/ Acoustic Communications

ETD Anchor w/ mooring line spool

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