



### Project Data

Location	Panama
Completion	2006
Project Type	Steel Pile Protection
Products / Systems Used	Series 2000HD
Contractor or Applied By	Grupo Naval S.A.

### Project Details

Denso's SeaShield Series 2000 HD was chosen as the pile protection system for Decal Panama facility in Taboguilla, Panama. Decal's facility is an integral part of Panama Canal as it is a storage and distribution of petroleum products that serve many of the ships that enter the Canal.

The Canal was open in 1914 to join the Atlantic and Pacific Oceans so ocean vessels could pass through the lowest point of the continental divide. There are locks that raise and lower ships in which are fed by two lakes, Gatun and Madden. It is 50 miles long from deep waters in the Caribbean and Pacific Ocean. There are six massive pairs of locks that ships use for transit, 1000 feet long and 110 feet wide. Each may be filled or emptied in less than ten minutes and each pair of lock gates takes two minutes to open. The water for the locks is gravity fed by the lakes through 18 feet diameter culverts and does not require any pumping of water.

The project involved 65 each 42" diameter steel piles with an average length of 20 feet. The piles were cleaned to a SSPC SP 2-3. Next the Denso S105 Paste was applied over the entire surface to be coated. Then, the SeaShield Marine Piling Tape was applied with a 55% overlap, starting from the bottom and proceeding upward. Finally, the SeaShield Series 2000 HD Outer covers were bolted and secured around the piles.

Grupo Naval S.A. out of Panama was the dive contractor that installed the system. The customer, Decal Panama, was very satisfied as Grupo Naval completed the project on time despite the large diameters and strict safety regulations.

### Benefits

- High Impact Resistance
- Long Maintenance-Free Service Life
- UV Resistance
- Can Be Applied Underwater



Pumping 550 Epoxy Grout underwater in a Denso Round Fiber Form.



One of the numerous locks in the Panama Canal.



SeaShield Series 2000HD System installed on the pilings at the Decal Panama.

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