



Treated Wood Aquatic Case History

**MARK O. HATFIELD MARINE SCIENCE CENTER
OREGON STATE UNIVERSITY**

Inspection Finds Creosote Treated Piling Sound After 28 Years Of Service.

PROJECT: OSU Research Vessel
Dock & Trestle Expansion
Newport, Oregon

AGENCY: Timber Products Inspection
Portland, Oregon

DATE: June, 1995

BACKGROUND: Yaquina Bay at Newport, Oregon is the home port for Oregon State University Oceanography Department's research vessel. The dock and trestle were constructed in 1968 and are supported by 119 marine piling. OSU plans to expand the facility so the original structure required inspection prior to construction.

PURPOSE: To randomly inspect the OSU research vessel dock and trestle piling, caps and bracing, for decay, marine borer damage or distress. To take increment cores from the piling above the high tide line and at the low tide line. The inspection excluded the fender piles, catwalk piles and dolphins.

PROCEDURE: The piling, caps and bracing were visually inspected, increment borings taken, drilled, sounded, and probed with a sharp instrument.





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PRESERVATIVE PENETRATION & RETENTION: The AWWPA Standard C3 for Coastal Douglas Fir marine piling is a minimum penetration of 1.0" and at least 85% of the sapwood treated if the sapwood is less than 2.0"; the AWWPA retention requirement is 20 lb./cu. ft. based upon the outer 2.0" of the core. [Note: The AWWPA Standard was reduced to 16 lb./cu. ft. in 1995 for piling used in marine waters north of the San Francisco Bay.]

RESULTS: All cores had sapwood penetration of 100%; retention below the tide line was 21.38 PCF and 17.34 PCF above the tide line.



TPI inspectors pull test cores to check penetration and retention levels.

The piling inspected and bored appeared to be in excellent shape and continue to support the dock and trestle platforms. Out of all 119 piling that supported this project, only one needed replacing. That pile was damaged by mechanical abrasion and not product failure.

The caps supporting the dock and trestle platforms were very solid and the cores taken from them all exceeded the required 0.5" of penetration.



The piling were heavily encrusted with starfish, sea anemones, mussels and other varieties of sea life.

CONCLUSION: Considering the facility have been in service for almost thirty years, all of the treated material in the facility performed outstandingly. It plays an important role in the expansion of the Marine Science Center because it did not require replacement, resulting in savings of over \$150,000 in construction costs. The condition of the materials used to build the Mark O. Hatfield research facility, demonstrates that projects constructed with properly treated and installed treated wood should provide excellent performance and extensive service.



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