



 Case Study ▶

Exposed Hydroelectric Penstock Performs Perfectly

Independent testing of DuraShield coated steel pipe revealed that even after prolonged exposure to harsh atmospheric elements, its protective coating didn't deteriorate at all. LifeLast's DuraShield polyurethane coatings offer the best penstock steel pipe protection available.

AWWA C222-99 industry standard compliant for interior and exterior steel water pipe.

Case Study: Hydroelectric Penstock

The PacifiCorp Prospect Hydroelectric Project is located in Jackson County, Oregon, on the Rogue River and on two tributaries approximately 45 miles northeast of Medford, Oregon, near the town of Prospect. Lands abutting the project include those owned by the U.S. Forest Service, state of Oregon, Boise Cascade, PacifiCorp, and other private landowners.



78" Welded Steel Pipe Installation



Completed Above-Ground 78" Welded Steel Pipeline

Original construction took place between 1911 and 1946 by the California–Oregon Power Company (Copco). Copco subsequently merged with Pacific Power and Light Company in 1961. Since then, the project has been owned and managed by PacifiCorp with additional phases added. It includes three concrete diversion dams, three powerhouses, and a water conveyance system of approximately 9.3 miles. The entire hydroelectric system is a run-of-the-river operation.

The Nitty Gritty

Project: The Prospect Hydroelectric Project

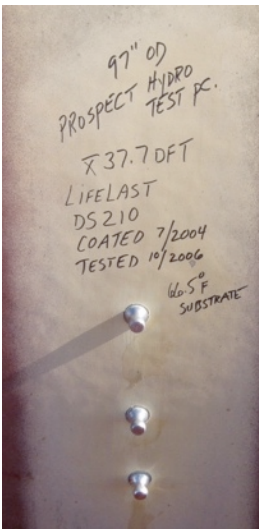
Scope: Lining - 20 mils and Coating - 25 mils of 2,070 Lineal Feet of 96" and 2,200 Lineal Feet of 78" Welded Steel Penstock Pipe with LifeLast DuraShield 210

Owner: PacifiCorp (Pacific Power)

Completion Date: June 2005

Case Study: Hydroelectric Penstock

In a two-phase construction cycle from 2004 to 2005, PacifiCorp added 2,070 lineal feet of 96" and 2,200 lineal feet of 78" penstock pipe to the system. The pipe was produced at the Northwest Pipe Company's Portland, Oregon facility, lined with 20 mils and coated with 25 mils of LifeLast DuraShield 210. The pipeline was top coated with 3 mils of aliphatic polyurethane to ensure color stability on the above ground sections.



QA Testing

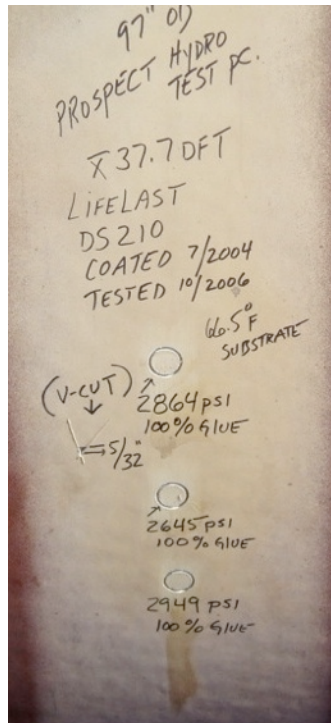
LifeLast DuraShield polyurethanes are ideal for penstock applications due to the physical properties they demonstrate. A combination of excellent adhesion to the substrate, superior abrasion and impact resistance and low coefficient of friction* make DuraShield polyurethanes the industry choice for penstock corrosion protection.

As a part of our customer's quality assurance process, a section of The Prospect Penstock pipe was evaluated for coating adhesion after 27 months of atmospheric exposure. The test results show, atmospheric exposure had no effect on the DuraShield system's ability perform under direct exposure conditions.

**Please ask for a copy of our independent testing performed by The Utah Water Research Laboratory - "Friction Test on 48" Polyurethane-Lined Steel Pipe" - May 2007*



Penstock Pipe Heading to the Powerhouse



27 Month QA Test Results

The Nitty Gritty

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Questions or technical assistance on your specification or project? us; we're happy to help. Email us at info@lifelast.com or call (360) 254-0563