

A STUDY IN SERVICE LIFE

Fairplay, CO

INTRODUCTION

Throughout NCSPA's long history, numerous corrugated steel pipe (CSP) installations have been the subject of routine critical evaluation to establish accurate, predictable service life guidelines. This study of an aluminized type 2 (ALT2) installation in Fairplay, CO, was conducted with a coupon sampling at the 50-year mark to examine soil resistivity, water resistivity and overall condition of the pipe to determine the remaining projected service life.

CONCLUSION

Based on conservative pit penetration extrapolations from the Fairplay study, the projected service life of 16 gage ALT2 CSP **will exceed 100 years** in this environment.

SITE AND LABORATORY SUMMARIES

Site Location

Fairplay, CO, Site 22: North entrance to the Sinclair Gas Station and Silverheels Minimart on the west side of US Hwy 285 in Fairplay, CO. This location was originally an entrance to a Conoco Bulk plant.

Sampling

Soil from B position; no water sample; 1 ALT2 trepan

Parameters

Soil Resistivity: 3218 ohm.cm; pH 6.4; chlorides 10 ppm; sulfates 126 ppm

Water Resistivity: No water was available at this site

CSP Condition Observations

24" diameter ALT2 in very good condition on both ends with concrete headwalls; free aluminum coating is visible around the complete circumference; previous trepan holes were not corroded further; sample taken at 6 o'clock position.

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Aluminized End North



ALT2 Water Side

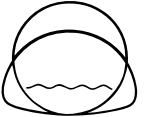


ALT2 Soil Side





NCSPA



STEEL: PROVEN 100-YEARS STRONG

CASE STUDY

Trepan Evaluation

Coupons were bead blasted to remove loose oxides and images were recorded of the remaining surface (see images on right). Micrometer readings were taken after bead blasting using a ball micrometer (general thickness) and a point micrometer (deepest pit depth).

Starting Thickness: 0.066"

Micrometer Results – Ball: 0.065", 0.065", 0.064" **Point:** 0.059" (0.007" deep – few small pits)

All site and lab information and testing provided by AK Steel.
(Type 2 Aluminized at this site was produced by what is now AK Steel Corp.)



Aluminized End South



ALT2 Water Side



140 X

ALT2 Soil Side



140 X

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