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Attached are revised material specifications for corrugated metal pipes including polymer coated pipes.

These were originally issued by EI 87-7 which also distributed construction specifications and a policy for use of corrugated pipe with polymer coatings including pipes made of polymer coated aluminized corrugated steel.

On 4/27/89 the Department issued a proposal insert that permitted substitution of thinner pipes if coated with aluminum instead of zinc provided the design still satisfied loading requirements given in Chapter 8 of the Highway Design Manual.

From tests conducted by the Department, it was shown that polymer/aluminum - coated steel and polymer/galvalume coated steels are sensitive to environments containing salts. Salt enters at the exposed edges and corrodes these coatings, resulting in a loss of polymer coating bond. Based on test results from the Materials Bureau, the polymer/aluminum - coated steel will not be permitted for culvert pipe used in Department projects since much of our drainage is exposed to salt laden runoff.

The attached note accomplishes this. It will be inserted into proposals by Final Plan Review Bureau beginning with the letting of February 1, 1990. It changes the Standard Specifications so that aluminum or aluminum - zinc alloy pre coatings will not be permitted with polymer coating. Polymer coating shall only be used with zinc coating.

Polymer Coated Pipe

Make the following changes to the Standard Specifications of January 2, 1985.

Addendum No. 2

Page 73

Under Page 7-58. Coatings, delete in its entirety and replace with the following:

Coatings. The pipe coatings shall consist of six types designated as:

- Plain. The steel sheet shall have a protective coating of zinc (galvanizing), aluminum or aluminum-zinc alloy. The type of metallic coating furnished is at the option of the contractor. The same type of metallic coating shall be used for each culvert on a project.
- Fully Bituminous Coated and Paved Invert. In addition to one of the metallic coatings listed under Plain, the pipe shall be fully bituminous coated and have a bituminous paved invert.
- Fully Bituminous Coated and 100 Percent Paved. In addition to one of the metallic coatings listed under Plain, the pipe shall be fully bituminous coated and have a fully paved smooth bituminous interior.
- Polymer Coated. The steel sheet shall have a protective coating of zinc (galvanizing). Aluminum or aluminum-zinc alloy shall not be permitted. In addition, the steel sheet when formed into pipe shall have an interior polymer coating thickness of 0.010 inches and either an exterior polymer coating thickness of 0.003 inches minimum or the zinc coating.
- Polymer Coated, with a Bituminous Paved Invert. In addition to the zinc coating and the polymer coating listed under Polymer Coated, the pipe shall have a bituminous paved invert.
- Polymer Coated, 100 Percent Bituminous Paved. In addition to the zinc coating and the polymer coating listed under Polymer Coated, the pipe shall have a fully paved smooth bituminous interior.