

SALT RIVER PROJECT

STANDARD SPECIFICATION
FOR
INSTALLATION OF CAST-IN-PLACE NON-REINFORCED CONCRETE PIPE
(CE 02.611)

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1.0 GENERAL

1.1 This specification covers the Salt River Project requirements for the installation of cast-in-place pipe (CIPP).

1.1.1 All references to ACI, ASTM, and SRP Standards and Specifications shall mean the latest revision thereof.

1.2 DEFINITIONS

SRP - Salt River Project

Engineer - The Assistant General Manager - Corporate Engineering or his duly authorized representative.

Licensee - The person, firm or corporation responsible for installing CIPP under a SRP license.

Contractor - The person, firm or corporation actually installing CIPP either under contract from SRP or under contract from the holder of a SRP license.

1.3 TESTING

All of the provisions of ACI 346 CHAPTER 9 shall apply except as follows.

1.3.1 Section 9.6 - Hydrostatic Test: Leakage rate per inch of pipe diameter per mile per 24 hour is changed from 1000 gallons to 300 gallons, with a hydraulic head of 15 feet.

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1.3.2 A hydrostatic test may also be required if after the pipe has been repaired, there is evidence of significant leakage in more than one place, as determined by SRP.

1.4 WARRANTY

The Contractor shall be responsible for repair of all defects or failures in the Cast-In-Place pipe for a period of one (1) year after acceptance of the installation by the Engineer.

2.0 PRODUCT

2.1 MATERIALS

All references to materials shall conform to SRP Standard Specification CE 03.120 - Concrete for Cast-In-Place Concrete Pipe.

2.2 CONCRETE PROPERTIES

All concrete properties shall conform to SRP Specification CE 03.120 - Concrete for Cast-In-Place Concrete Pipe.

3.0 EXECUTION

3.1 TRENCH

All provisions of ACI 346 - Standard Specification for Cast-in-Place Nonreinforced Concrete Pipe - Section 3 shall apply except as follows.

3.1.1 EXCAVATION

The trench shall be excavated to established lines and grades and as shown on SRP approved plans.

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3.1.2 UNSTABLE SOILS

If the trench is not sufficiently stable, moisture content is more than 2% greater than optimum or density is less than 85% of maximum Proctor density by ASTM D-698, the trench shall be over-excavated and refilled. The over-excavation shall be no less than 2 feet each side of the normal trench width and the depth shall to stable grade or 4 feet below pipe bed grade, whichever occurs first. The trench shall be backfilled, compacted to 85% of maximum Proctor density by ASTM D-698 up to the top of the proposed pipe and re-excavated as specified. If stable bedding is not reached 4 feet below proposed pipe grade, the bottom 2 feet of the over-excavated trench shall be filled with granular material as defined in SRP Standard Specifications for Precast Concrete Pipe and the remainder of the trench backfilled, compacted and re-excavated as specified above.

If the Licensee chooses at his option and expense to substitute pre-cast concrete pipe the installation shall conform to the requirements of SRP Specifications for Pre-Cast Concrete Pipe.

3.2 PIPE DIMENSIONS AND TOLERANCES

3.2.1 All provisions of ACI 346 Section 5 shall apply with the following exceptions:

3.2.2 When rigid forms are used, they shall be strong enough to allow for the vibrating of the concrete and to permit workmem to place the concrete without causing distortion at any point. The forms shall be thoroughly cleaned and oiled prior to use and their form support systems shall be so constructed that previously placed

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shall not be damaged. Form line indentations shall not exceed 1/2 inch and care shall be taken when removing the forms to prevent damage to the pipe. The installation using rigid forms shall proceed such that the pipe is poured in a downstream direction. After the removal of forms, the inside of the pipe shall be inspected and any repairs required by the Engineer shall be made.

3.2.3 Section 5.4 of ACI 346 - Bearing Plates is eliminated.

3.2.4 Eliminate the phrase of "If the pipe diameter is 60 in. (1.5 m) or less" from the third sentence of Section 7.2 of ACI 346.

3.3 CONCRETE PLACEMENT

3.3.1 All provisions of ACI 346 - Chapter 7 shall apply with the exception that all references to two-stage construction shall be eliminated.

3.4 CURING, BACKFILLING AND CLEAN-UP

3.4.1 A clear polyethylene film with a nominal thickness of 0.0015 inch shall be placed on the exposed top surface of the pipe immediately after the pipe is poured. The film shall be secured in place with loose soil to assure continuous, adequate curing. In addition a 6 inch layer of loose moist soil shall be placed on the pipe after it takes it's initial set but no longer than 6 hours. Care shall be taken in the placement so as not to disturb or damage the pipe in any way. This soil is to be kept moist until backfill operations place additional fill material on the pipe.

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3.4.2 The last sentence of Section 8.1.1 of ACI 346 shall be changed to read:
Backfilling and compaction shall not start until the pipe has attained a compressive strength of 2000 PSI as determined by test results of concrete test cylinders molded and tested by the Engineer and/or his designated testing laboratory.

3.4.3 The required compaction density of backfill shall be as specified on SRP approved plans, SRP construction license or to the table shown in SRP Specifications for Precast Concrete Pipe. If the densities conflict, the License shall take precedence over the plans and the plans shall take precedence over the SRP Specifications for Concrete Pipe.

3.4.4 The Licensee's work will be subject to SRP inspection and approval and Maricopa County Bureau of Air Pollution Control Regulations.

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