Cast-In-Place Concrete Pipe

We Can Help You Convert Your Reinforced Concrete Storm Drain Pipe to Cast In Place Pipe and Save Up to 40% on Your Storm Drain System.

CIPCP Process

When plans call for storm drains or a low-head irrigation system, Cast-in-Place Concrete Pipe offers savings of both time and money. Cast-in-Place is made of portland cement concrete, cast monolithically in a properly prepared trench using specifically designed equipment. The trench is dug with a round bottom bucket and the earthen trench is the "outside form."

Each CIPCP machine, made for a specific pipe size, is self-propelled and has internal tampers that distribute and consolidate the concrete thoroughly against the trench wall and interior forms. The aluminum interior forms, about four feet long, are inserted into the middle of the CIPCP machine and hooked together to provide continuous support during a day's pour. The forms are held in place by struts and after the concrete has set for several hours, the forms are released and removed.

Cast-in-Place Concrete Pipe (CIPCP) is being used for storm drains and irrigation by numerous city, county, state, and federal agencies throughout the western U.S. Installations have also been made in India, Mexico, Puerto Rico, and Canada. More than half million lineal feet were installed throughout California in 1990.

Substantial test data are available from a variety of sources. The Salt River Project, AZ, conducted nearly 300 conveyance tests on CIPCP. Results published in 1966 indicated 91% of the pipelines had a Mannings' "n" of 0.014 or less. Structural tests have been made by Salt River Project, various agencies and California State University at Sacramento. "The tests conclusively demonstrate the ability of CIPCP to sustain normal traffic loads. " This conclusion is supported by mathematical analysis and thousands of successful installations.

The earliest use of cast-in-place concrete pipe was in 1922 by Turlock Irrigation District to replace open irrigation laterals. Nearby districts developed similar replacement programs. The first pipelines were constructed with flat bottoms, short vertical sides and arched tops formed by wooden planks. This process was replaced by a two step procedure that produced a circular pipe. The top half was constructed after the bottom half. All of the early procedures created undesirable cold joints along the pipe.

Development work began in 1949 on a machine that would construct the entire pipe circumstances in one step. By the late 1950's, No Joint Concrete Pipe Company of Yuba City, CA, was marketing Cast-In-Place Concrete Pipe (CIPCP) throughout the southwestern United States. Although many improvements have been made, the basic process remains unchanged after nearly 60 years.

Technical Highlights

- Cost savings of 20-40% compared to precast pipe
- Sixty years and over 15 million linear feet of history
- Utilized by numerous federal, state, and local agencies
- Exceeds normal highway (H-20) loading requirements
- Hydraulic characteristics and longevity similar to precast
- Backfill can range from two feet to unlimited
- Supported by ACI standard specifications (ACI 346-09)
- Technical data available

Information Table for CIPP

Pipe Diameter	Wall Thickness	Normal Yield	Bucket Width	Min Radius for Curves	Pipe Zone Spoils	Pipe Machine
(in)	(in)	(lf per cu yd)	(in)	(ft)	(cu yd per lf)	(apprx weight)
24	3.0	11.0	31	60	0.20	4,200
30	3.0	9.5	37	60	0.30	4,400
36	3.5	7.5	44	60	0.40	5,400
42	4.0	5.5	51	60	0.55	6,600
48	5.0	3.7	59	60	0.70	8,000

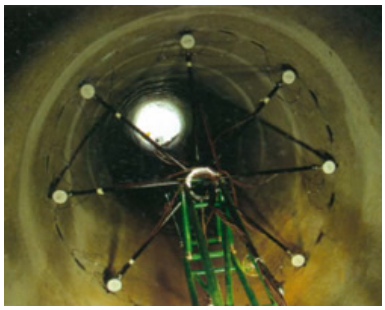
54	5.5	3.0	66	70	0.85	9,500
60	6.0	2.75	73	80	1.00	10,300
66	6.5	1.9	80	90	1.20	11,000
72	7.0	1.8	87	100	1.50	12,800
78	7.5	1.5	94	110	1.70	13,500
84	8.0	1.2	101	120	2.00	14,000
96	9.0	1.0	115	145	2.60	15,300
108	10.5	0.9	130	170	3.30	17,900
114	11.0	0.75	137	195	3.80	19,200
120	12.0	0.6	145	205	4.20	20,600

Front view of Boat.

Cast in Place.

Rear View of 96" Starting.

120" Cast in Place.



Strain gauges for structural test at C.S.U. at Sacramento.

Inspection of completed Cast-In-Place Concrete Pipe.