



# Technote

NCSPA Technical Notes are prepared by the NCSPA Technical Advisory Committee to provide up-to-date technical information about drainage structures and their proper use and application. User comments or questions are welcome. ■ *Technical Notes are not intended for detailed design purposes.*

## Corrugated Steel Pipe Joint Leakage Testing

### CSP JOINING SYSTEMS

The joining systems for CSP consist of a number of types of coupling bands, coupling sleeves, and gasket systems that can be selected depending on the application. The applications can be for maintaining alignment, structural integrity of the pipe connection, prevention of soil infiltration or limiting the infiltration and exfiltration of water. Each coupling system has its special advantages.

### JOINING SYSTEMS LEAKAGE TESTING

In CSP sites where excessive water infiltration is expected, a gasketed joining system is required. The gasketed joining system shall meet the leakage requirements of ASTM A 760, Section 9.2.2.2. In this section, the joining system shall be tested to establish a leakage rate not to exceed 200 gallons per inch diameter per mile per day. In order to certify that certain joining systems met these requirements, the NCSPA had testing performed on selected configurations of these joints.

### TESTING SCOPE

The scope of the test was to certify that corrugated steel pipe (CSP) joining systems with annular, partially corrugated and flat bands and a variety of gasket combinations would meet ASTM A760/A760M, Section 9.2.2.2 leakage requirement.

### CSP JOINING SYSTEMS TESTED

All of the bands were 12 inches wide and made of 18-gage galvanized steel material. Three different gasket materials were used in these joining systems and the ends of the bands had either a die-formed angle or dog-bone connector welded near the ends of the bands. Either (2) or (3) carriage bolts were used to draw the connectors together.

Diameter (inches)	No. of Reroll Corr	Band Coupler Type	Gasket Material	Leakage Criteria (Fl-oz) (@ t=30 min)	Leakage @ 0 Pressure (psi)
24	3	Partially Corrugated	(2) 13/16" O-ring	7.27	0
24	4	Annular	3/8" Neoprene	7.57	0
24	4	Annular	Double Bidco Wrap	7.57	0
24	3	Flat	3/8" Neoprene	7.37	0