



**Western
Technologies
Inc.**

The Quality People
Since 1955

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June 3, 1996

Mission Clay Products/Mission Rubber Company
P.O. Box 549
Corona, California 91718

Attn: Mr. Edward J. Loftus, P.E.
Vice President and Director of Engineering

Re: Large Diameter Adjustable Repair Coupling Test

Job No. 2126JC029

INTRODUCTION

In accordance with your request and authorization, Western Technologies Inc. (WT) has witnessed the testing of a Mission Rubber Company Large Diameter Adjustable Repair Coupling. This work was performed at the Building Products manufacturing facility located at 4850 West Buckeye Road in Phoenix, Arizona. This report documents the test methods and equipment used and provides test results.

TEST PROGRAM

On May 15, 1996, Mr. Edward Elnicky, P.E., of WT witnessed the testing of a Mission Rubber Company Large Diameter Adjustable Repair Coupling in accordance with Section 208-2.2.4 Laboratory Test of Joint, *"Greenbook" Standard Specifications For Public Works Construction, 1994 Edition*. ASTM C425 *Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings* procedures was also used in conjunction with this work.

The test equipment consisted of a compression machine to perform the shear loading test. In addition, a water pressure tank with pressure gauge and regulator was used to perform the internal hydrostatic pressure test. A hydraulic jack was used to deflect one end of the pipe. The gauges, hydraulic system and hydrostatic system were checked and had been recently calibrated by National Calibration, Inc., Phoenix, Arizona. All equipment and accessories were in good operating condition.

TEST PROCEDURE

Two representative samples of 15-inch diameter vitrified clay pipe were selected for the test. The two pieces of pipe were 4 feet long with plain ends and had outside diameters of 18.43 and 18.53 inches.

T-bolt clamps were partially unfastened to allow the coupling to slide over one end of the 15-inch diameter pipe. The coupling was adjusted until one half of it was attached to one end of the pipe. The other side of the coupling was then slid over the end of the second pipe. After some minor adjustments, all T-bolt clamps were secured in place.

After a final inspection, the overlap on the shear ring was 4.25 inches and the outside diameter of the shear ring was 19.35 inches. A T-bolt was located on the top of the coupling. The distances as measured from top T-bolt to the other two T-bolts were 23.5 and 18.75 inches.

The joint was then tested for internal hydrostatic pressure (10 pounds per square inch [psi] for 10 minutes), deflection (1.5 inches from the longitudinal axis [ASTM C425, Table 4]) and shear load (deflection at 1.5 inches and a load of 2250 pounds). The shear load was placed 4.5 inches from the edge of the coupling.

TEST RESULTS

The tests (pressure, deflection and shear) were performed continuously. The total time to perform all tests was one hour. This coupling met or exceeded the requirements of Section 208-2.2.4 Laboratory Test of Joint, "Greenbook" Standard Specifications For Public Works Construction, 1994 Edition. Test results are provided in Table 1.

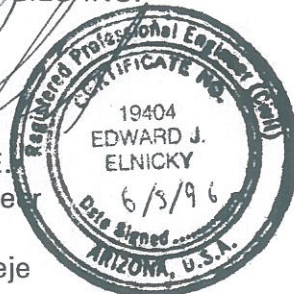
TABLE 1 - TEST RESULTS						
Pipe Position	Pressure (psi)	Time (min)	Deflection (in.)	Shear Load (lbs)	Elapsed Time (min)	Remarks
Straight	10	10	-	-	10	No Leakage
Deflected	10	10	1.5	-	20	No Leakage
Deflected	10	10	1.5	2250	30	No Leakage
Deflected	10	30	1.5	-	60	No Leakage

CLOSURE

Should you have any questions regarding this information, or if we can be of further service, please do not hesitate to contact us.

Sincerely,
 WESTERN TECHNOLOGIES INC.


 Edward J. Elnicky, P.E.
 Senior Materials Engineer



Reviewed by:


 W. R. Meier, Jr., Ph.D., P.E.
 Senior Materials Engineer

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