

Manhole Tests Required

Water Test: A leakage test shall be made for each manhole. This test shall be made by plugging all the openings into the manhole and filling the manhole with water to an elevation not greater than one foot below a fixed point on the metal manhole rim. The water should be introduced into the test manhole at least four hours in advance of the official test period to allow the manhole material to become saturated. The manhole shall then be refilled to the original water level at the start of the official test period. After a period of four hours, the water elevation shall be measured from the same point on the manhole rim and the loss of water during the test period calculated; enough water shall be measured into the manhole to restore the water to the level existing at the beginning of the test, and the amount added taken as the total leakage.

The allowable leakage at the manhole during the four hour test period shall be 0.55 gallons per each foot of manhole depth (for a 4' diameter manhole), as measured from the lowest point in the manhole to the original water level. Should an initial test show excess leakage in the manhole, the manhole shall be waterproofed by grouting and/or other approved waterproofing methods satisfactory to the Engineer and the test repeated until an acceptable total leakage is obtained. For a 5' diameter manhole, allowable leakage shall be 0.85 gallons per each foot of manhole depth.

(Alternate) Vacuum Test: The contractor, at his option, may choose to vacuum test manholes rather than following the water test described above. Each manhole shall be tested immediately after assembly and prior to backfilling. Vacuum testing requires the following steps:

- (a) All lift holes shall be plugged with an approved non-shrink grout.
- (b) All pipes entering the manhole shall be plugged, taking care to securely brace the plug from being drawn into the manhole.
- (c) The test head shall be placed at the inside of the top of the cone section and the seal inflated in accordance with the manufacturer's recommendations.
- (d) A vacuum of 10 inches of mercury shall be drawn and the vacuum shut off. With the valves closed, the time shall be measured for the vacuum drop to 9 inches. The manhole shall pass if the time is greater than 60 seconds for 48 inch diameter, 75 seconds for 60 inch diameter, and 90 seconds for 72 inch diameter manholes.

ENGINEERING DEPARTMENT		CITY OF MERCED, CA.	
SEWER MANHOLE TESTING			S-9A
DRAWN: KGE	APPROVED BY:	DATE	
ENG.	<i>David L. Tucker</i>	<i>01/22/02</i>	SHEET OF
REVISED: 1/02	CITY ENGINEER		