
15 November 2024

SP 4.8-003 (2013)

**Standard Specifications for Construction
City of Waco 2013
Special Provision Section 4.8 Sanitary Sewer**

The Standard Specifications for Construction City of Waco 2013
Section 4.8 Sanitary Sewer

Part 3: Execution

A. Construction Methods

3. Sanitary Sewer Manholes

c. Testing of Manholes

is hereby deleted in its entirety and replaced as follows for all Developer projects submitted to the City January 1, 2025 and thereafter; for all City projects with bid opening date of January 1, 2025 and thereafter; and for right-of-way permit requests received November 18 and thereafter:

Part 3: EXECUTION

A. CONSTRUCTION METHODS

3. Sanitary Sewer Manholes –

c. Testing of Manholes -

All manholes shall be tested for leakage. The Contractor shall select and use exclusively for the project one of the two methods (A) Texas Test as modified or (B) American Society for Testing and Materials Test of Texas Administrative Code, Title 30 Environmental Quality, Part 1 Texas Commission on Environmental Quality, Chapter 217 Design Criteria for Domestic Wastewater Systems, Subchapter C Conventional Collection Systems, Rule §217.58 Testing Requirements For Manholes, prior to backfilling manholes. Additionally, manholes shall also be tested after completion of backfilling to final surface in like manner adapted for backfilled manhole. For manholes in pavement sections this second testing cycle shall be done after placement of final pavement surfacing.

Vacuum Testing. Contractor must perform vacuum testing according to subparagraph (A) or (B) of this paragraph. If a manhole fails the vacuum test, the Contractor must apply grout to the exterior of the excavated manhole before retesting the manhole.

(A) Texas Test (modified).

(i) To perform a vacuum test, Contractor shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.

(ii) Grout may not be placed in horizontal joints before testing.

(iii) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.

(iv) Contractor shall use a minimum 60 IN./lb torque wrench to tighten the external clamps that secure a test cover to the top of a manhole.

(v) A test head must be placed at the inside of the top of a cone section, and the seal must be inflated in accordance with the manufacturer's recommendations.

(vi) A vacuum of 10 IN. mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off.

(vii) The time shall be measured and recorded for the vacuum to drop from 10 IN. to 9 IN. mercury with all valves closed.

(viii) A manhole passes the test if the time for the change in vacuum meets the following Table, Minimum Acceptable Test Times based on ASTM C1244-20.

MINIMUM ACCEPTABLE TEST TIMES

Time (measured in seconds)

Depth - feet (Less than or equal to)	Manhole Diameter (measured in inches)												
	48	54	60	66	72	78	84	90	96	102	108	114	120
4	10	12	13	15	16	18	19	21	23	24	25	27	29
6	15	18	20	22	25	26	29	31	34	36	38	41	43
8	20	23	26	29	33	35	38	41	45	48	51	54	57
10	25	29	33	36	41	44	48	52	56	60	63	67	71
12	30	35	39	43	49	53	57	62	67	71	76	81	85
14	35	41	46	51	57	62	67	72	78	83	89	94	100
16	40	46	52	58	67	70	76	83	89	95	101	108	114
18	45	52	59	65	73	79	86	93	100	107	114	121	128
20	50	53	65	72	81	88	95	103	111	119	126	135	142
22	55	64	72	79	89	97	105	114	122	131	139	148	156
24	59	64	78	87	97	106	114	124	133	143	152	161	170
26	64	75	85	94	105	114	124	134	144	155	164	175	185
28	69	81	91	101	113	123	133	145	155	167	177	188	199
30	74	87	98	108	121	132	143	155	166	178	189	202	213

(B) American Society for Testing and Materials (ASTM) Test.
The Contractor may utilize manhole testing that meets the
requirements of current ASTM C1244 as provided by the Contractor.

If the manhole does not pass the test, for the method of testing
selected (A) or (B), it shall be repaired in accordance with the test
procedure and the project specifications. Thereafter the test and
repair process repeated until a passing test is completed.

As is customary for all acceptance tests, the Engineering
Inspector shall record the results of all manhole tests in the project
daily log. A copy of daily logs shall be maintained in the Engineering
Division files.

Sincerely,

Thomas M. Dahl

Thomas M. Dahl, P.E.