

## CONSULTANT PROCEDURES & D

- 6.2. For pipe 4" and under (optional): Hot Dip Galvanized, drop-in type female expansion anchor.
- 7. Hangers
  - 7.1. Hangers required for horizontal piping in manholes shall be as follows and all as manufactured by Anvil International, North Kingstown RI or approved equal:
    - 7.1.1. Uninsulated pipe: Adjustable clevis, Figure 260, Hot Dipped Galvanized.
    - 7.1.2. Insulated Pipe: Adjustable clevis, Figure 260, Hot Dipped Galvanized.
    - 7.1.3. Copper Pipe: Adjustable tubing ring, plastic coated, Figure CT-99C or equal).
- 8. Structural Steel
  - 8.1. Miscellaneous structural steel, plates, etc. for pipe supports and anchors in trenches and manholes shall be ASTM A36 of sizes and shapes needed, no tubular members.
  - 8.2. All structural steel members and end plates shall be hot dipped galvanized ASTM, A123. Any galvanizing damaged by welding or erection shall be repaired with cold galvanizing per ASTM A780. Surface preparation shall include power disk sanding the abraded or welded area to bright metal.
  - 8.3. Miscellaneous plates and pipe used for supports/anchors shall be cleaned and painted with zinc rich paint.
  - 8.4. Welding of structural steel supports and anchors shall be completed with E70XX electrodes.
- 9. Expansion Bolts
  - 9.1. Expansion bolts and nuts used in connection with pipe support structures shall be Hot Dipped Galvanized "Kwik Bolt III" as manufactured by Hilti Inc., Tulsa OK, or approved equal installed per manufacturer's recommendations. Minimum embedment shall be as follows:

<u>Bolt Diameter, in.</u>	<u>Embedment, in.</u>
1/2	3-1/2
5/8	4
3/4	4-3/4
1	4-1/2

**B. Installation**

- 1. General
  - 1.1.

## 2. Spacing

2.1. The maximum support spacing for horizontal piping shall be as follows:

<u>Steel Pipe (MPS, MPC, PC)</u>	<u>Steam &amp; Liquids</u>
2" and under	6'
6", 8"	12'
10", 12", 14", 16", 24"	24'
 <u>Copper Tube</u>	
1/2", 3/4"	5'
1"	6'
1-1/4"	7'
1-1/2", 2"	8'
2-1/2"	9'
3" and above	10'

Supports in chase shall be installed off the floor of chase a minimum of 1".

**C. Commissioning**

1. All piping must have needed supports installed and properly adjusted prior to turning the system on.

**REFERENCES**