SPECIFICATION FOR CRETEX MANHOLE INSERTS

1. SCOPE
1.1 Contractor shall furnish Cretex Manhole Inserts as called for in the specification.
1.2 The Cretex Manhole Insert shall effectively reduce or prevent surface water inflow through manhole covers. The insert shall also prove effective in keeping grit, sand, salt, chemical spills, foreign objects, road oils, etc. from entering the manhole and collection system lines.
1.3 Cretex Manhole Inserts shall be manufactured specifically for use in collection system manholes, and shall be supplied by Cretex Specialty Products, N16 W23390 Stoneridge Drive, Suite A, Waukesha, WI 53188.

2. MATERIAL & DESIGN
2.1 The Cretex Manhole Insert shall be manufactured from corrosion proof material suitable for atmospheres and conditions commonly found in wastewater collection systems.
2.2 The Cretex Manhole Insert shall be manufactured from a “durable” High Density Polyethylene Copolymer material that meets ASTM Specification Designation D-1248 Class A, Category 5, Type III. This material shall have superior stress crack resistance, combined with a high-impact strength.
2.3 The Cretex Manhole Insert shall have a minimum impact brittleness temperature of -105°F in accordance with ASTM D 746-70.
2.4 Softening temperature shall be 254°F, meeting all requirements of ASTM D 1525-70.
2.5 The Cretex Manhole Insert shall have a tensile strength of 3700 psi and an elongation factor of 800%, meeting all requirements of ASTM D 638-71A.
2.6 The thickness of the Cretex Manhole Insert shall be a uniform 1/8”.
2.7 The Cretex Manhole Insert shall be manufactured to dimensions provided by the purchaser to allow easy installation within the manhole frame.

3. VENTING
3.1 The insert shall have one of the following systems for relieving gas and/or vacuum pressure from the manhole:
3.2 Two 3/16” holes are installed 180° apart, approximately 1” from the top of the insert, to allow for constant ventilation. This “no valve” of ventilation should not be affected by grit accumulation, nor have any moving parts subject to corrosion. The venting system shall not allow water to completely fill the insert, which during cold weather could freeze and lift the manhole cover.
3.3 At the discretion of the specifying agent, an alternative ventilation system utilizes one or two valves manufactured of a Polypropylene Ethylene compound. The valve(s) material shall be unaffected by temperatures within a range of –70°F to 350°F. The valve body and components shall be corrosion and wear resistant.
and be designed to release gas pressure at approximately 1 psi, and vacuum pressure at approximately 2 psi.

4. **GASKET** (optional)
4.1 The insert shall have either a closed cell neoprene or cross-linked polyethylene gasket installed upon the insert rim by the manufacturer.

5. **MEASUREMENT**
5.1 The Cretex Manhole Insert shall be manufactured to fit the manhole frame rim upon which the manhole cover rests. Exact measurements shall be required from the purchaser.
5.2 Instructions and measuring diagrams will be made available to the purchaser, to insure a proper fit of the Cretex Manhole Insert within the manhole frame.

6. **INSTALLATION**
6.1 The manhole frame rim shall be cleaned of all dirt and debris before placing the Cretex Manhole Insert upon the rim.
6.2 The Cretex Manhole Insert shall be fully seated around the manhole frame run.
6.3 The manhole cover is replaced as before, and the installation is complete.

7. **REMOVAL**
7.1 The Cretex Manhole Insert shall have a corrosion resistant nylon strap installed for easy removal and re-installation into the manhole frame.

8. **ACCEPTANCE**
8.1 Completed installations must meet engineer’s approval.

9. **TESTING**
9.1 After installation of the Cretex Manhole Insert, the complete unit shall not allow more the 5 gallons of inflow per 24 hours.