



WHIRLYGIG SAMPLE SPECIFICATIONS

Whirlygig is a **new** method and apparatus for installing manhole riser/collars for which specifications need to be written. The following is intended to help.

A clean specification would contain these elements:

A) Monolithic Pour.

That the riser or riser/collar shall be **cast-in-place**.

B) Accuracy of Placement.

The top of the steel manhole ring shall be placed to **within $\pm 1/8"$** , one quarter inch lower than the adjacent asphalt surface as measured parallel to traffic flow.

C) Excavation.

Riser/collar excavation shall be a minimum of x " in diameter and no less than y " from the edge of the steel ring to the edge of the excavation. The depth of the excavation is to extend down to the concrete manhole cone plus one inch around the top of the cone.

D) Specify:

Riser only D₁); Riser with partial height Collar D₂), or a full Riser/Collar D₃).

D₁) A monolithic pour of concrete shall be made filling the excavated cavity to the bottom flange of the steel manhole ring.

D₂) A monolithic pour of concrete shall be made filling the excavated cavity to within z " of the top of the steel manhole ring (thereby partially encapsulating the steel ring).

D₃) A monolithic pour of concrete shall be made filling the excavated cavity to the top of the steel manhole ring.

E) Quality of Materials:

E₁) Concrete:

Although there is commonality of materials each agency has its own specifications for cement, aggregate, mixing and placing. Call for those specs which meet the local criteria for the level of traffic specified.

E₂) **Thermoplastic concrete form:**

The thermoplastic form shall meet these ASTM standard specifications for linear low density polyethylene.

Physical Properties:

Density	ASTM D-1505
Melt Flow Index 8/10 Min.	ASTM D-1238
Environmental Stress Crack Resistance, Hours	ASTM D-1693
Tensile Strength, Yield, Mpa	ASTM D - 638
Elongation at Break %	ASTM D - 638
Flexural Modulus, Gpa	ASTM D – 790

Thermal Properties:

Deflection Temperature at 0.46 Mpa, °C	ASTM D - 648
Deflection Temperature at 1-8 Mpa, °C	ASTM D - 648
Vicat Softening Point, °C	ASTM D – 1525

Other:

Will be UV stabilized
Polyethylene MSDS copy to be furnished by the manufacture

The inside form of the cast-in-place concrete riser/collar shall be tubular in shape and sufficient in strength to withstand a minimum vertical static load of 1,000 lbs., and a minimum radial static load of 150 lbs/sf., prior to pouring concrete. The form shall be left in place to protect the riser from corrosive acids and other elements capable of degrading concrete.