

SECTION 09954 - POLYETHYLENE SHEET OR TUBE ENCASUREMENT

PART 1 - GENERAL

1.1 DESCRIPTION

This section includes materials, application, and inspection of polyethylene sheet or tube encasement for buried steel and iron pipe, fittings, couplings, valves, and appurtenances.

1.2 RELATED WORK SPECIFIED ELSEWHERE

The Work of the following Section applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.

1. Section 01300 - Submittals.
2. Section 09800 - Painting and Coating

1.3 SUBMITTALS

- A. Submit shop drawings in accordance with the standard specifications.
- B. Submit manufacturer's catalog literature and product data sheets describing the physical, chemical and electrical properties of the encasement material.

PART 2 - MATERIALS

2.1 POLYETHYLENE MATERIAL

The encasement shall consist of two (2) layers of polyethylene sheet or tube of at least 8 mils thickness each conforming to AWWA C105.

2.2 PLASTIC ADHESIVE TAPE

Use 2-inch wide plastic adhesive tape such as Calpico Vinyl Tape, Polyken 900, Scotchwrap 50, or approved equal.

PART 3 – EXECUTION

3.1 APPLYING TUBE ENCASUREMENT TO BURIED PIPE AND FITTINGS

- A. Cut polyethylene tubes 2 feet longer than the length of pipe to receive the encasement. Prior to placing the length of pipe into the trench, raise the pipe section and slip the polyethylene tube over the spigot end of the pipe. Bunch up the two (2) layers of tubes in accordion fashion between the spigot end and the supporting sling.

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- B. Lower the pipe section into the trench and seat the spigot end into the bell of the previously installed pipe. Provide a shallow hole at the bell to facilitate the joint overlap.
- C. Remove the sling from the pipe. Raise the pipe from the bell end about 3 or 4 inches and slip the bunched up polyethylene tube along the full length of pipe. Leave 1-foot of bunched up polyethylene tube at each end of the pipe for joint overlap.
- D. To make the joint overlap, pull the polyethylene tube from the bell end over the pipe joint to the spigot end. Fold the tube around the pipe and secure with three circumferential wraps of 2-inch wide plastic adhesive tape or a plastic tie strap. Then pull the bunched up polyethylene tube on the spigot end over the wrapped pipe joint to the bell end. Fold tube and secure with tape as previously described or a plastic tie strap.
- E. Pull the loose polyethylene tube on the pipe snugly around the pipe barrel. Fold the excess material over at the top of pipe and secure the fold with 6-inch long strips of 2-inch wide plastic adhesive tape at 3 feet on center.
- F. Polyethylene sheet will not be allowed as a substitute for tube when required for installation on buried pipe.

3.2 APPLYING SHEET ENCASUREMENT TO BURIED VALVES

Wrap valves by pulling the bunched up polyethylene tube (where installed) from the adjacent pipe over the bells or flanges of the valve. Secure the tube to the valve body with 2-inch wide plastic adhesive strips wrapped around the valve body. Then wrap the valve with a flat sheet of polyethylene. Place the sheet under the valve and fold in half. Extend the sheet to the valve stem and secure the sheet in place with 2-inch wide plastic adhesive tape. Apply the second layer and secure with tape. Secure the sheets with tape around the valve stem below the operating nut and around the barrel of the connecting pipe to prevent the entrance of soil. Pour concrete anchor and support blocks after the wrap has been properly placed.

3.3 APPLYING SHEET ENCASUREMENT TO BURIED FITTINGS, COUPLINGS, AND APPURTENANCES

- A. Wrap buried ferrous metal pipe fittings, couplings, adapters, and appurtenances with polyethylene sheet. Overlap the adjoining pipe or fitting a minimum of one-foot and secure in place with 2-inch wide plastic adhesive tape. Apply a second layer and secure with tape around the barrel of the connecting pipe to prevent the entrance of soil. Pour concrete anchor and thrust blocks after the wrap has been placed.
- B. Wrap base elbows and risers of hydrants and backflow prevention assemblies with 2 layers of polyethylene sheet and secure in place with 2-inch wide plastic adhesive tape. Extend the wrap to the finish ground level of the assembly. Secure the sheets with tape around the ends to prevent the entrance of soil. Pour concrete anchor and support blocks after the wrap has been placed.

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3.4 REPAIR OF POLYETHYLENE MATERIAL

Repair polyethylene material that is damaged during construction. Use polyethylene sheet, place over damaged or torn area, and secure in place with 2-inch wide plastic adhesive tape.

**** END OF SECTION ****