GENERAL

This Construction Standard covers installation of polyethylene encasement on cast iron or ductile iron pipe, fittings, valves, and other appurtenances.

MATERIAL

Polyethylene shall be according to District Specification 119, "Specification for Materials".

INSTALLATION

Polyethylene encasement shall be installed in accordance with this Construction Standard, and AWWA C105 on all cast iron and ductile iron pipe and fittings unless otherwise specified on the drawings.

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* The polyethylene encasement shall prevent contact between the pipe and the surrounding backfill and bedding material, but for installations above the water table, it is not intended to be a completely airtight or watertight enclosure. Lumps of clay, mud, cinders, etc., on the pipe surface shall be removed prior to installation of the polyethylene encasement. During installation, soil or embedment material shall not be trapped between the pipe and the polyethylene.

* The polyethylene film shall be fitted to the contour of the pipe creating a snug encasement with minimum space between the polyethylene and the pipe. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene caused by backfilling operations. Overlaps and ends shall be held in place with adhesive tape.

* Added Text 
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INSTALLATION ON PIPING

Only polyethylene film in the form of tube shall be allowed on piping. The minimum size tube for each pipe size shall be as shown in Table 1.

TABLE 1

Nominal Pipe Size (in.)	Minimum Flat Tube Polyethylene Width (in.)
4	14
6	16
8	20
12	27
16	34
20	41
24	54
30	67
36	81
42	81
48	95
54	108
60	108
64	121

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* Cut a section of polyethylene tube approximately 1' longer than the pipe section. Remove all lumps of clay, mud, cinders, or other material that might have accumulated on the pipe surface during storage. Slip the polyethylene tube around the pipe, starting at the spigot end. Bunch the tube accordion-fashion on the end of the pipe. Pull back the overhanging end of the tube and circumferentially tape it to the barrel of the pipe behind the insertion line. After assembly of the joint, the tape should be as close to the face of the bell as possible but not so close to the spigot end that it interferes with the gasket.

* Take up the slack in the tube along the barrel of the pipe to make a snug, but not tight, fit. Fold excess polyethylene back over the top of the pipe and use pieces of tape across the fold to securely hold it. This step is extremely important to prevent sagging of the film at the bottom of the pipe.

* Dig a shallow bell hole in the trench bottom at the joint location to facilitate installation of the polyethylene tube. Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe.

* Move the sling (i.e., no chains or metal, use non-abrasive sling material) to the bell end of the pipe and lift the pipe slightly to provide enough clearance to easily slide the tube over the remaining barrel of the pipe. Snugly fold over the excess wrap using tape to hold it in place. Note: Make sure that no dirt or other bedding material becomes trapped between the wrap and the pipe.

* Secure the polyethylene in place behind the preceding bell using a circumferential wrap of tape. Make the overlap of the polyethylene tube by pulling back the bunched polyethylene from the preceding length of pipe and ensure there is at least a 12" overlap.

* Place another circumferential wrap of tape on the overlapping polyethylene, securing it to the spigot side of the joint.

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* Carefully backfill the trench according to M.U.D. construction standards. To prevent damage during backfilling, allow adequate slack in the tube at the joint. Backfill should be free of cinders, rocks, boulders, nails, sticks, or other materials that might damage the polyethylene. Avoid damaging the polyethylene when using tamping devices.

* M.U.D. uses AWWA C105 Modified Method A in wet trench conditions for all pipe installation regardless of the presence of ground water. Circumferential wraps of tape shall be applied at 2' intervals along the barrel of the pipe, as shown in Fig 1.

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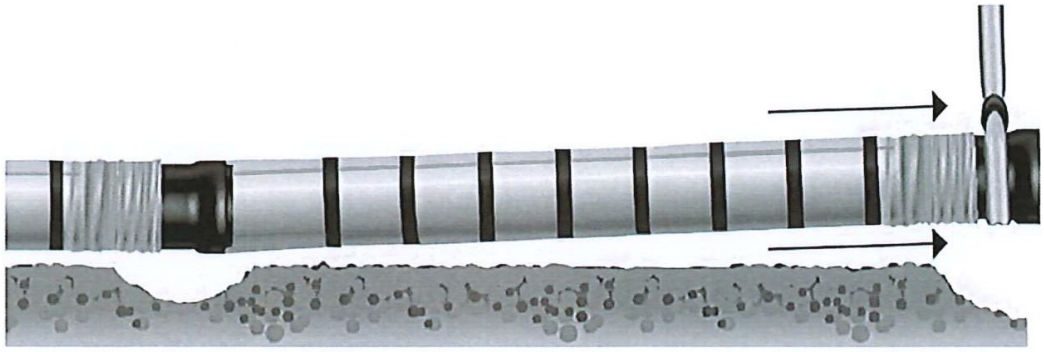

Fig. 1

NOTE: *One length of polyethylene tube for each length of pipe, overlapped at joint.*

* NOTE: *Take up the slack in the tube to make a snug but not tight fit. Fold the excess back over the top of the pipe and use pieces of tape across the fold to securely hold it.*

* Added Text
*** Revised Drawing

INSTALLATION ON ODD SHAPED APPURTENANCES

When it is not practical to wrap valves, tees, crosses, and other odd shaped pieces in a tube, wrap with a flat sheet or split length of polyethylene tube by passing the sheet under the appurtenance and bringing it up around the body. Make seams by bringing the edges of the polyethylene sheet together, folding over twice, and taping down. Handle width and over laps at joints as described in the Installation On Piping section. Tape polyethylene securely in place at valve stems and other penetrations.

1. REPAIRS

Repair cuts, tears, punctures, or damage to polyethylene with adhesive tape or with a short length of polyethylene sheet or a tube cut open, wrapped around the pipe to cover the damaged area, and secured in place.

2. BACKFILL

Special care shall be taken to prevent damage to the polyethylene encasement when placing backfill. Backfill material shall be free from cinders, refuse, boulders, rocks, stones, or other material that could damage the polyethylene.

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