

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: SMOOTH INTERIOR CORRUGATED
POLYETHYLENE PIPE

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We are transmitting herewith items 18603.9712 through 18603.9724. These are the pay items for the 12 inch to 24 inch diameter smooth interior corrugated polyethylene pipe (PE). Although larger sizes are available from manufacturers, we are still testing and evaluating these sizes before allowing them as standards on Department Contracts. If designers desire the larger sizes, please contact the Final Plan Review Bureau at (518) 457-4093.

The designer should consider the following points when considering an application for PE pipe.

1. This pipe should be designed using a Manning "n" value of 0.013.
2. Maximum height of cover is 15 feet.
3. The minimum cover height is the same as corrugated steel. (12" from crown to subgrade).
4. The anticipated service life of PE pipe is 70 years, regardless of zone.
5. Although plastic end sections are available, because of the potential for vandalism, metal end sections should be used.
6. Partial height headwalls will require a special anchor bolt detail on the plans. Use the detail given in EI 83-42 but add a 1 5/16" washer. Ordinary Hex head nuts can be used.
7. The density of PE pipe is less than water, therefore when wet conditions are expected and dewatering may be a problem, the PE pipe will float and should not be specified.
8. The product may be used in both open and closed drains.
9. Due to the flexibility of the pipe, problems with holding line and grade may require extra care when backfilling the trench. Placing backfill material at the midlength point of the pipe section just placed will help hold the pipe from moving during normal backfill operations.

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Until contract prices are established, use the prices for 16 or 14 gage corrugated steel paved invert pipe for estimate purposes.

This does not replace item 15603.85 - Optional drainage pipe.

The new items will be effective with the letting of 10/27/88.

This specification is a Main Office insert and copies will be inserted into proposals by the Final Plan Review Bureau.

ITEM 18603.97XX SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE

DESCRIPTION

The work shall consist of furnishing and installing smooth interior corrugated polyethylene pipe for drainage in accordance with this specification and in conformity with the lines, grades and sections shown on the plans.

MATERIALS

The smooth lined corrugated polyethylene pipe shall conform to the requirements of AASHTO M294.

The pipe also must exceed the minimum engineering property values as specified in Section 18 of the AASHTO Bridge Design Manual. These properties are listed below:

Section Properties
PE Corrugated Pipes

I.D. (in.)	O.D. (in.) (Typical)	A (sq. in./ft.)	C (in.) (Maximum)	I (in.4/in.)
12	14.0	1.50	0.625	0.024
15	17.7	1.91	0.875	0.053
18	21.1	2.34	0.851	0.062
24	27.5	3.14	1.134	0.116

Basis of Acceptance: Acceptance of this material will be based on the manufacturer's name appearing on the Department's Approved List and the manufacturer's certification of compliance with these requirements.

CONSTRUCTION DETAILS

The following provisions of Section 603 - Culverts and Storm Drains shall apply for the installation of the pipe:

\$603-3.01	Excavation
\$603-3.02A & B	Laying Pipe, General & Handling and Assembly of Pipe
\$603-3.03	Bedding and Backfilling Pipe
\$603-3.04A	Damaged Pipe and Repair General

METHOD OF MEASUREMENT

This work will be measured as the number of Linear Feet of pipe installed. Measurement will be made along the bottom center line of the pipe.

BASIS OF PAYMENT

The requirements of §603-5.01 shall apply.

Payment will be made under the following items:

Item 18603.12	SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE, 12" DIAMETER
Item 18603.15	SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE, 15" DIAMETER
Item 18603.18	SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE, 18" DIAMETER
Item 18603.24	SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE, 24" DIAMETER