I. SCOPE

This method describes the specific procedures for the quality assurance of the following products manufactured for NYSDOT projects.

- Smooth Interior Corrugated Polyethylene Pipe (706-12)
- Perforated Corrugated Polyethylene Underdrain Tubing (706-13)
- Corrugated Interior Polyethylene Pipe (706-14)
- Polypropylene Pipe (706-08)

II. CONTENTS

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III. GENERAL METHOD

The Department evaluates the manufacture, supply capabilities, and quality control of Smooth Interior Corrugated Pipe, Perforated Corrugated Polyethylene Underdrain Tubing, Corrugated Interior Polyethylene Pipe and Polypropylene Pipe for Department projects. This evaluation is achieved by having a representative of the Department perform annual audits and random sampling at manufacturing facilities.

Random sampling, for testing by the Department, at the manufacturer’s facility, for AASHTO M 294, M 252 and M 330 pipe on our Approved List shall be provided to monitor the quality of pipe, and the manufacturer’s quality control to assure continued specification compliance.
IV. DEFINITIONS

a. Manufacturer – A company engaged in the production of AASHTO M 294, AASHTO M 252, or AASHTO M 330 pipe, with or without Gasketed Bell and Spigot, at a given location.

b. Department – The New York State Department of Transportation.

c. Materials Bureau – A facility of the New York State Department of Transportation which may be contacted by mailing to:

   Director, Materials Bureau
   New York State Department of Transportation
   Materials Bureau, Mail POD 5-1
   50 Wolf Road
   Albany, NY 12232

   Or by telephone at (518) 457-3240, or by email materials@dot.ny.gov

d. National Transportation Product Evaluation Program (NTPEP) - A program that combines the professional and physical resources of the AASHTO member departments in order to evaluate materials, products and devices of common interest for use in highway and bridge construction. The primary goals of the program are to provide cost-effective evaluations for the state DOT’s by eliminating duplication of testing and auditing by the states and duplication of effort by the manufacturers that provide products for evaluation.

e. Inspection Authority – An office Designated by the Materials Bureau that is responsible for inspection control on behalf of the Department at specific manufacturing locations. This office shall be one of the following:
   i. The Department’s Regional Materials Office, supervised by the Materials Engineer.
   ii. Agency Inspection, supervised by the Materials Bureau or its designee.
   iii. Materials Bureau staff

f. Inspector – An individual employed by an Inspection Authority to function on inspection assignments, on behalf of the Department.

g. Certified Test Results – will contain the following:
   i. Identification of the manufacturer.
   ii. NYSDOT Item and Standard Specification number.
   iii. Quantity represented by the materials certification.
   iv. Test results and verification that comply with AASHTO M 294, AASHTO M 252, or AASHTO M 330
v. Statement of conformance to AASHTO M 294, AASHTO M 252 or AASHTO M 330, and the appropriate, NYSDOT Specification.

vi. Identification and signature of authorized person issuing the materials certification. The signature must be from an individual who legally binds the company.

vii. Test results performed by the manufacturing facility and a certification that satisfies AASHTO M 294, AASHTO M 252 or AASHTO M 330.

h. Identification Markings – Markings that are placed on the pipe by the manufacturer for identification purposes.

i. Damage –
   i. Cracking – is defined as any break or split that extends through the wall of the pipe.
   ii. Buckling – is defined as any reverse curvature of deformation in the wall that reduces the load carrying capability of the pipe.
   iii. Creases – is defined as an irrecoverable indentation, generally associated with buckling.
   iv. Other damage – damage caused by handling.

j. Manufacturing Defects –
   i. Pipe end cuts – the pipe ends shall be cut squarely and cleanly so as not to adversely affect joining or connecting.
   ii. Linear separation – the interior liner should be well adhered to the outer corrugations.
   iii. Linear smoothness – the interior liner must be relatively smooth to assure proper hydraulic flow.
   iv. Dimensional tolerances – tolerances included in Section 7.2 of AASHTO M294, AASHTO M252 or AASHTO M330 shall apply.
   v. Visible defects – pipe shall be free of visible defects.

k. Monitor Sample – A sample of pipe produced by an Approved List manufacturer, which is obtained by a Department representative and sent to the Materials Bureau for testing to monitor compliance with Department requirements. Satisfactory monitor sample test results are a prerequisite to remaining on the Department’s Approved List.
V. EVIDENCE OF ACCEPTABILITY

a. Name of the Company appearing on the Department’s Approved List.
b. Manufacturer’s certification from the manufacturer and/or material supplier.

VI. ACCEPTANCE PROCEDURE: Smooth Interior Corrugated Polyethylene Pipe (Item# 706-12)

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Action</th>
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<tbody>
<tr>
<td><strong>MANUFACTURER</strong></td>
<td></td>
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<tr>
<td>1.</td>
<td>Manufacturer certifies AASHTO M 294 pipe to be acceptable for Department use as item 706-12.</td>
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<tr>
<td>2.</td>
<td>Markings will be placed on the pipe as per AASHTO M 294.</td>
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<tr>
<td>3.</td>
<td>Store pipe as directed under the NYSDOT approved Materials Details.</td>
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<tr>
<td>4.</td>
<td>NYSDOT shipment records shall be kept by the manufacturer, and shall include:</td>
</tr>
<tr>
<td></td>
<td>a. Diameter of the pipe.</td>
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<tr>
<td></td>
<td>b. Shipment destination, and date, including project number.</td>
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<tr>
<td></td>
<td>c. Number of pieces of pipe of each size.</td>
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<tr>
<td>5.</td>
<td>Manufacturer shall electronically submit their NYSDOT shipment records each month via email with the subject, “706-12 Monthly Summary” to <a href="mailto:materials@dot.ny.gov">materials@dot.ny.gov</a>, within two weeks of the completion of the month being reported. Each monthly shipment record will be entitled in the following format; item #, month, year, city of manufacture, state of manufacture, manufacturer name.</td>
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**INSPECTOR**

1. The Inspector shall arrive at the manufacturing facility unannounced.
2. The Inspector shall randomly select a piece of pipe in accordance with AASHTO M 294 procedures that is in the process of being manufactured, or select from the manufacturer’s inventory.
3. The inspector shall witness the preparation of the selected sample; mark the sample and assure it is placed into the controlled environment, as described in AASHTO M 294. The inspector shall return after 24 hours of conditioning has elapsed and witness the quality control technician measure the pipe diameter and liner thickness, and perform the parallel plate test at 0 degrees and 90 degrees from the mold block seam as stated in AASHTO M 294.

4. The inspector will review all QA/QC documentation relating to the production of the randomly selected pipe in number 2 (above).

5. The inspector shall send copies of the test results, resin certification, and production records for the subject sample to the Materials Bureau.

VII. ACCEPTANCE PROCEDURE: Perforated Corrugated Polyethylene Underdrain Tubing (Item 706-13)

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<td>MANUFACTURER</td>
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<tr>
<td>1.</td>
<td>Manufacturer certifies AASHTO M 252 pipe to be acceptable for Department use as item # 706-13.</td>
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<tr>
<td>2.</td>
<td>Markings will be placed on the pipe as per AASHTO M 252.</td>
</tr>
<tr>
<td>3.</td>
<td>Store pipe as directed under the NYSDOT approved Materials Details.</td>
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<tr>
<td>4.</td>
<td>NYSDOT shipment records shall be kept by the manufacturer, and shall include:</td>
</tr>
<tr>
<td>a.</td>
<td>Diameter of the pipe.</td>
</tr>
<tr>
<td>b.</td>
<td>Shipment destination, and date, including project number.</td>
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<tr>
<td>c.</td>
<td>Number of rolls and length of rolls for each size.</td>
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<tr>
<td>5.</td>
<td>Manufacturer shall electronically submit their NYSDOT shipment records each month via email with</td>
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the subject, “706-13 Monthly Summary” to materials@dot.ny.gov, within two weeks of the completion of the month being reported. Each monthly shipment record will be entitled in the following format; item #, month, year, city of manufacture, state of manufacture, manufacturer name.

INSPECTOR

1. The Inspector shall arrive at the manufacturing facility unannounced.

2. The Inspector shall randomly select a piece of pipe in accordance with AASHTO M 252 procedures that is in the process of being manufactured, or select from the manufacturer’s inventory.

3. The inspector shall witness the preparation of the selected sample; mark the sample and assure it is placed into the controlled environment, as described in AASHTO M 252. The inspector shall return after 24 hours of conditioning has elapsed and witness the quality control technician measure the pipe diameter and liner thickness, and perform the parallel plate test at 90 degrees from the mold block seam as stated in AASHTO M252.

4. The inspector will review all QA/QC documentation relating to the production of the randomly selected pipe in number 2 (above).

5. The inspector shall send copies of the test results, resin certification, and production records for the subject sample to the Materials Bureau.

VIII. ACCEPTANCE PROCEDURE: Corrugated Interior Polyethylene Pipe (Item 706-14)

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<td>MANUFACTURER</td>
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<tr>
<td>1.</td>
<td>Manufacturer certifies AASHTO M 294 pipe to be acceptable for Department use as item 706-14.</td>
</tr>
<tr>
<td>2.</td>
<td>Markings will be placed on the pipe as per AASHTO M 294.</td>
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</table>
3. Store pipe as directed under the NYSDOT approved Materials Details.

4. NYSDOT shipment records shall be kept by the manufacturer, and shall include:
   a. Diameter of the pipe.
   b. Shipment destination, and date, including project number.
   c. Number of pieces of pipe of each size.

5. Manufacturer shall electronically submit their NYSDOT shipment records each month via email with the subject, “706-14 Monthly Summary” to materials@dot.ny.gov, within two weeks of the completion of the month being reported. Each monthly shipment record will be entitled in the following format; item #, month, year, city of manufacture, state of manufacture, manufacturer name.

**INSPECTOR**

1. The Inspector shall arrive at the manufacturing facility unannounced.

2. The Inspector shall randomly select a piece of pipe in accordance with AASHTO M 294 procedures that is in the process of being manufactured, or select from the manufacturer’s inventory.

3. The inspector shall witness the preparation of the selected sample; mark the sample and assure it is placed into the controlled environment, as described in AASHTO M 294. The inspector shall return after 24 hours of conditioning has elapsed and witness the quality control technician measure the pipe diameter and liner thickness, and perform the parallel plate test at 0 degrees and 90 degrees from the mold block seam as stated in AASHTO M 294.

4. The inspector will review all QA/QC documentation relating to the production of the randomly selected pipe in number 2 (above).

5. The inspector shall send copies of the test results, resin certification, and production records for the subject sample to the Materials Bureau.
IX. ACCEPTANCE PROCEDURE: Acceptance Procedures for Polypropylene Pipe with or without Gasketed Bell and Spigot (706-08)

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<tr>
<td>MANUFACTURER</td>
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<tr>
<td>1.</td>
<td>Manufacturer certifies AASHTO M 330 pipe to be acceptable for Department use as item #706-08.</td>
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<tr>
<td>2.</td>
<td>Markings will be placed on the pipe as per AASHTO M 330.</td>
</tr>
<tr>
<td>3.</td>
<td>Store pipe as directed under the NYSDOT approved Materials Details.</td>
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</table>
| 4.            | NYSDOT shipment records shall be kept by the manufacturer, and shall include:  
|               | a. Diameter of the pipe.  
|               | b. Shipment destination, and date, including project number.  
|               | c. Number of pieces of pipe of each size. |
| 5.            | Manufacturer shall electronically submit their NYSDOT shipment records each month via email with the subject, “706-08 Monthly Summary” to materials@dot.ny.gov, within two weeks of the completion of the month being reported. Each Monthly shipment record will be entitled in the following format; item #, month, year, city of manufacture, state of manufacture, manufacturer name. |

| INSPECTOR | |
| 1.         | The Inspector shall arrive at the manufacturing facility unannounced. |
| 2.         | The Inspector shall randomly select a piece of pipe in accordance with AASHTO M 330 procedures that is in the process of being manufactured, or select from the manufacturer's inventory. |
| 3.         | The inspector shall witness the preparation of the selected sample; mark the sample and assure it is placed into the controlled environment, as described in AASHTO M 330. The inspector shall return after 24 hours of conditioning has elapsed and witness the quality control technician measure the pipe diameter
and liner thickness, and perform the parallel plate test at 0 degrees and 90 degrees from the mold block seam as stated in AASHTO M 330.

4. The inspector will review all QA/QC documentation relating to the production of the randomly selected pipe in number 2 (above).

5. The inspector shall send copies of the test results, resin certification, and production records for the subject sample to the Materials Bureau.