

**INDIANA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS MANAGEMENT**

**APPROVED LIST REQUIREMENTS
ITM No. 806-16P**

1.0 SCOPE.

- 1.1. This test procedure covers the requirements for a product, source or otherwise prescribed subject matter to be added, maintained or removed from a Department's approved list.
- 1.2. This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 ITM Standards

ITM 804 Sample Material Certification Forms

3.0 TERMINOLOGY Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101, and as follows:

- 3.1. Equipment. An electrical or mechanical product produced by manufacturer
- 3.2. Manufacturer. Company owning a source.
- 3.3. Material. Matter in a raw resource or manufactured product form which is identified by specifications and used in or during the construction and maintenance of transportation facilities
- 3.4. Product. Material produced by a source having a name unique to the manufacturer
- 3.5. Source. Company having a location that provides a material. This shall include the common industry terms such as plant, mill, factory, fabricator, supplier, distributor, distribution terminal, and coater.

4.0 SIGNIFICANCE AND USE. This ITM shall explain the requirements for a product, source or otherwise prescribed subject matter of an approved list to be added, maintained and removed from the list.

5.0 GENERAL REQUIREMENTS.

- 5.1. QCP.** When the specification for a product, source, or otherwise prescribed subject matter requires a QCP, the QCP shall include as appropriate to the product, source or prescribed subject matter, but not be limited to, the following:
- 5.1.1** Name and location of source or manufacturer
 - 5.1.2** List of material and specification reference for the material that the approval is being requested
 - 5.1.3** Average monthly production of the material by size, type or grade
 - 5.1.4** Name, address and telephone number of responsible contact person
 - 5.1.5** Facility layout or production process of the material
 - 5.1.6** Quality parameters of the material
 - 5.1.7** Raw material sampling and testing frequency
 - 5.1.8** Procedures for conforming materials which provides a positive linkage between the furnished materials and the quality control test data
 - 5.1.9** Procedures for non-conforming materials
 - 5.1.10** Procedures for marking and tracking materials
 - 5.1.11** Procedures for documentation maintenance
 - 5.1.12** Finished material sampling and testing frequency
 - 5.1.13** Procedures for reviewing and updating the QCP
 - 5.1.14** Testing laboratory quality system
 - 5.1.15** Names, titles and qualifications of sampling and testing personnel
 - 5.1.16** Location and telephone number of the laboratory testing office
 - 5.1.17** Laboratory equipment and calibration frequency
 - 5.1.18** Test methods, procedures and laboratory equipment used for each type of material

5.1.19 Sample management describing procedures for samples identification, maintenance of the samples prior to testing, sample retention and disposal of samples

5.1.20 Testing report procedures

5.1.21 Methods used to identify improper test results and procedures followed when testing deficiencies occur

5.1.22 Statistical analysis of test results

5.1.23 Maintenance of test records

The QCP shall be signed and dated by the source or manufacturer representative at the time the QCP is submitted for acceptance. The QCP shall be maintained to reflect the current status and revisions shall be provided to the Department in writing.

5.2. Recognized Laboratory. Testing may be required which shall be conducted outside the Department's laboratories. A recognized laboratory shall be one of the following:

5.2.1 A state transportation agency testing laboratory

5.2.2 A testing laboratory regularly inspected by the CCRL for PCC materials

5.2.3 A testing laboratory regularly inspected by the AMRL for materials other than PCC materials

5.2.4 A testing laboratory utilized by AASHTO for evaluation of any material.

5.3 Notification of Changes. In the event that a change in ownership of an approved source or of a manufacturer of an approved product occurs, written notification shall be submitted to the contact name associated with the applicable approved list. In the event that the name of the source, manufacturer or product name is changed, written notification shall be submitted to the contact name associated with the applicable approved list. Such notifications shall be made on letterhead and shall include a signature of authority as defined by the source or manufacturer. Copies shall be sent to the Materials Services Engineer at the Office of Materials Management.

6.0 APPROVED LIST PROCEDURE A.

6.1. Approval. A source requesting approval for addition to a Department's list shall provide to the Office of Materials Management the following:

The source shall provide written notification of any changes, revisions or updates of the MSDS, source name or address, contact person or product name to the Office of Materials Management.

8.3. Removal from Approved List. A product will be removed from the approved list for the following, but not limited to, reasons:

8.3.1 Test failures or product changes without notification as determined by verification sampling

8.3.2 Performance of product no longer meets intended purpose

9.0 APPROVED LIST PROCEDURE D.

9.1. Approval. A source of a product, requesting approval for addition of the product to the Department's list shall provide to the Office of Materials Management the following:

9.1.1 A certification for the applicable material in accordance with ITM 804

9.1.2 A current MSDS

9.1.3 Infrared analysis, residue by oven drying, and specific gravity

9.1.4 A dated test report

9.2. Maintaining Approval. Samples of product may be obtained randomly for verification at the source or at the point of incorporation into the work in accordance with 106.02.

9.2.1 For a product in which there has been no change in raw materials, formulation, or procedures and test reports on file are less than 5 years old, the source shall submit an annual certification of compliance with ITM 804, except that no test report is required.

9.2.2 For a product in which there has been a change in raw materials, formulation, or procedures, a complete certification in accordance with ITM 804 shall be required.

9.2.3 For a product in which the completion date of the test report on file is five years old and there has been no change in raw materials, formulation, or procedures, a complete certification in accordance with ITM 804 having limited test results is required.

9.3. Removal from Approved List. A product will be removed from the approved list for the following, but not limited to, reasons:

9.3.1 Test failures or product changes without notification as determined by verification sampling

9.3.2 Performance of product no longer meets intended purpose.

10.0 APPROVED LIST PROCEDURE E.

10.1. Approval. A source of a product, requesting approval for addition of the product to a Department's list, shall provide to the Material and Tests Division the following:

10.1.1 A sample of the product, installation equipment, installation instructions and, if appropriate, a current MSDS

10.1.2 Test data indicating ability to meet requirements

10.2. Maintaining Approval. Samples of product may be obtained randomly for verification at the source or at the point of incorporation into the work in accordance with 106.02.

The source shall provide written notification of any changes, revisions or updates of the MSDS, source name or address, contact person or product name to the Office of Materials Management.

10.3. Removal from Approved List. A product will be removed from the approved list for the following, but not limited to, reasons:

10.3.1 Test failures or product changes without notification as determined by verification sampling, or

10.3.2 Performance of product no longer meets intended purpose.

11.0 APPROVED LIST PROCEDURE F.

11.1. Approval.

11.1.1. Records. A source of a product, requesting approval for addition of the product to the Department's list shall provide to the Office of Materials Management the following:

- a) A certification for the applicable material in accordance with ITM 804
- b) A current MSDS
- c) Infrared analysis, residue by oven drying, and specific gravity

- d) A dated test report substantiating compliance with applicable specifications

11.1.2. Materials and Labor. In addition, the source shall provide at no cost to the Department the following:

- a) A material sample to the designated location and at the time as required by the Department
- b) The labor, equipment, and incidental materials required to install the product

11.2. Maintaining Approval. Samples of product may be obtained randomly for verification at the source or at the point of incorporation into the work in accordance with 106.02.

The source shall provide written notification of any changes, revisions or updates of the MSDS, source name or address, contact person or product name to the Office of Materials Management.

11.3. Removal from Approved List. A product will be removed from the approved list for the following, but not limited to, reasons:

11.3.1 Test failures or product changes without notification as determined by verification sampling

11.3.2 Performance of product no longer meets intended purpose.

12.0 APPROVED LIST PROCEDURE G.

12.1. Approval. A source of equipment, requesting approval for addition of the equipment to a Department's list, shall provide the Office of Materials Management with the following:

12.1.1 A sample of the equipment, operating instructions and, if appropriate, a current MSDS

12.1.2 A QCP, which ensures the Department with a continuous supply of the equipment that complies with the requirements, shall be furnished in accordance with 5.1

12.1.3 A certification shall be provided for the applicable equipment in accordance with ITM 804

12.1.4 The equipment's specifications

12.1.5 Information about the equipment's use and application

12.2. Maintaining Approval. The source shall provide written notification of any changes, revisions or updates to the equipment, equipment's product name, MSDS, source's name or address, and contact person to the Office of Materials Management.

In addition, the source shall provide the following:

12.2.1 If equipment has no changes in design, model number, operational characteristics or procedures and if the test report on file is less than 5 years old, the source shall submit an annual certification in accordance with ITM 804, except no test report will be required

12.2.2 If equipment has no changes in design, model number, operational characteristics or procedures and if the test report on file is 5 years old or more, the source shall submit a complete certification in accordance with ITM 804, except limited test results will be required

12.2.3 If equipment has had changes in design, model number, operational characteristics or procedures, the source shall submit a complete certification in accordance with 804.

12.3. Removal from Approved List. Equipment will be removed from the approved list for the following, but not limited to, reasons:

12.3.1 Operational failures or equipment changes without notification as determined by verification of operational field performance

12.3.2 Test reports generated by the source which do not comply with the specification requirements

12.3.3 Performance of equipment no longer meets intended purpose or use

13.0 APPROVED LIST PROCEDURE H FOR REFLECTIVE SHEETING, FLEXIBLE DELINEATOR POSTS, SNOWPLOWABLE PAVEMENT MARKERS, SOLAR POWERED TRAFFIC CONTROL DEVICES, TEMPORARY PAVEMENT MARKING TAPE, AND TEMPORARY RAISED PAVEMENT MARKERS

13.1 Approval. To be considered for addition to the Approved List of Reflective Sheeting, Flexible Delineator Posts, Snowplowable Raised Pavement Markers, Solar Powered Traffic Control Devices (Flashing Arrow Signs and Changeable Message Boards), Temporary Pavement Marking Tape, and Temporary Raised Pavement Markers, a manufacturer shall submit the following:

- 13.1.1** A letter requesting approval of the product
- 13.1.2** A completed Preliminary Product Evaluation Form for the product
- 13.1.3** All applicable current AASHTO National Transportation Product Evaluation Program (NTPEP) test reports. The manufacturer shall have satisfactorily completed the NTPEP testing program for each product submitted.

Flexible Delineator Posts shall have been tested by the NTPEP within the past 10 years. When tested, the flexible post shall withstand, without damage, five winter and five summer vehicle impacts. The vehicle impacts shall include both bumper and tire impacts. The Flexible Delineator Post shall be able to bend to an angle of 85° from vertical, right itself to within 10° of the vertical immediately, and stand erect within 4 h within the same ambient air temperature range. After 10 impacts, at least 7 of 8 posts tested shall be intact and no post shall have a lean greater than 10°. Breakage or loss of any one post shall be considered a failure.

- 13.1.4** Product data sheets

- 13.2 Maintaining Approval.** Samples of material may be obtained randomly for verification at the source or at the point of incorporation into the work.

The source shall provide written notification of any changes, revisions or updates of the QCP, MSDS, source name or address, contact person or product name to the Office of Materials Management.

- 13.3 Removal from Approved List.** A source will be removed from the approved list for the following, but not limited to, reasons:

- 13.3.1** Changes in the materials or production process
- 13.3.2** Test failures determined by verification sampling
- 13.3.3** Performance of product no longer meets the intended purpose
- 13.3.4** Failure to submit QCP revisions to the Office of Materials Management
- 13.3.5** Failure to annually submit certifications of compliance and test reports, if required

14.0 APPROVED LIST PROCEDURE J FOR RETAINING WALL SYSTEMS

14.1 Approval. If the wall system has been approved for use in at least one state, or if any component of a previously approved wall system changes, the information in 14.1.1 to 14.1.7 shall be provided to the Office of Geotechnical Services to be considered for addition to the Department's list of Approved Retaining Wall Systems.

If the wall system has not been approved for use in any state, the information in 14.1.2, 14.1.3, 14.1.6, 14.1.7, and 14.4 shall be provided to the Office of Geotechnical Services to be considered for addition to the Department's list of Approved Retaining Wall Systems.

14.1.1 Five copies of a Technical Evaluation Report. This is an evaluation of the retaining wall system by the Highway Innovative Technology Evaluation Center (HITEC). The design verification of the system in the HITEC report shall use the AASHTO LRFD procedure. An evaluator on the Department's list of approved Retaining Wall System Evaluators may be used as an alternate to HITEC.

14.1.2 Five copies of the shop drawings of the wall facing. These shop drawings shall show all dimensions, reinforcing steel, ground reinforcement attachments and any other information necessary to describe the retaining wall system.

14.1.3 Five copies of any brochures, photographs, specifications and other information on the wall system's use, applications, construction methods, etc.

14.1.4 A list of all other states in which the wall system is currently approved

14.1.5 A list of at least five successful installations of the system, the states in which they are located, the contract they were installed on, the location of the project, the owner's name and contact information, and the prime Contractor on the contract. Each successful installation shall have a different height from the other listed installations, and shall have been placed on a state project. Sufficient information shall be included to describe the foundation soils on each of the five installations.

14.1.6 A Type A Certification in accordance with 916.02(a) substantiating that materials used in the wall system are in compliance with the applicable specifications.

14.1.7 A statement indicating that the wall system has been checked against the appropriate current retaining wall specifications and that the wall system either satisfies the current specifications or identifies areas where the wall system does not satisfy the current specifications.

14.2 Maintaining Approval. Materials shall be sampled and tested in accordance with the applicable specifications.

The manufacturer shall provide written notification of any changes, revisions or updates of the wall system to the Office of Geotechnical Services.

14.3 Removal from Approved List. Reasons for removal of a product from the approved list shall include, but not be limited to, the following:

14.3.1 Test failures, product changes, or changes to any component of the retaining wall system without notification of the Office of Geotechnical Services.

14.3.2 Performance of the retaining wall system fails to meet the intended purpose.

14.3.3 The removal of a product from the Department's list of Approved Retaining Wall systems will be the responsibility of the Manager, Office of Geotechnical Services. The System Owner shall have the right to appeal the removal from the Department's list of Approved Retaining Wall systems to the Director, Construction Management Division.

14.4 Alternate Approval Requirements. The information required for a wall system not approved in any state to be considered for inclusion on the Department's list of Approved Retaining Wall Systems shall be as follows:

14.4.1 Applicant Identification

- a) Company/Firm Name
- b) Name & Title of Authorized Representative
- c) Address
- d) Phone, Fax, e-mail address

14.4.2 Product Identification

- a) Product or Trade Name
- b) Description or composition
- c) Intended Use

14.4.3 Product Function

- a) Specific technological problem or need the product is intended to address. As appropriate, the relative importance or significance of the described problem or need.
- b) Innovative feature of the product intended to satisfy the identified problem or need

14.4.4 Patents

- a) Product proprietary technology
- b) Product patent, copyright, or other protection. A summary of the proprietary or protected features.

14.4.5 Performance Criteria

- a) Technical criteria that may be applied to determine how successful the product is fulfilling the intended function

Results from pullout testing of the ground reinforcement straps used in the wall system. Pullout testing shall be performed by an independent laboratory and not anyone affiliated with the wall system supplier. The backfill material used in the pullout testing shall be structure backfill type 3 except only nominal size aggregates No. 4, 1/2 in., or 1 in. or coarse aggregate No. 12 shall be used. The pullout testing shall be performed at 2 ft, 6 ft, 10 ft, 14 ft, 18 ft, and 22 ft depths of structural backfill.

- b) Any issues, other than functional performance, which may be of significant interest or concern to a potential user, such as safety performance or environmental acceptability

14.4.6 Upon review of the submittal, additional information may be requested by the Office of Geotechnical Services for the following:

- a) Materials and Material Properties
- b) Design
- c) Construction
- d) Performance

15.0 APPROVED LIST PROCEDURE K FOR IMPACT ATTENUATOR OR GUARDRAIL END TREATMENTS.

15.1 Approval. A source of a product, requesting approval for addition of the source or product to a Department's list, shall provide to the Office of Materials Management the following:

15.1.1 A written acceptance from the FHWA that the product has passed the NCHRP 350 crash test of the test level specified

15.1.2 A completed Department product evaluation form, attached

15.1.3 An itemized price sheet including each part

15.1.4 Information regarding the following

- a) Field repair cost data, actual cost preferable, for minor as well as major impacts. All repairs shall be performed in the field.

Field repair costs shall include; crew size, clock hours and man hours (excluding traffic control setup and teardown time) required to repair a unit, and equipment and tools required

- b) A list of agencies that have purchased or installed the product and a contact person with phone number and email address

- c) Time required for replacement parts delivery

- d) Routine maintenance costs for an unimpacted unit

- e) Specific pay item designations that the product qualifies. For guardrail end treatments, this information is shown in Indiana Design Manual Section 49-5.04(04). For impact attenuators, this information is shown in Indiana Design Manual Section 49-6.01.

15.1.5 A written commitment to comply with Department certified installers training required by the Standard Specification of the product.

The Department may reject the product for consideration due to maintenance concerns.

The Department will place the product in two select field locations for a one-year evaluation period. The manufactures shall provide and install two units in accordance with their recommendation at no cost to the Department. The cost of all repairs to the unit, once installed, will be

borne by the Department and performed by the Manufacturer. The Department will provide a safety zone for any required repairs during the evaluation period. The field evaluation criteria will consist of initial cost, repair cost, repair time required, ease of maintenance and repairs, and availability of parts, as compared to units already on the approved list.

After the one year evaluation period, the Department will determine whether to place the product on the approved list.

A Manufacturer or product will not be considered for placement on the approved list if the three Manufacturer or products currently on the approved list are deemed to be more cost efficient or competitive.

- 15.2 Maintaining Approval.** The Manufacturer shall comply with the specifications in providing training for the purpose of certifying or recertifying product installers and Department maintenance forces. The Manufacturer shall maintain and provide annually a list of its certified installers and Department maintenance forces.

The product shall meet NCHRP 350 crash test requirements and approved by FHWA in the event of any product changes.

The Manufacturer shall provide written notification of any changes to the product, source name or address, contact person or product name to the Office of Materials Management.

- 15.3 Removal from Approved List.** A maximum of three Manufacturer or products for each category will appear on the approved list. A Manufacturer or product will be removed from the approved list for the following, but not limited to, reasons:

15.3.1 Manufacturer or product changes without notification

15.3.2 Performance of product no longer acceptable

15.3.3 The Manufacturer no longer trains or recertifies the installers

15.3.4 Repair part delivery becomes a problem

15.3.5 A new product is deemed to be more cost efficient or competitive.

16.0 APPROVED LIST PROCEDURE L FOR DETECTABLE WARNING ELEMENTS.

16.1 Approval. To have a detectable warning element added to the Department's list of approved Detectable Warning Elements, the manufacturer shall provide to the Office of Materials Management the following:

16.1.1 For brick detectable warning elements, a sample of six elements shall be provided. For cast iron detectable warning elements, the sample shall be a single element. A current MSDS shall be provided, if appropriate.

16.1.2 For brick and cast iron detectable warning elements, a Type B Certification in accordance with 916.02(b) substantiating compliance with applicable specifications shall be provided. The Certification shall also clearly state which types of concrete curb ramps, as specified by the INDOT Standard Drawings, are applicable to the detectable warning element. Limitations as to the radius of concrete curb ramp installations shall be clearly stated.

16.1.3 Product literature which describes the detectable warning element to include instructions for installation.

16.1.4 Other detectable warning elements will be reviewed by the Office of Materials Management. Products which are appropriate for INDOT use will require a field evaluation for not less than one year from the date of installation. The Department will select the contract and identify the curb ramp locations which are to utilize the detectable warning element under evaluation. The manufacturer shall provide the detectable warning elements to the Contractor for installation without additional cost to the Department. A manufacturer representative shall be present at the installation to provide technical assistance for proper installation. Documentation of existing installations by Local Public Agencies or municipalities may be submitted to the Department for consideration. A field evaluation will be successful if at the end of the review period there is no indication of distress or color fading of the detectable warning element, including the truncated domes. A product that is determined by the Department as successfully completing a field evaluation(s) will be added to the Approved Material List.

16.2 Maintaining Approval. Random verification samples of the elements may be obtained prior to placement for testing or inspection by the Department. The manufacturer shall submit an annual request to remain on the Department list to the Office of Materials Management. A Type B Certification in accordance with 916.02(b) substantiating compliance with applicable specifications shall be provided for brick and cast iron elements. A Type C Certification shall be provided for other approved elements. The manufacturer shall provide written

notification of any changes to the product or source since the detectable warning element was approved by the Department.

16.3 Removal from Approved List. A product will be removed from the Department's list if any of the following conditions occur:

16.3.1 Testing or inspection of verification sample results in a failure to meet the specifications

16.3.2 Changes to the product without notification

16.3.3 Performance of the product no longer meets intended purpose as determined by field evaluation.

17.0 APPROVED LIST PROCEDURE M FOR HIGH TENSION CABLE BARRIER SYSTEMS

17.1 Approval. To be considered for addition to the Approved List of Cable Barrier Systems, a manufacturer shall submit the following documentation to the Office of Materials Management:

17.1.1 Documentation that the manufacturer or the manufacturer's distributor is a registered vendor with the Indiana Secretary of State

17.1.2 A letter requesting approval of the cable barrier system

17.1.3 Crash test results documenting that all components meet NCHRP 350 crash test requirements and the test level met for each component

17.1.4 A copy of the FHWA letter of approval

17.1.5 A completed INDOT product evaluation form

17.1.6 An itemized price sheet including pricing for each part

17.1.7 Information regarding the following:

- a) Field repair cost data, actual cost preferable, for minor as well as major impacts. Field repair costs shall include crew size, clock hours and manhours (excluding traffic control setup and teardown time) required to repair the damaged portion of the cable barrier system.
- b) A list of agencies that have purchased and installed the product. Include a contact name, phone number and email address for the agency.

- c) Average time required for delivery of replacement parts
- d) Routine maintenance costs for an un-impacted system

17.1.8 A written commitment to comply with the training requirements listed in the INDOT construction contract specifications for the product

The Department may reject the product for consideration due to maintenance concerns.

17.2 Maintaining Approval. The manufacturer shall provide written notification to the Department of any changes to the system, system name, changes in manufacturer's name or address or manufacturer's contact person.

In the event that any changes are made to an approved system, the manufacturer shall provide a new letter of acceptance from the FHWA stating that the changes in the system are approved and/or do not change the function of the system.

17.3 Removal from Approved List. A maximum of five systems will be maintained on the approved list. Reasons for the Department to remove a system from the list include, but are not limited to the following:

17.3.1 The manufacturer fails to provide the required notification of changes to the system.

17.3.2 Performance of the system is no longer acceptable.

17.3.3 Delivery time for repair parts becomes unacceptable.

17.3.4 A new system is deemed to be more cost efficient or competitive.

17.3.5 The manufacturer or distributor fails to maintain its registration with the Secretary of State.

18.0 APPROVED LIST PROCEDURE N FOR SOUND BARRIER SYSTEMS

18.1 Approval. To be considered for addition to the Approved List of Sound Barrier Systems, a manufacturer shall submit the following documentation to the Office of Materials Management:

18.1.1 A letter requesting approval of the sound barrier system. The letter shall include supporting documents to include the following, as applicable:

- a) Name and location of the manufacturer
- b) Name, address and telephone number of a contact person

- c) An inspection report of the sound barrier system
- d) A list of sound barrier system installations
- e) A test report of the sound transmission loss
- f) A test report of the sound absorption average
- g) A test report for the accelerated weathering
- h) A test report for the flame index
- i) A test report for the concrete resistance to scaling

18.1.2 Documentation that all tests were performed within two years from the date of submission

18.1.3 Documentation that all tests were performed on samples selected from a production run of the product

18.1.4 Documentation that all tests were performed by a testing laboratory accredited by the Department of Commerce, National Voluntary Laboratory Accreditation Program (NVLAP) or a testing laboratory accredited by an agency listed in the Asia Pacific Laboratory Accreditation Cooperation (APLAC) Mutual Recognition Arrangement (MRA). Each test report shall be accompanied with proof of accreditation by the NVLAP or APLAC-MRA.

18.1.5 Documentation of the location, date, and purchaser of prior construction of a sound barrier system of the type to be approved. The Department will consider new systems for provisional approval and may request additional test reports or other information to evaluate the predicted performance of the system and the materials. When new systems or manufacturing facilities are approved without production samples being available, the facility shall provide test reports on production samples within two years of the approval date.

18.1.6 An inspection report detailing the condition of a sound barrier system of the type to be approved. The inspection report shall identify the location and type of the sound barrier system, provide comments on the structural integrity of each component, and indicate the condition of any surface coatings. The inspection report shall be prepared and signed by a registered professional engineer independent from the manufacturer. The field location of the sound barrier system shall be in an area with a climate similar to the climate in Indiana. The sound barrier system shall have been subjected to at least two winters of exposure.

18.1.7 A list of all materials used in the manufacture and construction of the type of sound barrier system to be approved. The list shall include the material specification which each material component meets and the name of the manufacturer of each material component.

- 18.1.8** A test report that indicates a sound transmission loss of 20 dbl or greater for each frequency in accordance with ASTM E 90
- 18.1.9** For absorptive wall systems type 1 and 2, a test report that indicates the sound barrier system has a sound absorption average of 0.70 or greater in accordance with ASTM C 423 with specimens mounted in accordance with ASTM E 795, type A.
- 18.1.10** A test report that indicates the sound barrier system complies with the accelerated weathering requirements when tested in accordance with ASTM D 6695 cycle 1. Four specimens shall be used in the test. One specimen shall be used as a reference, and the additional specimens shall be evaluated at 800, 1600 and 2400 hours. The color of the specimens shall be light tan, light brown or light grey. The test report shall include a color photo of each specimen at the time of evaluation. The sample is required to indicate:
- a) No checking in accordance with ASTM D 660
 - b) No blistering in accordance with ASTM D 714
 - c) No loss of adhesion in accordance with ASTM D 3359
 - d) Chalking of 7 or greater in accordance with ASTM D 4214, Method C
 - e) Color difference of 5 Δ NBS units or less as compared to the reference sample in accordance with ASTM D 2244
- 18.1.11** A test report that indicates a flame spread index of 15 or less at 10 minutes in accordance with ASTM E 84
- 18.1.12** For precast concrete panel systems, a test report that indicates that the concrete components of the sound barrier system have a mass loss of 0.2 lb/1.0 ft² or less in accordance with ASTM C 672 using the following procedure:
- a) The specimens shall be from different production runs and shall have a testable surface area of 1.00 ft² or more.
 - b) The specimens shall be sealed around the edges to retain the salt solution to a depth of at least 1/8 in. over the entire surface.
 - c) Before the start of the test, each specimen shall be brushed clean.
 - d) After each five cycles of the test, all salt solution and all rinse water from each specimen shall be collected.
 - e) After each five cycles, the surface of each specimen shall be thoroughly rinsed to remove all loose particles.
 - f) The collected liquid shall be filtered and all particles removed.
 - g) The retained particles shall be dried to a constant weight and the weight determined to the nearest 0.01 lb.
 - h) The test report shall indicate the weight of particles after each five cycles and the total weight after 50 cycles for each specimen. The

report shall include a color photo of each specimen before and after the test.

18.1.13 For masonry block systems, a test report that indicates the concrete masonry units have a mass loss of one percent material or less in accordance with ASTM C 1262 when the specimens are subjected to 100 cycles of freezing and thawing in a water test solution

18.1.14 The supplier shall submit an inspection report that indicates the filler material for the sound barrier system in a dry and saturated state does not sag, separate, delaminate, deform or otherwise create voids that allow sound to penetrate the component

18.1.15 The supplier shall submit a list of material sources in accordance with the following:

18.1.15.1 Aggregates shall be in accordance with ITM 203.

18.1.15.2 Cement shall be included in the Department List of Approved Cement Sources.

18.1.15.3 Reinforcing steel shall be included in the Department List of Approved Certified Uncoated Reinforcing Bar Manufacturers and WWR Fabricators.

18.1.15.4 Miscellaneous materials including admixtures, pozzolans and repair materials shall be in accordance with the Department's procedures for accepting or approving those materials as stated in the Standard Specifications, Manual for Frequency of Sampling and Testing and Basis for Use of Materials or ITM 813 as applicable.

18.2 Maintaining Approval. The manufacturer shall provide written notification to the Department of any changes to the system, system name, changes in the manufacturer name or address, or manufacturer's contact person. All documents and test reports for the sound barrier system shall be kept current by the manufacturer. Production test reports shall be submitted within two years of provisional approval in accordance with 18.1.5. The manufacturer shall provide written notification at the beginning of each calendar year indicating the material sources in accordance with 18.1.15 and as these sources change during the course of the year.

18.3 Removal from Approved List. A sound barrier system that exhibits poor field performance, as determined by the Department, will be removed from the approved list.

19.0 APPROVED LIST PROCEDURE O FOR THERMOPLASTIC PIPE

19.1 Approval. To be considered for addition to the Approved List of Plastic Pipe Sources, a manufacturer shall meet the following criteria:

19.1.1 A letter requesting approval shall be submitted to the Office of Materials Management.

19.1.2 The source shall have satisfactorily completed the applicable AASHTO National Transportation Product Evaluation Program (NTPEP) Audit Program in two consecutive years.

19.1.3 After the first year of satisfactory completion of the NTPEP audit, sources will be provisionally approved. The source shall provide monthly production data in accordance with Section 6.2 until a second consecutive successful NTPEP audit has been completed.

19.2 Maintaining Approval. The source is required to have a satisfactorily completed NTPEP audit on an annual basis.

Samples of material may be obtained randomly for verification at the source or at the point of incorporation into the work. Sources are subject to unannounced surveillance audits by the Department to verify continual compliance of the requirements stated in the NTPEP Audit Program Work Plan.

The source shall provide written notification of any changes, revisions or updates of the Quality Management System (QMS), MSDS, source name or address, contact person or product name to the Office of Materials Management.

19.2.1 Work Plans. The NTPEP Work Plans for the Audit Programs provide the manufacturer with guidance on the areas reviewed during the audit and requirements which the manufacturer needs to meet. Among the considerations employed by the Department during audit reviews are the following:

19.2.1.1 Work Plans are guidance documents for audits. The applicable specifications shall be met unless explicitly stated herein or within the work plan.

19.2.1.2 Findings not made by auditors do not indicate compliance with the work plan or approval. When the QMS fails to meet the specifications or the requirements of the work plan, the manufacturer is responsible for updates or changes to the QMS.

19.2.1.3 Work plans provide frequencies for testing which do not typically appear in the specifications. Every effort shall be made to comply with these requirements. Failure to do so may

result in a deficiency requiring a corrective action report. The Department may request an explanation even if the deficiency is not noted by the auditor.

- 19.2.1.4** When the work plan uses the term “per week” for frequencies, this is understood to represent a calendar week, which begins on the day the manufacturer recognizes as the beginning of the production week. When multiple tests are required, additional tests may be waived if continuous production is less than four shifts (32 hours). If production is not continuous, subsequent sampling and testing shall commence as early as possible on the second calendar day of production.
- 19.2.1.5** If the work plan requires Stub Compression testing, the Department will waive the frequency stated in the work plan and/or the specification. Stub Compression will be allowed on an annual basis. Note that this exception may invalidate material for use in other states.

These items are intended for guidance purposes where the work plan lacks clarity or Department exceptions are warranted. They are not exhaustive in regard to audit reviews and the Department reserves the right to add or change these items as deemed appropriate.

19.3 Removal from Approved List. A source will be removed from the approved list for the following, but not limited to, reasons:

- 19.3.1** Test failures determined by verification sampling
- 19.3.2** Failure to satisfactorily complete annual NTPEP audits
- 19.3.3** Failure to take corrective action for non-compliance following Department audits
- 19.3.4** Performance of product no longer meets the intended purpose
- 19.3.5** Failure to submit QMS revisions to the Office of Materials Management
- 19.3.6** Test reports generated by the source which indicate non-compliance with the 95% statistical assurance requirement of Section 6.1.2.
- 19.3.7** Failure to provide timely and satisfactorily production data during the provisional approval period

20.0 APPROVED LIST PROCEDURE P FOR SOIL MODIFIERS

20.1 Lime for Soil Modification. Lime for soil modification shall include hydrated lime, quicklime, or hydrated lime or quicklime by-products.

20.1.1 Approval. To be considered for addition to the Approved list of Soil Modifiers, a source shall provide to the Office of Materials Management the following:

- a) A current MSDS on the material.
- b) Documentation that the hydrated lime or quicklime is in accordance with AASHTO M 216.
- c) Documentation that the testing of hydrated or quicklime by-products are in accordance with ASTM C 25 and meet the requirements of 913.04(b) 2.
- d) Test results for the total calcium and magnesium oxides (non-volatile basis) for hydrated or quicklime by-products in accordance with ASTM C1271.
- e) Test results for the available calcium hydroxide plus magnesium oxide calculated as calcium hydroxide for hydrated or quicklime by-products. The test procedure shall be as follows:
 1. Determine the available calcium oxide in accordance with ASTM C 25, Section 28.
 2. Multiply the available calcium oxide value by 1.32 to determine the calcium hydroxide value.
 3. Determine the magnesium oxide value in accordance with ASTM C 1271
 4. Multiply the magnesium oxide value by 1.84 to determine the magnesium oxide value calculated as calcium hydroxide.
 5. Add the calcium hydroxide value and magnesium oxide value (calculated as calcium hydroxide) to determine the available calcium hydroxide plus magnesium oxide calculated as calcium hydroxide
- f) Sieve analysis of the hydrated lime or quicklime by-product in accordance with ASTM C 110. The No. 4, No. 30, and No. 100 sieves shall be verified in accordance with ITM 902 every six months.

- g) A summary of test results for all specified tests for six consecutive months. No tests shall be more than one year old at the time of submittal. Testing shall be conducted by an INDOT Approved Geotechnical Laboratory.
- h) A QCP in accordance with section 5.1 that ensures the Department that the material shall be produced to meet specification requirements.

20.1.2 Maintaining Approval. The source shall annually conduct a complete analysis to determine that the above listed criteria are met. A summary of results for all specified tests shall be submitted to the Office of Material Management. Tests shall be conducted by an INDOT Approved Geotechnical Laboratory.

20.1.3 Removal from Approved List. A product will be removed from the approved list for the following, but not limited to, reasons:

- a) Test failures or product changes without notification as determined by verification sampling
- b) Performance of product no longer meets intended purpose

20.2 Cement By-Products

20.2.1 Approval. To be considered for addition to the Approved List of Soil Modifiers, a source shall provide to the Office of Materials Management the following:

- a) A current MSDS on the material
- b) Documentation that the cement by-product is in accordance with 913.05.
- c) Documentation that the cement by-product is approved by IDEM and the waste classification is designated.
- d) Documentation that the total calcium oxides and Loss on Ignition are in accordance with C595.
- e) Documentation that the free lime (CaO) is in accordance with C114.
- f) Test results of the reactivity of a soil from Indiana and the cement by-product. The test procedure shall be as follows:

1. Prepare two specimens of a height to diameter ratio between 2 and 2.5 with a minimum 5 % cement by- product by dry weight of soils at 95 % of standard Proctor
 2. Cure the specimens for 48 hours at 70°F in the laboratory and test the specimens in accordance with AASHTO T 208. The strength gain of the specimens is required to be 50 psi greater than the soil for acceptance.
 3. Evaluate the swelling of the specimens in accordance with AASHTO T 193. The specimen swelling is required to not exceed 3%.
- g) Sieve analysis of the cement by-product in accordance with ASTM C 110. The No. 4, No. 30, and No. 100 sieves shall be verified in accordance with ITM 902 every six months.
 - h) A summary of test results for all specified tests for six consecutive months. No tests shall be more than one year old at the time of submittal. Testing shall be conducted by an INDOT Approved Geotechnical Laboratory.

20.2.2 Maintaining Approval. An approved source shall submit a chemical composition and mineralogy of the cement by-product every six months to the Office of Material Management. Tests shall be conducted by an INDOT Approved Geotechnical Laboratory.

The source shall provide written notification of any changes, revisions or updates of the MSDS, source name or address, contact person or product name to the Office of Materials Management.

20.2.3 Removal from Approved List. A product will be removed from the Approved List for the following, but not limited to, reasons:

- a) Test failures or product changes without notification as determined by verification sampling
- b) Performance of product no longer meets intended purpose

21.0 APPROVED LIST PROCEDURE Q FOR PLASTIC PIPE LINER SOURCES

21.1 Approval. To be considered for addition to the Approved List of Plastic Pipe Liner Sources, a source shall provide to the Office of Materials Management the following:

21.1.1 A current MSDS and summary of results of the specified tests for

production in the previous year. No test results shall be more than two years old at the time of submission.

21.1.2 Documentation demonstrating the ability of the source to produce a consistent and quality product in accordance with AASHTO M 326, Appendix X1, including a QCP which ensures the Department of a continuous supply of material complying with the requirements. The QCP shall include the method of testing joints to determine the proficiency of the liner installer and the method for deforming the liner, when allowed by the contract.

21.2 Maintaining Approval. A Type B Certification in accordance with 916 shall be submitted to the Office of Materials Management on an annual basis for raw materials and on a monthly basis for physical tests. Samples of material may be obtained randomly for verification at the source or at the point of incorporation into the work in accordance with 106.02. The source shall provide written notification of any changes, revisions, or updates of the QCP, MSDS, contact person or product name to the Office of Materials Management.

21.3 Removal from Approved List. A source will be removed from the approved list for the following, but not limited to, reasons:

21.3.1 Test failures determined by verification sampling

21.3.2 Monthly or annual certifications not provided

21.3.3 Test reports generated by the source which indicate non-compliance with the specification requirements

21.3.4 Performance of product no longer meets the intended purpose

22.0 APPROVED LIST PROCEDURE R FOR EPOXY COATINGS FOR REINFORCING STEEL

22.1 Approval. To be considered for addition to the Approved List of Epoxy Coatings for Steel under the Reinforcing Bar designation, a manufacturer shall submit the following documentation to the Office of Materials Management:

22.1.1 Product Data Sheet. A product data sheet which shall specify the method of surface preparation, the thermal treatments before and after coating application, the coating application procedure and the product name and description of the patching material shall be provided.

22.1.2 Materials Safety Data Sheet. Current materials safety data sheets shall be supplied for the product and the patching material.

22.1.3 Laboratory Report. A dated laboratory report shall be provided which verifies full compliance with the tests required in Annex A1 of ASTM A775.

22.2 Maintaining Approval. The manufacturer shall provide written notifications of any changes, revisions or updates of the coating formulation, MSDS, manufacturer name or address, or contact person to the Office of Materials Management.

22.3 Removal from Approved List. Failure of the manufacturer to provide notification or a product that exhibits poor performance, as determined by the Department, will constitute the basis for removal from the approved list.

23.0 APPROVED LIST PROCEDURES FOR GEOSYNTHETICS

23.1 Geotextiles

23.1.1 Approval. A source of a product, requesting approval for addition of the product to a Department's list, shall provide to the Office of Materials Management the following:

- a) The product name, current MSDS, address of the manufacturer, and contact person
- b) A certification for the applicable material in accordance with ITM 804
- c) A dated test report from the NTPEP designated laboratory
- d) Verification that the manufacturing facility has satisfactorily completed the NTPEP Audit Program for Geotextiles
- e) Information on the raw material that indicates that the material meets the ASTM requirements

23.1.2 Maintaining Approval. Geotextile manufacturers shall satisfactorily complete the NTPEP audit process each year.

The source shall provide written notification of any changes, revisions or updates of the MSDS, source name or address, contact person or product name to the Office of Materials Management.

23.1.3 Removal from Approved List. A product will be removed from the approved list for the following, but not limited to, reasons:

- a) Test failures, or product changes without notification

- b) Performance of product no longer meets the intended purpose
- c) Failure by the manufacturer to complete the NTPEP audit process

23.2 Geogrid

23.2.1 Approval. A source of a product, requesting approval for addition of the product to a Department's list, shall provide to the Office of Materials Management the following:

- a) The product name, current MSDS, address of the manufacturer, and contact person
- b) A certification for the applicable material in accordance with ITM 804
- c) A dated test report from the NTPEP designated laboratory
- d) Verification that the manufacturing facility is ISO - 9001 certified for geogrids
- e) Information on the raw material that indicates that the material meets the ASTM requirements

23.2.2 Maintaining Approval. Test results from NTPEP tested samples shall be submitted at the intervals sampled by NTPEP for geogrids. The test results shall be submitted to the Office of Materials Management.

The source shall provide written notification of any changes, revisions or updates of the MSDS, source name or address, contact person or product name to the Office of Materials Management.

23.2.3 Removal from Approved List. A product will be removed from the approved list for the following, but not limited to, reasons:

- a) Test failures, or product changes without notification
- b) Performance of product no longer meets the intended purpose
- c) Failure by the manufacturer to submit samples in accordance with the NTPEP work plan

24.0 APPROVED LIST PROCEDURE T FOR MANHOLE GRADE ADJUSTMENT DEVICES.

- 24.1 Approval.** To have a manhole grade adjustment device added to the Department's list of approved Manhole Adjustment Devices, the manufacturer shall provide to the Office of Materials Management the following:
- 24.1.1** A product sample shall be provided for inspection of the device. A current SDS shall be provided, if appropriate.
 - 24.1.2** Product literature which describes the manhole grade adjustment device to include instructions for installation.
 - 24.1.3** Products for grade adjustment of manholes or other structures which are not precast concrete will be reviewed by the Office of Materials Management. Products which are appropriate for INDOT use will require a field evaluation for not less than one year from the date of installation. The Department will select the contract and identify the manhole or structure locations which are to utilize the grade adjustment device under evaluation. The manufacturer shall provide the device to the Contractor for installation without additional cost to the Department. A representative of the manufacturer shall be present at the installation to provide technical assistance for proper installation. Documentation of existing installations by Local Public Agencies or municipalities may be submitted to the Department for consideration. A field evaluation will be successful if at the end of the review period there is no indication of distress to the adjustment device or surrounding pavement and no indication of settlement of the supported casting and frame. A product that is determined by the Department as successfully completing a field evaluation(s) will be added to the Approved Material List.
- 24.2 Maintaining Approval.** Random verification samples of the grade adjustment device may be obtained prior to placement for testing or inspection by the Department. A Type B Certification in accordance with 916.02(b) substantiating compliance with applicable specifications including loading requirements shall be provided on each contract. The manufacturer shall provide written notification of any changes to the product following approval of the adjustment device by the Department.
- 24.3 Removal from Approved List.** A product will be removed from the Department's list if any of the following conditions occur:
- 24.3.1** Testing or inspection of verification sample results in a failure to meet the specifications.
 - 24.3.2** Changes to the product without notification.
 - 24.3.3** Performance of the product no longer meets intended purpose as determined by field evaluation.