



**INDIANA DEPARTMENT OF TRANSPORTATION
DIVISION OF MATERIALS AND TESTS**

**QUALIFIED PRODUCTS LIST REQUIREMENTS
ITM No. 806-21**

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 **one of the** Department's **qualified products** lists (QPL).
- 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 203	Control Procedures for Classification of Aggregates
ITM 804	Sample Material Certification Forms
ITM 813	Certified Precast Concrete Producer Program
ITM 902	Verifying Sieves

2.2 AASHTO Standards.

M 216	Quicklime and Hydrated Lime for Soil Stabilization
M 326	Polyethylene (PE) Liner Pipe, 300- to 1600-mm Diameter, Based on Controlled Outside Diameter
T 193	The California Bearing Ratio
T 208	Unconfined Compressive Strength of Cohesive Soil

2.3 ASTM Standards.

A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
C25	Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime
C110	Standard Test Methods for Physical Testing of Quicklime, Hydrated Lime, and Limestone
C114	Standard Test Methods for Chemical Analysis of Hydraulic Cement
C423	Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
C595	Standard Specification for Blended Hydraulic Cements

C672	Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals
C1262	Standard Test Method for Evaluating the Freeze-Thaw Durability of Dry-Cast Segmental Retaining Wall Units and Related Concrete Units
C1271	Standard Test Method for X-ray Spectrometric Analysis of Lime and Limestone
D660	Standard Test Method for Evaluating Degree of Checking of Exterior Paints
D714	Standard Test Method for Evaluating Degree of Blistering of Paints
D2244	Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
D3359	Standard Test Methods for Rating Adhesion by Tape Test
D4214	Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
D6695	Standard Practice for Xenon-Arc Exposures of Paint and Related Coatings
E84	Standard Test Method for Surface Burning Characteristics of Building Materials
E90	Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
E795	Standard Practices for Mounting Test Specimens During Sound Absorption Tests

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 explains the requirements for a product, source, or otherwise prescribed subject matter of a QPL to be added, maintained, and removed from the QPL.

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 **that** is being **submitted for consideration**
 - 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 sample 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:

- 5.1.24 A state transportation agency testing laboratory.
- 5.1.25 A testing laboratory regularly inspected by the CCRL for PCC materials.
- 5.1.26 A testing laboratory regularly inspected by the AMRL for materials other than PCC materials.
- 5.1.27 A testing laboratory utilized by AASHTO for evaluation of any material.

- 5.3 **Notification of Changes.**

5.3.1 In the event that a change in ownership of a source or of a manufacturer of a product on a QPL occurs, written notification shall be submitted to the contact's name associated with the applicable QPL.

5.3.2 In the event that the name of the source, manufacturer or product name is changed, written notification shall be submitted to the contact's name associated with the applicable QPL.

5.3.3 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 Division of Materials and Tests.

6.0 QPL PROCEDURE A FOR THERMOPLASTIC PIPE.

Department's **QPL** shall provide to the Division of Materials and Tests the following:

- 7.1.1 A summary of results of all specified tests for six consecutive month's production **and a current SDS** shall be submitted. No test results shall be more than one year old at time of submission.
 - 7.1.2 A QCP, which ensures the Department of a continuous supply of material complying with the requirements, shall be furnished in accordance with 5.1.
 - 7.1.3 A certification shall be provided for the applicable material in accordance with ITM 804.
- 7.2 **Maintaining Standing on QPL.** Test reports shall be generated in accordance with specification requirements for the material and submitted monthly to the Division of Materials and Tests. The reports shall have summarized test results, shall state the name and location of the test facility, and shall be signed by the testing facility technical manager. If the material is not produced by the source in a given month, the monthly submittal shall state:

"No _____ was manufactured during _____."
 material **and** type, month/year
 class, or grade

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, SDS, source name or address, contact person or product name to the Division of Materials and Tests.

- 7.3 **Removal from QPL.** Removal from the **QPL** will be in accordance with 6.3.

8.0 **QPL PROCEDURE C FOR PRECOMPRESSED FOAM JOINTS AND NON-EPOXY PCC SEALERS.**

- 8.1 **Consideration for Inclusion.** A source of a product, requesting addition of the product to **the** Department's **QPL** shall provide to the Division of Materials and Tests the following:

- 8.1.1 A sample of the product and, if appropriate, a current SDS
- 8.1.2 A certification shall be provided for the applicable material in accordance with ITM 804

8.1.3 A dated test report

8.2 **Maintaining Standing on QPL.** 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 SDS, source name or address, contact person or product name to the Division of Materials and Tests.

8.3 **Removal from QPL.** A product will be removed from the QPL 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 **QPL PROCEDURE D FOR ADMIXTURES FOR USE IN CONCRETE.**

9.1 **Consideration for Inclusion.** A source of a product, requesting addition of the product to the Department's QPL shall provide to the Division of Materials and Tests the following:

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

9.1.2 A current SDS

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

9.1.4 A dated test report

9.2 **Maintaining Standing on QPL.** 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 the 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 will be required.

9.2.3 For a product in which the completion date of the test report on file is

five years old **or older** and there has been no change in raw materials, formulation, or procedures, a complete certification in accordance with ITM 804 having limited test results **will be** required.

9.3 Removal from QPL. A product will be removed from the **QPL** 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 QPL PROCEDURE E.

10.1 Consideration for Inclusion. A source of a product, requesting addition of the product to the Department's **QPL** shall provide to the **Division of Material and Tests** the following:

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

10.1.2 Test data indicating ability to meet requirements

10.2 Maintaining Standing on QPL. 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 SDS, source name or address, contact person or product name to the Division of Materials and Tests.

10.3 Removal from QPL. A product will be removed from the **QPL** 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 QPL PROCEDURE F FOR CHEMICAL ANCHOR SYSTEMS, PCC SEALER/HEALERS, RAPID SETTING PATCH MATERIALS, LIQUID MEMBRANE FORMING COMPOUNDS, AND SYNTHETIC FIBERS.

11.1 Consideration for Inclusion.

11.1.1 Records. A source of a product, requesting addition of the product to the

Department's QPL shall provide to the Division of Materials and Tests the following:

- a) A certification for the applicable material in accordance with ITM 804
- b) A current SDS
- 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 shipped or delivered to the designated location and at the time designated, as required by the Department
- b) The labor, equipment, and incidental materials required to install the product

11.2 Maintaining Standing on QPL. 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 SDS, source name or address, contact person or product name to the Division of Materials and Tests.

11.3 Removal from QPL. A product will be removed from the QPL 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 QPL PROCEDURE G FOR ACRYLIC PLASTIC AND BARRIER DELINEATORS.

12.1 Consideration for Inclusion. A source of equipment, requesting addition of the equipment to the Department's QPL shall provide the Division of Materials and Tests with the following:

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

current SDS

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 Standing on QPL.** The source shall provide written notification of any changes, revisions, or updates to the equipment, equipment's product name, SDS, source's name or address, and contact person to the Division of Materials and Tests.

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 older, 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 QPL.** Equipment will be removed from the QPL 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 **QPL 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 Consideration for Inclusion. To be considered for inclusion on the QPL 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 inclusion 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 Standing on QPL. 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, SDS, source name or address, contact person or product name to the Division of Materials and Tests.

13.3 Removal from QPL. A source will be removed from the QPL 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 Division of Materials and Tests
- 13.3.5 Failure to annually submit certifications of compliance and test reports, if required

14.0 **QPL** PROCEDURE J FOR RETAINING WALL SYSTEMS

- 14.1 **Consideration for Inclusion.** If the wall system has been approved for use in at least one state, or if any component of a wall system **already included on the QPL** changes, the information in 14.1.1 to 14.1.7 shall be provided to the **Department's** Geotechnical Engineering Division to be considered for **inclusion** on the Department's **QPL** of Retaining Wall Systems.

If the wall system has not been approved for use in any state, the information in 14.1.1, 14.1.2, 14.1.3, 14.1.6, 14.1.7, and 14.4 shall be provided to the **Department's** Geotechnical Engineering Division to be considered for **inclusion** on the Department's **QPL** of Retaining Wall Systems.

- 14.1.1 **Soft copy** of a Technical Evaluation Report. This is an evaluation of the retaining wall system by the **FHWA Highway Innovations, Developments, Enhancements, and Advancements (IDEA)**. The design verification of the system in the **IDEA** report shall use the AASHTO LRFD procedure.
- 14.1.2 **Soft copy** 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 **Soft copy** 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 Standing on QPL.** 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 Department's Geotechnical Engineering Division.

14.3 **Removal from QPL.** Reasons for removal of a product from the QPL 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 to the Department's Geotechnical Engineering Division.

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 QPL of Retaining Wall Systems will be the responsibility of the Director of the Department's Geotechnical Engineering Division. The System Owner will have the right to appeal the removal from the Department's QPL of Retaining Wall Systems to the Chief Engineer of Construction.

14.4 **Additional Method for Consideration for Inclusion.** The information required for a wall system not approved in any state to be considered for inclusion on the Department's QPL of Retaining Wall Systems will 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 or coarse aggregate No. 5 or 8 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 Department's Geotechnical Engineering Division for the following:

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

- e) Other items as deemed necessary

15.0 QPL PROCEDURE K FOR IMPACT ATTENUATOR OR GUARDRAIL END TREATMENTS.

15.1 **Consideration for Inclusion.** A source of a product, requesting addition of the source or product to the Department's QPL shall provide to the Division of Materials and Tests the following:

15.1.1 The FHWA eligibility letter, confirming the product is MASH compliant for the test level specified. In the absence of an eligibility letter, provide the crash test report confirming the product is MASH compliant for the test level specified. Where specific tests were deemed non-critical, the testing facility must provide a list of which tests were waived and the associated documentation supporting the waiver.

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 49-8.01(04). For impact attenuators, this information is shown in Indiana Design Manual Section 49-8.04(01).

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

The Department may reject the product under consideration due to

maintenance concerns.

The Department will place the product in two select field locations for a one-year evaluation period. The Department may decide **prior to the expiration of the evaluation period** if it determines there has been significant evidence of test units' performance and maintenance requirements. The Manufacturer 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 **shall be** 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 **QPL**.

After the one-year evaluation period, the Department will pay the vendor for the evaluation units and will determine whether to place the product on the **QPL**.

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

- 15.2 Maintaining Standing on QPL.** 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 MASH 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 Division of Materials and Tests.

- 15.3 Removal from QPL.** A maximum of three Manufacturer or products for each category will appear on the **QPL**. A Manufacturer or product will be removed from the **QPL** 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 parts delivery becomes a problem

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

16.0 QPL PROCEDURE L FOR DETECTABLE WARNING SURFACES.

16.1 Consideration for Inclusion. To have a detectable warning surface considered for inclusion on the Department's QPL of Detectable Warning Surfaces, the manufacturer shall provide to the Division of Materials and Tests the following:

16.1.1 For brick detectable warning surfaces, a sample of six units shall be provided. For cast iron detectable warning surfaces, the sample shall be a single unit. A current SDS shall be provided, if appropriate.

16.1.2 For brick and cast-iron detectable warning surfaces, 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 surface. Limitations as to the radius of concrete curb ramp installations shall be clearly stated.

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

16.1.4 Other detectable warning surfaces will be reviewed by the Division of Materials and Tests. 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 surface under evaluation. The manufacturer shall provide the detectable warning surfaces to the Contractor for installation at no 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 considered successful if at the end of the review period there is no indication of distress or color fading of the detectable warning surface, including the truncated domes. A product that is determined by the Department as successfully completing a field evaluation(s) will be included on the QPL.

16.2 Maintaining Standing on QPL. Random verification samples of the surfaces 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 Division of Materials and Tests. A Type B Certification in accordance with 916.02(b) substantiating compliance with applicable specifications shall be provided for brick and cast-iron detectable warning surfaces. A Type C Certification in accordance with 916.02(c) substantiating compliance with applicable specifications shall be provided for other detectable warning surfaces. The manufacturer shall provide written notification of any changes to the product or source after the detectable warning surface was included on the QPL.

16.3 Removal from QPL. A product will be removed from the Department's QPL 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 QPL PROCEDURE M FOR HIGH TENSION CABLE BARRIER SYSTEMS

17.1 Consideration for Inclusion. To be considered for inclusion on the QPL of Cable Barrier Systems, a manufacturer shall submit the following documentation to the Division of Materials and Tests:

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 inclusion 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 Department's construction contract specifications for the product

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

17.2 **Maintaining Standing on QPL.** 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 a system on the Department's QPL, 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 QPL.** A maximum of 5 systems will be maintained on the QPL. 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 **QPL PROCEDURE N FOR SOUND BARRIER SYSTEMS**

18.1 **Consideration for Inclusion.** To be considered for inclusion on the QPL of Sound Barrier Systems, a manufacturer shall submit the following documentation to the Division of Materials and Tests:

- 18.1.1** A letter requesting **inclusion** 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 **considered**. The Department will consider new systems for provisional **inclusion on the QPL** 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 **being considered** without production samples being available, the facility shall provide test reports on production samples within two years of the date **the system was provisionally included on the QPL**.
- 18.1.6** An inspection report detailing the condition of a sound barrier system of the type to be **considered**. 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 **considered**. 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 E90
- 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 C423 with specimens mounted in accordance with ASTM E795, 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 D6695 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, 1,600, and 2,400 hours. The color of the specimens shall be light tan, light brown, or light gray (**SAE-AMS-STD-595 color numbers 37769, 30450, or 36492 respectively**). 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 D660
 - b) No blistering in accordance with ASTM D714
 - c) No loss of adhesion in accordance with ASTM D3359
 - d) Chalking of 7 or greater in accordance with ASTM D4214, Method C
 - e) Color difference of 5 Δ NBS units or less as compared to the reference sample in accordance with ASTM D2244
- 18.1.11** A test report that indicates a flame spread index of 15 or less at 10 minutes in accordance with ASTM E84.
- 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 C672 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 C1262 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 QPL of Cement Sources.
 - 18.1.15.3** Reinforcement shall be included in the Department QPL of Uncoated Reinforcing Bar and WWR Manufacturers.
 - 18.1.15.4** Miscellaneous materials including admixtures, pozzolans, and repair materials shall be in accordance with the Department's procedures for accepting these 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 Standing on QPL. The manufacturer shall provide written

notification to the Department of any changes to the system, system name, changes in the manufacturer's 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 **inclusion on the QPL** 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 year.

18.3 Removal from QPL. A sound barrier system that exhibits poor field performance, as determined by the Department, will be removed from the **QPL**.

19.0 QPL PROCEDURE O FOR NTPEP AUDITED MATERIAL SOURCES

19.1 Consideration for Inclusion. An audited material source of a product, requesting **inclusion** of the source or product to **the** Department's **QPL** shall provide to the Division of Materials and Tests the following:

19.1.1 A letter requesting **inclusion of the product** shall be submitted to the Division of Materials and Tests.

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 **included on the QPL**. 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 Standing on QPL. 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 SDS, source name or address, contact person or product name to the Division of Materials and Tests.

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** 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.
- 19.2.1.3** 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.
- 19.2.1.4** 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 QPL. A source will be removed from the QPL 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 Test reports generated by the source which indicate non-compliance with the 95% statistical assurance requirement of Section 6.1.2.

19.3.6 Failure to provide timely and satisfactorily production data during the provisional period

20.0 QPL 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 Consideration for Inclusion. To be considered for inclusion on the QPL of Soil Modifiers, a source shall provide to the Division of Materials and Tests the following:

- a) A current SDS 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 byproducts are in accordance with ASTM C25 and meet the requirements of 913.04(b) 2.
- d) Test results for the total calcium and magnesium oxides (nonvolatile 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 C25, 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 C1271
 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 C110. 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 a laboratory from the Department's list of Qualified Geotechnical Consultants.
- 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 Standing on QPL. 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 Division of Materials and Tests. Tests shall be conducted by a laboratory from the Department's list of Qualified Geotechnical Consultants.

20.1.3 Removal from QPL. A product will be removed from the QPL 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 Consideration for Inclusion. To be considered for inclusion on the QPL of Soil Modifiers, a source shall provide to the Division of Materials and Tests the following:

- a) A current SDS 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 **ASTM C595**.
- e) Documentation that the free lime (CaO) is in accordance with **ASTM C114**.
- f) Test results of the reactivity of a soil from Indiana and the cement byproduct. 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 C110. 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 a laboratory from the Department's list of Qualified Geotechnical Consultants.

20.2.2 Maintaining Standing on QPL. A source on the QPL shall submit a chemical composition and mineralogy of the cement by-product every 6 months to the Division of Materials and Tests. Tests shall be conducted by a laboratory from the Department's list of Qualified Geotechnical Consultants.

The source shall provide written notification of any changes, revisions, or updates of the SDS, source name or address, contact person or product name to the Division of Materials and Tests.

20.2.3 Removal from QPL. A product will be removed from the QPL 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 QPL PROCEDURE Q FOR THERMOPLASTIC PIPE AND LINER PIPE SOURCES

21.1 **Consideration for Inclusion.** To be considered for inclusion on the QPL of Thermoplastic Pipe and Liner Pipe Sources, a source shall provide to the Division of Materials and Tests the following:

21.1.1 A summary of results of the specified tests for production in the previous year and a current SDS. 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 Standing on QPL.** A Type B Certification in accordance with 916 shall be submitted to the Division of Materials and Tests 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, SDS, contact person, or product name to the Division of Materials and Tests.

21.3 **Removal from QPL.** A source will be removed from the QPL 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 QPL PROCEDURE R FOR EPOXY COATING MATERIALS

22.1 **Consideration for Inclusion.** To be considered for inclusion on the QPL of

Epoxy **Coating Materials** under the Reinforcing Bar designation, a manufacturer shall submit the following documentation to the Division of Materials and Tests:

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 **SDS**. Current **SDSs** 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 Standing on QPL**. The manufacturer shall provide written notifications of any changes, revisions, or updates of the coating formulation, SDS, manufacturer name or address, or contact person to the Division of Materials and Tests.

22.3 **Removal from QPL**. 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 **QPL**.

23.0 **QPL** PROCEDURE S FOR GEOSYNTHETICS

23.1 Geotextiles

23.1.1 **Consideration for Inclusion**. A source of a product, requesting **inclusion** of the product **on the** Department's **QPL** shall provide to the Division of Materials and Tests the following:

- a) The product name, current SDS, 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 NTPEP. Test results shall not be more than three years old.
- 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.

- f) Verification that the manufacturing facility is annually certified as ISO - 9001 for geotextile.

23.1.2 Maintaining Standing on QPL. Geotextile manufacturers shall satisfactorily complete the NTPEP audit process.

The source shall provide written notification of any changes, revisions, or updates of the SDS, source name or address, contact person or product name to the Division of Materials and Tests.

23.1.3 Removal from QPL. A product will be removed from the QPL 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 and ISO certification.

23.2 Geogrid, Geocell Configuration System, and Geomembrane

23.2.1 Consideration for Inclusion. A source of a product, requesting inclusion of the product on the Department's QPL shall provide to the Division of Materials and Tests the following:

- a) The product name, current SDS, 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, no more than three years old.
- 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.
- f) Manufacturing Quality Control: Testing shall be performed at a laboratory accredited by GAI-LAP (Geosynthetic Accreditation Institute-Laboratory Accreditation Program).

23.2.2 Maintaining Standing on QPL. 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 Division of Materials and Tests.

The source shall provide written notification of any changes, revisions, or updates of the SDS, source name or address, contact person or product name to the Division of Materials and Tests.

23.2.3 Removal from QPL. A product will be removed from the QPL 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 and ISO 9001 certification.

24.0 QPL PROCEDURE T FOR MANHOLE GRADE ADJUSTMENT DEVICES.

24.1 Consideration for Inclusion. To have a manhole grade adjustment device considered for inclusion on the Department's QPL of Manhole Adjustment Devices, the manufacturer shall provide to the Division of Materials and Tests 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 Division of Materials and Tests. 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 considered 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 included on the QPL.

24.2 Maintaining Standing on QPL. 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 inclusion of the adjustment device on the QPL.

24.3 Removal from QPL. A product will be removed from the Department's QPL 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.

25.0 QPL PROCEDURE U FOR VIBRATING WIRE SETTLEMENT SYSTEM

25.1 Consideration for Inclusion. To have a vibrating wire settlement system considered for inclusion on the Department's QPL of Vibrating Wire Settlement Systems, the manufacturer shall provide to the Division of Materials and Tests the following:

25.1.1 The product name, current SDS, address of the manufacturer, and contact person.

25.1.2 Verification that the manufacturing facility is ISO – 9001.

25.1.3 Product literature which describes the product specification and measurements of the systems. Literature shall verify that the product meets the following minimal requirements: The settlement sensor shall be mounted on the settlement plate. The system shall have a settlement range between 15 to 20 m. The reservoir shall be a minimum size of 152 mm by 51 mm. The sensor shall be a minimum size 168 mm by 25 mm. The settlement plate shall be a minimum size of 305 mm by 305 mm by 6 mm. The vibrating wire settlement system shall have a resolution of 0.025% of the full-scale range with an accuracy of $\pm 0.1\%$ of the full-scale range. The system shall have the capability of being attached to a datalogger and be

remotely monitored via a cell phone modem.

25.2 Maintaining Standing on QPL. The source shall provide written notification of any changes, revisions, or updates of the SDS, source name or address, contact person or product name to the Division of Materials and Tests. A Type C Certification in accordance with 916.02(c) substantiating compliance with applicable specifications shall be provided on each contract.

25.3 Removal from QPL. A product will be removed from the Department's QPL if any of the following conditions occur:

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

25.3.2 Changes to the product without notification.

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

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