MP 703.00.24
REPLACES ML-10
SUPERCEDES: JANUARY 1995
REVISED: MAY 10, 2019

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MATERIALS CONTROL, SOILS AND TESTING DIVISION

MATERIALS PROCEDURE

SOURCE CONTROL OF AGGREGATES

1. PURPOSE

1.1 To assure continued quality of aggregates from Division-Approved Sources.

2. PROCEDURE

2.1 Division inspectors shall be aware that an approved commercial aggregate supplier may ship non-specification material to Division projects.

2.2 Under present quality assurance procedures, a quality check of all commercial sources supplying aggregates to the Division is conducted on a yearly basis. This check indicates the potential of a source to produce specification materials. Thus, when a commercial source is approved by MCS&T, it is understood that the supplier will continue to provide materials which meet the quality specifications detailed in the most recent edition of the West Virginia Department of Transportation Division of Highways Standard Specifications of Roads and Bridges. It is the obligation of the supplier to see that these corresponding specifications are continually met. However, the quality of a particular material may be subject to change.

2.3 Field personnel are responsible for quality assurance of materials previously approved by MCS&T and should be observant of the general appearance of materials supplied to Division projects. If the quality of the material being supplied to Division projects (through field observation) appears to meet quality specifications the material shall be acceptable for use in Division projects.

2.4 If a situation occurs in which the quality of the material cannot be verified through field observation and the issue cannot be resolved by District Personnel, a request shall be given to MCS&T to conduct an investigation. After the investigation is completed, a materials investigation report shall be issued, making any necessary recommendations to both the Construction Division and the supplier.

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MP 703.00.24
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2.4.1 MCS&T materials investigation:

2.4.1.1 An investigation conducted by MCS&T would include re-sampling of the materials for full quality testing. The testing would be done in accordance to the corresponding Specifications from the most recent edition of the West Virginia Department of Transportation Division of Highways Standard Specifications of Roads and Bridges for the materials in question.

2.4.1.2 If the investigation reveals the material currently being produced at the Commercial Source is not of acceptable quality, the source will be removed from the list of Approved Sources until action is taken by the producer to ensure that any subsequent material produced for Division projects is of specification quality.

Ron L. Stanevich, P.E.
Director
Materials Control, Soils and Testing Division

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION

MATERIALS PROCEDURE

GUIDE FOR CONTRACTOR QUALITY CONTROL OF ASPHALT CONCRETE

1. PURPOSE

1.1 To provide a method for daily monitoring and quality control of Asphalt Concrete.

1.2 To provide plant personnel with criteria upon which to base decisions of continuing or ceasing plant production.

2. SCOPE

2.1 This materials procedure shall be applicable to all Section 401 Asphalt Concrete types relative to compliance with Job Mix Formula (JMF) control limits as specified in the governing specifications.

3. DEFINITIONS

3.1 Job Mix Formula - The specification for a single mix produced at a single plant. This mix may be specific to a single project or be used on multiple projects if the basic design criteria (design compaction level and PG Binder grade) are the same.

3.2 Field Design Verification Samples and Tests - Those samples taken and tests conducted by the contractor to verify that a mix design can be produced within the limits of the criteria set forth by this Materials Procedure. These samples are taken during the initial use of each mix design or whenever circumstances described in this MP require a new field design reverification. These samples should not be confused with the Division verification samples that are used to determine specification compliance.

3.3 Quality Control Samples and Tests - Those samples taken and tests conducted by the Producer/Contractor to monitor and control the production of this product.

3.4 Verification Samples and Tests - Those samples taken and tests conducted by the Division to determine specification compliance.

4. DOCUMENTATION

4.1 The Contractor shall maintain adequate records of all testing and records of any production changes required to control their product. The records shall indicate the nature and number of observations made, the number and type of deficiencies found, and the nature of corrective action taken. The Contractor's documentation procedures will be subject to the review and approval of the Division at any time during the progress of the work being performed.

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4.2 Forms and Distribution: All test data shall be documented on forms provided by the Division. The original copy of the completed form shall be delivered to the District Materials Supervisor. One copy of each completed form is to be retained by the contractor until the project is completed. Testing shall be conducted using only the approved test methods listed in Section 401.5.1 of the Standard Specification unless specified otherwise in contract documents. Asphalt content and gradation test results shall be recorded on T417. Mix design property test results shall be recorded on form T406. To be an effective quality control program, tests must be completed in a regular and timely manner.

4.3 The Contractor shall take prompt action to correct conditions that have resulted, or could result, in the submission to the Division of materials and products that do not conform to the requirements of the Contract documents. The Contractor shall establish a detailed plan of action regarding the disposition of non-specification material. In the event that nonspecification material is incorporated into the project, the Division shall be notified immediately.

4.4 All Asphalt Concrete component materials shipped to the plant must have proper documentation which identifies the type and source of each material. This information shall be made accessible to the Division for review at any time.

5. JOB MIX FORMULA FIELD DESIGN VERIFICATION

5.1 For each JMF, a field design verification shall be conducted during the first days of plant production for the purpose of demonstrating that the mix can be produced within the specified tolerances set forth in this MP.

5.2 This field design verification shall consist of a randomly selected Asphalt Concrete sample taken in accordance with AASHTO T168 for each three hours of production, with no more than three samples in one day. A minimum of three samples are required for verification, however, three additional samples are required if none of the first three samples are completely within the specification limits. Samples used for gradation analysis during the verification process shall be obtained from the asphalt ignition oven samples (AASHTO T308). If there is a problem with major aggregate breakdown affecting the gradation test results when using the ignition oven, gradation samples may be obtained from hot bins, cold feeds, or extracted Asphalt Concrete samples.

5.3 Field design verification testing shall not be conducted if less than 200 tons (180 Mg) of material is to be produced in a single day. In such cases daily quality control testing shall be conducted in accordance with Section 6, and shall meet the gradation requirements of the Table 401.02.27B, the design asphalt content within ± 0.4%, and a minimum VMA of 0.5% below the design criteria specified in MP 401.02.22. The percent air voids shall be within the range of 2.5 – 6.5 percent for Base-I and 2.5 – 5.5 percent for all other mixes. Stability and flow shall be within the design limits specified in MP 401.02.22.

5.4 The field design verification mix property requirements are listed in Table 401.02.27A. Field design verification test results shall be documented on Form T408. Gradation

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requirements for the field design verification samples shall be as indicated in Table 401.02.27B. The gradation results shall fall within the limits of each specified control point with the exceptions as noted on the No. 8 and No. 16 sieves. Gradation results for all sieves listed in this table for each mix type shall be documentedon Form T421.

TABLE 401.02.27A

Mix Property Field Design Verification Requirements

Property	Field Verification Tolerances
Asphalt Content (%)	JMF ± 0.4 %
Air Voids (%) – Base-I	3.0 – 6.0 %
Air Voids (%) – All other mix types	3.0 – 5.0 %
Voids in Mineral Aggregate (VMA) %	Min. of 0.5 % Below Design Criteria
Stability (Newtons)	Minimum Design Criteria
Flow (0.25 mm)	Limits of Design Criteria

TABLE 401.02.27B

Design Aggregate Gradation Requirements for Marshall Mixtures (Note 8)

TYPE OF MIX	Base-I	Base-II (Patch & Level)	Wearing-IV (Note 9)	Wearing-I (Scratch)	Wearing-III
SIEVE SIZE	Nominal Max Size 1 ½ in (37.5 mm)	Nominal Max Size ¾ in (19 mm)	Nominal Max Size ¾ in (19 mm)	Nominal Max Size 3/8 in (9.5 mm)	Nominal Max Size No. 4 (4.75 mm)
2 in (50 mm)	100				
1 ½ in (37.5 mm)	90 – 100				
1 in (25 mm)	90 max	100	100		
¾ in (19 mm)	-	90 – 100	90 – 100		
½ in (12.5 mm)	-	90 max	90 max	100	
3/8 in (9.5 mm)	-	-	-	85 - 100	100
No. 4 (4.75 mm)	-	-	47min	80 max	90 – 100
No. 8 (2.36 mm)	15 – 36	20 – 50	20 – 50	30 – 55	90 max
No. 16 (1.18 mm)	-	-	-	-	40 – 65
No. 30 (600 µm)	-	-	-	-	-
No. 50 (300 µm)	-	-	-	-	-
No. 200 (75 µm)	1.0 – 6.0	2.0 – 8.0	2.0 – 8.0	2.0 – 9.0	3.0 – 11.0

Note 8: For quality control of the mixture the allowable tolerances for each JMF shall be the specified design control points shown in Table-3 with the exception that a Wearing-III mix shall have a tolerance limit of the JMF ± 5% on the 1.18 mm (No. 16) sieve, and all other mix types shall have a tolerance limit of the JMF ± 6% on the 2.36 mm (No.8) sieve. These tolerances shall also be applied to the mix design and shall be documented on the T-400 Form. The tolerances shall not fall outside of the specified control points of Table-3.

Note 9: In addition, a Wearing-IV mix shall have a tolerance limit of the JMF ± 5% on the 4.75 mm (No. 4) sieve, but not below the minimum requirement.

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5.5 After each of the field design verification samples is tested, the results shall be evaluated to determine conformance to the verification requirements. If any test results fall outside the allowable tolerance limits established in Table 401.02.27A or Table 401.02.27B then steps must be taken to make any necessary production adjustments to bring the mix back to within specification limits. Steps can include bin changes as described in 5.8, as well as asphalt content adjustments of ± 0.2% from the approved JMF target. If, after three samples, all of the design criteria and gradation requirements are within the allowable tolerance limits on at least one sample, then verification of the design is complete. If all criteria is not met, then three additional samples shall be tested. If, after six samples, the Division determines that the mix cannot be produced within specification limits, then a new mix design will be required.

5.6 The verified JMF target for asphalt content shall be selected at a value within ± 0.2% of the approved design asphalt content using the results of the field verification testing to determine the appropriate value. The VMA production target shall be determined from the field verification test data at a value which also provided an air void content that was at or near the JMF target air void content based on the results of the field verification testing. This value may be adjusted to optimize the ± 1.0 tolerance of Table 401.02.27C if the result is near the minimum allowable requirement. The production target for air voids shall remain at the medium value of the design.

5.7 If the field design verification process is successful, then a new target maximum density shall be established for compaction control by averaging the maximum density results of all of the samples used for verification of the mix. The District will forward the verification test data to the Contract Administration Division, Materials Section.

5.8 The maximum allowable blend change for a mix design shall be ten percent on any single aggregate component. If an aggregate blend change of more than five percent on any single aggregate component is required, the Contractor shall evaluate the mix to determine whether or not the volumetric properties, FA ratio, and coarse aggregate angularity are adversely affected by the change in blended aggregates. The Contractor shall also determine whether or not the aggregate gradation requirements are still being maintained. The calculations used in this evaluation shall be provided to the District. The District will review and verify the results of this evaluation. If the District determines that any of the above-mentioned properties are adversely affected by the blend adjustment, then they may revoke the change in the JMF. If the JMF volumetric properties cannot be maintained without these non-approved changes, then the contractor will be required to provide a new mix design.

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5.9 After the field design verification has been successfully completed and quality control testing (as described in Section 6.) has begun, the Contractor shall monitor the maximum specific gravity of the mix for any consistent change. If, over a five-sample period, there is an average change in the maximum specific gravity of ± 0.02 or greater from the verified value of the mix then a field design reverification may be required. A reverification shall not be conducted if the averages of the % asphalt, % air voids, %VMA, stability and flow of the five quality control samples do not meet the requirements of Table 401.02.27C. The District will review the Contractor's test data, compare it to their verification sample test data, and determine if a reverification is necessary. If the District determines that a reverification of the mix is needed, a new blended aggregate bulk specific gravity shall also be determined for the mix before the field reverification begins. The District will forward the reverification and bulk aggregate specific gravity test results to the Contract Administration Division, Materials Section.

5.10 All approved mix designs shall be reverified on the first project on which they are used in any subsequent years as long as there are no changes to the design specifications that would require a new mix design. In addition, the blended aggregate bulk specific gravity shall be determined before reverification begins.

6. QUALITY CONTROL REQUIREMENTS

6.1 After the field design verification has been successfully completed, quality control sampling and testing shall begin. If production is to continue for four hours or more after the last field design verification sample was taken, then the first randomly selected quality control sample shall be taken within that remaining time period. If production continues for less than four hours after the last field design verification sample was taken, then the first randomly selected quality control sample will not be required until the next production day.

6.2 The allowable design property tolerances for each JMF shall be as set forth in Table 401.02.27C. The gradation of the mix shall continue to pass through the control points within the tolerances established in Table 401.02.27B.

6.3 Adjustments to the accepted JMF aggregate proportions shall be made only for the purpose of maintaining the gradation requirements of Table 401.02.27B and/or the design properties of Table 401.02.27C. The maximum allowable adjustment shall be as indicated in Section 5.8. The minimum sample requirements of the approved quality control plan will be sufficient when the allowable adjustments are made as a result of deficient or borderline test properties of the previous test sample.

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TABLE 401.02.27C

Quality Control Mix Property Tolerances

Property	Production Tolerances
Asphalt Content (%)	Verified JMF ± 0.4 %
Air Voids (%)	JMF ± 1.5 %
Voids in Mineral Aggregate (VMA) %	Verified JMF ± 1.0 % with a minimum of 0.5 % below the minimum design criteria
Stability (Newtons)	Minimum Design Criteria
Flow (0.25 mm)	Limits of Design Criteria

6.4 If the previous test sample meets all specification requirements, but the Contractor later determines that the gradation of the material entering the plant has changed, then an aggregate proportion adjustment up to two percent will be allowed without requiring an additional test sample. However, if more than one such change is made during the production day, then an additional test sample beyond that specified in the approved quality control plan will be required for each adjustment.

6.5 Minimum Sampling and Testing Frequency: During each day of plant production a minimum of one sample shall be taken for production periods of six hours or less. When the production period exceeds six hours, a minimum of one sample for each half of the production period shall be taken. If the production period exceeds twelve hours, a third sample shall be taken. The Contractor's sampling frequency shall be in accordance with their approved Quality Control Plan.

6.6 For the purpose of administration, the quantity of material represented by an individual test shall be determined as follows: the first sample taken after the field design verification has been approved shall represent the quantity produced from the beginning of production after field design verification until the time the sample was taken. The second sample shall represent the material produced between the time that the first and second samples were taken and so on. The last sample taken prior to a halt in production under a given JMF shall represent that quantity of material produced from the time that the next to last sample was taken until production was stopped.

6.7 Sampling and testing for evaluation of compliance with the verified JMF shall be as follows: Obtain a sample large enough for determining the percent asphalt, percent air voids, percent VMA, and gradation of the mix in accordance with the specified test methods listed in Section 401.5.1 of the Specifications. If excessive aggregate breakdown in the ignition oven prevents proper gradation analysis, aggregate samples may be obtained from hot bins, cold feeds, or extracted Asphalt Concrete samples.

6.8 A four-sample average shall be used for the purpose of determining whether or not the material meets specification requirements. The test results of the first four samples shall be averaged. After the fifth sample is taken a four-sample moving average shall begin. This first moving average shall consist of the average of the second through fifth test samples. Each time a new sample is taken a new moving average shall be calculated by

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averaging the new sample with the previous three samples. The moving average shall continue through a single paving season (one calendar year).

6.9 In cases where production is limited and less than four samples of the specified mix design are taken, then the average shall consist of the total number of samples taken during the paving season in accordance with the Quality Control Plan. A new four sample average shall be established at the first startup of a new paving season after the field design verification has been completed.

6.10 The Contractor shall maintain control charts for percent asphalt, percent air voids, and percent VMA. These control charts shall be prepared in accordance with the guidelines of MP 300.00.51. As an alternative method, the control charts may be prepared with a personal computer using software that can generate such charts and provide a distinct graphic representation of all data points. Data points required on the control charts are the daily individual Contractor quality control tests, district verification sample tests, and the moving average of every four Contractor quality control tests. All data points shall be calculated to the nearest 0.1 percent.

6.11 For hand drawn charts, the quality control test data points shall be represented by a small blue circle symbol "⧧" and connected by a dashed line. The four sample moving average data points shall be represented by a small red square symbol "0" and connected by a solid line. District verification sample test data points shall be represented by a small red circle symbol "⧧", but shall not be connected. The upper and lower tolerance limits of the test properties which were established through the field design verification described in Section 6, shall be represented by solid horizontal lines.

6.12 If the computer-generated control chart cannot be produced using the symbols and lines described above, then a graph legend shall be included which shall indicate the graphic symbols used to represent the required data points and lines.

6.13 The quality control charts shall be kept up to date and placed in a location that is easily accessible to the Division for review at any time.

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7. DEGREE OF NONCONFORMANCE

7.1 Should the four-sample average of test values for percent asphalt, percent air voids, or percent VMA fall outside the verified JMF tolerances by more than the allowable deviation of Table 401.02.27C then production shall be halted until the Contractor takes necessary steps to bring production under control. Production shall also be halted if three consecutive aggregate gradation tests fall outside the tolerance limits of Table 401.02.27B. Actions taken by the Contractor to bring production back in control shall be documented in the plant diary.

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7.2 When the four sample average of the Contractor's quality control tests for percent asphalt or percent air voids falls outside the JMF tolerances of Table 401.02.27C, the Sublot of material represented by the last individual test value in the moving average shall have its price reduced in accordance with the schedule set forth in Section 7.3. In the case where the average is nonconforming and the last tested Sublot is conforming, then there would be no price adjustment.

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7.3 The degree of nonconformance shall be determined using the following relationship:

When the moving average is greater than the upper control limit Q_U

$= X_n - UL$

When the moving average is less than the lower control limit

$Q_L = LL - X_n$

Where Q_U = Percent of non-conformance at Upper Limit Q_L
= Percent of non-conformance at Lower Limit UL = Upper Limit
LL = Lower Limit
X_n = Average of four consecutive test values (less than four when production is limited)

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If it is decided by the Division that the material is to be allowed to remain in place, then the Sublot shall have its price reduced in accordance with Tables 401.02.27D and/or 401.02.27E as applicable.

TABLE 401.02.27D
ADJUSTMENT OF CONTRACT PRICE FOR MIX NOT WITHIN TOLERANCE LIMITS OF PERCENT ASPHALT

QU or QL	Percent of Contract Price to be Paid
0.0	100
0.1	98
0.2	96
0.3	92
Greater Than 0.3	*

* The Division will make a special evaluation of the material and determinethe appropriate action.

TABLE 401.02.27E
ADJUSTMENT OF CONTRACT PRICE FOR MIX NOT WITHIN TOLERANCE LIMITS OF PERCENT AIRVOIDS

QU or QL	Percent of Contract Price to be Paid
0.0	100
0.1	98
0.2	96
0.3	92
Greater Than 0.3	*

* The Division will make a special evaluation of the material and determinethe appropriate action.

7.4 Should the moving average of both the test properties for the same Sublot fall outside of the JMF tolerance, thus resulting in a reduced price for each, then the following procedure shall be used. The quantity of material represented by the last Sublot in the moving average will have an adjusted unit price which is the product of the original price times the percent as a result of non-conformance of the first test property times the percentage unit price as a result of non-conformance of the second test expressed in the following formula.

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AUP = OUP x PUPAC x PUPAV *

Where: AUP = Adjusted Unit Price OUP = Original Unit Price
PUPAC = Percent Unit Price as a result of Asphalt Content Analysis expressed as a decimal
PUPAV = Percent Unit Price as a result of Air Void

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Analysis expressed as a decimal

* PUPAC and PUPAV are used in the formula as needed as a single non-conforming item or together for both non-conforming items as shown.

7.5 A new moving average shall start with the fourth sample that is taken after production is resumed (less than four when production is limited). If, at any time, the Division determines that a mix cannot be consistently produced within the tolerance limits of the verified design properties, approval of the mix may be revoked and the contractor will be required to provide a new mix design.

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8. SMALL QUANTITY TESTING

8.1 In the event that project activities are such that not more than 75 tons (70 Mg) of a specific mix design are being produced per day during the period of an entire calendar week, then the following small quantity testing requirements shall apply.

8.2 If the plant source rating is A-1, as determined per MP 700.00.52, Guide To Source Rating System Relative To Maintenance Contracts, then the minimum quality control sample requirements shall be one sample per week. The sample shall be taken on the first day of use during the week. If the plant source rating is A-2, as determined per MP 700.00.52, then the normal testing requirements of this MP shall apply.

9. DIVISION VERIFICATION SAMPLING AND TESTING

9.1 Verification sampling and testing is the responsibility of the Division. Quality control tests conducted by the Contractor may be used as a part of the verification process. Verification activities may be accomplished in any of three ways: 1) By conducting sampling and testing completely independent of the Quality Control activities, 2) by witnessing tests performed by the Contractor, or 3) by a combination of both the above. In all cases, those samples and tests taken by the Division completely independent of the Contractor will be taken at a frequency approximately equal to 10% of the frequency required in the Contractor's approved Quality Control Plan for the applicable item.

9.2 The verification samples taken by the Division will be statistically evaluated for similarity to the Contractors quality control tests in accordance with the guidelines set forth in MP 700.00.54. If the evaluation indicates that the Division's test results are similar to the Contractor's test results, then the material represented by this evaluation will be considered acceptable. Those properties to be evaluated, as referenced in MP 700.00.54, will consist of percent asphalt, percent air voids, stability, flow, and gradations. In addition, the VMA test results will be evaluated using the guidelines of MP 700.00.54.

9.3 If a dissimilarity is detected, an immediate investigation will be conducted to determine the cause. The intent of the investigation is to define and correct any testing deficiencies that may cause a misrepresentation of the tested material.

_____
Ron L. Stanevich, P.E.
Director
Materials Control, Soils and Testing Division

RLS:C

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MASTER RANGE FOR HOT-MIX ASPHALTASPHALT CONCRETE TOTAL PERCENT PASSING EACH SIEVE

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Wearing-IV

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Note 1: All mixes except Wearing-III. **Note 2:** Wearing-III only.

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION

MATERIALS PROCEDURE

GUIDELINES FOR ESTABLISHING AND MAINTAINING APPROVED PRODUCT LISTS OF MATERIALS AND SOURCES

1. PURPOSE

1.1 To establish general guidelines for establishing and maintaining approved product/producers lists of material producers, distributors and sources, commonly know as the Approved Product List (APL), which are frequently used on WVDOH projects.

1.2 This MP is distinguished from MP 106.00.02 "Procedure for Evaluating Products/Processes for Use in Highway Construction" which outlines the procedure for considering completely new products that have not yet been specified or consider in construction plans, notes, or other construction documents.

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Comment [1]: I'm going to need some help on this because I don't know 100 percent about how products or items are on plans

2. SCOPE

2.1 This procedure shall apply to all sources and materials that are suitable for acceptance with a reduced testing frequency. Because of the uniqueness or complexity of some products, additional Materials Procedures may be necessary to supersede the requirements to this procedure.

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3. REFERENCED DOCUMENTS

3.1 West Virginia Division of Highways Standard Specifications, Roads and Bridges.

3.2 Materials Procedure 106.00.02 - Procedure for Evaluating Products/Processes for Use in Highway Construction.

3.3 Materials Procedure 100.00.01N - Special Testing of Materials – ST-1 Form and Submission Procedure.

4. REQUISITES FOR THE CREATION OF AN NEW APPROVED LIST

4.1 A Champion, typically the appropriate Materials Control Soils and Testing (MCS&T) Division Group Supervisor or their designee shall put forth and recommend the new APL to the Director of MCS&T or their designee (henceforth referred to as Director.)

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4.2 A clear acceptance criterion shall be established. In order for a product or system to be considered as a candidate for a new APL, one of the following acceptance criteria shall be met:

4.2.1 Approval by national approval agencies such as NTPEP, ASSHTO etc.

4.2.2 Historic usage and approval on state projects by other means such as ST-1 as outline in MP 100.00.01N, plan notes, etc.

4.2.3 Consistent satisfactory compliance of the product with the WVDOH Standard Specifications.

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5. APPROVED CRITERIA

5.1 Approval shall be granted by the Director of MCS&T, or their designee to a material or source providing at least one of the following criteria are met:

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5.1.1 The manufacturer of the material has developed and operates under a Division approved Quality Control Plan that sufficiently controls the quality of the material to the extent that the possibility of a substandard material being produced and shipped is substantially reduced if not eliminated.

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5.1.2 The record of specification compliance of the material or source is satisfactory to the Division.

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5.1.3 The manufacturer has successfully undergone an evaluation of manufacturing and quality control processes that has led to certification or accreditation by a Division recognized accreditation agency.

5.1.4 Acceptance or approval of a particular material by an AASHTO national and/or regional test program.

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5.1.5 Acceptable evaluation by field-testing of a material or product design analysis.

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5.2 Unless otherwise directed by the Director, acceptance criteria shall be documented and maintained by the Champion. This acceptance criteria shall be available in the MCS&T ProjectWise folder in the event of employee turnover so other employees will be able to consistently duplicate approval process.

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5.2.1 A sample of APL acceptance documentation is attached and the current version of this file is available on the WVDOH MCS&T webpage toolbox.[1]

6. RETENTION OF APPROVED STATUS

6.1 All approved materials or sources shall be subject to periodic inspection and/or review at the discretion of the APL champion to determine if the approved product(s) are maintaining the same characteristics and quality as those originally approved.

6.1.1 Validation of all approved lists shall be performed at least once every two years, or at a frequency as determined by the champion of the APL. Once the validation process has been completed, each re-approved source shall retain its issued approval number unless the champion determines the product has changed from its original state enough to warrant a new number (For example, a new, updated version of the product.)

6.1.2 Re-approval verification shall be based on one or more of the following as determined by the champion:

6.1.2.1 Satisfactory results from testing random samples collected at the source, supplier or from a Division project.

6.1.2.2 Re-inspection of the manufacturing and quality control processes.

6.1.2.3 Satisfactory statistical evaluation of routine quality control test data supplied by the manufacturer.

6.1.2.4 Certified statement from the manufacturer that the approved product is being manufactured under the same design, formulation, manufacturing process and/or quality control processes that were in effect when product or source was originally approved.

6.1.2.5 Continued presence on an accepted national/regional program such as NTPEP or ASSHTO etc.

7. DOCUMENTATION AND AVAILABILITY OF APLS

7.1 The champion shall present the new or updated APL to the for approval. Once approved, the APL will be uploaded to the MCS&T Webpage[2] and distributed to the District Materials Supervisors and any other interested parties.

7.1.1 All manufacturers or distributors of approved materials shall be required to reference their approval number on the shipping documents (typically invoices) that accompany the approved material to the project.

[1] https://transportation.wv.gov/highways/mcst/Pages/tbox.aspx
[2] https://transportation.wv.gov/highways/mcst/Pages/APL_By_Number.aspx

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Ronald L. Stanevich, P.E.
Director
Materials Control, Soils & Testing Division

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All approval numbers assigned to particular materials and sources shall be directly related to the data used to justify approval or re-approval. If the justification is contained in a Materials Inspection Report (MIR), then the MIR number shall also serve as the approval number. When approval or re-approval is based on a test report, the laboratory number assigned to the sample shall also serve as the material or source approval number. If more than one laboratory number is involved, the approval number shall represent a composite laboratory number that cross references all the individual laboratory numbers used in the evaluation of the product or source. If the approval or re-approval is based on a certified statement or certified test data from the manufacturer, then the approval number shall be assigned and affixed to the document.

Approved material numbers or approved source numbers shall be distinguished from regular report and laboratory numbers by the letter "A" immediately following the approval number.

1.1.1

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION
MATERIALS PROCEDURE

ACCEPTANCE OF NON-STANDARD OR NON-CONFORMING MATERIALS IN CONSTRUCTION

1. PURPOSE

1.1 To provide guidelines of sampling, testing and resolution of all materials that may be addressed in in plans, but are not otherwise addressed by the current edition of the Standard Specifications and Supplementals (Standard Specifications) and/or Materials Control, Soils and Testing Division (MCS&T) testing.

1.2 Provide a method for accepting material that does not meet the requirements of the above-mentioned documents and is not otherwise addressed in those documents.

1.3 Provide guidelines and/or course of action/inaction when a material test has not been performed or has been performed incorrectly.

2. SCOPE

2.1 This procedure applies to all materials that do not have an already established acceptance, or non-conformance resolution already established in the Standard Specifications, or any other WVDOH documents.

2.2 This procedure applies to situations where the resolution of a non-conformance is not clearly defined or described by the Standard Specifications or other WVDOH documents, or the District wishes to diverge from these documents.

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Comment [2]: Is this incorrect? Like if the District decides to leave material in place anyways

3. PROCEDURE

3.1 ST-1 - The special testing (ST-1) form shall be submitted to MCS&T with documentation and/or data sheets pertaining to the proposed material. The ST-1 is to be submitted prior to use for all materials. Pre-sampled material cannot be used until authorization is received from the MCS&T Division or the non-conformance has been resolved.

3.1.1 Payment for this material shall be withheld upon non-concurrence of this sample, pending a DMIR.

3.2 DMIR – A District Materials Inspection Report (DMIR) shall be submitted to MCS&T for authorization / approval for the following situations:

3.2.1 The Material did not meet the Standard Specifications or other Division Testing Requirements.

3.2.2 The Material is not addressed in the Standard Specifications or other Division Documents and has been placed before testing (ST-1 or acceptance methods were not utilized.)

3.2.3 Sampling and/or testing was not done correctly, samples or documentation was lost, or testing otherwise cannot be used to represent or accept the material.

3.2.4 The resolution of the material has not been addressed in a change order or other contractual resolutions.

4. ST-1 DOCUMENTATION AND SUBMISSION TO MCS&T

4.1 The ST-1 Form is available as a pdf file on the Division Webpage[1]. This form shall be filled out with all the listed information pertaining to the material that the contractor proposes to use. All required fields must be completed before submitting the ST-1 to MCS&T.

4.1.1 The District must electronically send the fillable PDF form. This cannot be hand-written and scanned (the Sample ID must be able to be selected for Copy and Paste).

4.2 The ST-1 sample shall be submitted by District Construction to the District Materials Supervisor. The District shall then generate the sample and associate all line items before submitting the ST-1 sample to MCS&T for review and concurrence/non-concurrence. A workflow guideline for this is available in the MCS&T ProjectWise folder (location provided by request.)

4.3 The ST-1 shall be sent to the ST-1/DMIR mailbox (St1dmir@wv.gov). The sample shall be logged and sent to the applicable MCS&T section to review. If the subject material(s) meets the project requirements, MCS&T will concur with the sample. The reviewer will then authorize the sample.

4.3.1 An email will be generated to the District Materials Supervisor notifying them that the ST-1 has been concurred and authorized. The District will place the ST-1 and MCS&T email into ProjectWise under the Contract ID and associated line item number.

4.4 If the material fails to meet the minimum requirements, the reviewer will mark the sample as non-concur, then authorize the sample. The reviewer will send the ST-1 to the District Materials Supervisor stating why the ST-1 was not concurred. The District will place the ST-1 and MCS&T email into ProjectWise under the Contract ID and associated line item number.

5. DMIR DOCUMENTATION AND SUBMISSION TO MCS&T

5.1 The DMIR shall also include all the pertinent project information that is provided on the WVDOH DMIR form. A sample DMIR form is attached. The live DMIR form is available on the WVDOH MCS&T Webpage.

5.1.1 The DMIR shall be sent to the ST-1/DMIR mailbox (St1dmir@wv.gov).

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[1] https://transportation.wv.gov/highways/mcst/Pages/tbox.aspx

5.2 The DMIR shall include the following sections: General Information, Materials Requirement, Materials Inspection, Investigation, Recommendation, and Attachments.

5.3 The Materials Inspection Section shall clearly state the purpose and scope, giving the problem statement of the situation that initiated the DMIR.

5.3.1 A description of the material, known quantities, technical issues, or any requirement from the applicable Specifications, Contract Proposal, Project Plans, Material Procedures (MPs), Standard Details, Special Provisions, AASHTO, ASTM, or any Non-Specification issues should be provided.

5.4 The Investigation Section shall clearly state all relevant details of the situations during the occurrence.

5.4.1 A justification and any supporting and/or relevant detail shall be provided.

5.5 The Recommendation Section shall clearly state and justify the final price assessment resolution (which may be $0.00), including all applicable fees and penalties.

5.5.1 The assessment fees should be listed individually and with a final total price assessment. A justification of the price assessment shall be provided.

5.5.2 A resolution and a justification of the recommendation shall be provided.

5.6 The Attachment Section shall provide the necessary documentation and evidence for the materials inspection.

5.6.1 All attachments shall provide the Laboratory.

5.6.2 Project Data, Source Data, Sample Data, Lab Data, Daily Reports, Invoices, and/or any other document necessary to provide evidence should be provided.

5.7 A DMIR will originate in the District and be sent to the District Construction Engineer, then to MCS&T who will either concur or non-concur. It is then sent to Contract Administration, then to Regional Construction Engineer, then back to the District Construction Engineer.

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Comment [5]: RLS comment - Who submits, what happens if they don't act upon 30 days? These types of time frames are better suited as requirements in the specifications.

Ronald L. Stanevich, P.E.
Director
Materials Control, Soils & Testing Division

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Comment [6]: RLS Comment - Either on the memo or DMIR form we need to establish a signature block and note that the District CE needs to be aware.

RLS:PBc