



## **Appendix D – Frequency Guide, Construction Phases**

# Material Quality Assurance Processes

## Aggregate Materials, Controlled Mixtures

### Project Construction

Material Verification for SATD Materials			Material Verification
Project Engineer to verify load ticket for correct JMF.	1 per	1	Placement Day
Project Site Testing			Material Sampling and Testing
Compaction and Moisture analysis performed by Project Engineer. Submit compaction report to MMD for clearance.	1 per	1	Placement Day
	1 per	1	Lane Mile per Lift

## Aggregate Materials, Crushed Gradations

### Material Production

SATD Material Review			Material Certification for Project Usage
Material to be sampled as Common Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	1 per	1	Prior to Usage on Project
Material to be sampled as Capping Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	2 per	1	Prior to Usage on Project
Material to be sampled as Modified Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	2 per	1	Prior to Usage on Project
Material to be sampled as Select Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	2 per	1	Prior to Usage on Project

### Project Construction

Material Verification for SATD Materials			Material Verification
Project Engineer to verify material product, submit Form 14.	1 per	1	Placement Day
Project Engineer to submit verification samples of Common Borrow material. 35 LBS in a Soils Bag	1 per	15000	Cubic Yard
Project Engineer to submit verification samples of Modified Borrow material. 35 LBS in a Soils Bag	1 per	15000	Cubic Yard
Project Engineer to submit verification samples of material of Select Borrow. 35 LBS in a Soils Bag	1 per	15000	Cubic Yard
Project Site Testing			Material Sampling and Testing

# Material Quality Assurance Processes

<p><b>Compaction and Moisture analysis of Common Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.</b></p> <p>35 LBS in a Soils Bag</p> <p><b>Compaction and Moisture analysis of Capping Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.</b></p> <p>35 LBS in a Soils Bag</p> <p><b>Compaction and Moisture analysis of Modified Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.</b></p> <p>35 LBS. in a Soils Bag</p> <p><b>Compaction and Moisture analysis of Select Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.</b></p> <p>35 LBS in a Soils Bag</p> <p><b>Compaction and Moisture analysis of Select Borrow for Trench Backfill to be performed by Project Engineer. Submit Compaction report to MMD for clearance.</b></p>	<p>4 <b>per</b> 1</p> <p>1 <b>per</b> 2000</p> <p>4 <b>per</b> 1</p> <p>1 <b>per</b> 2000</p> <p>4 <b>per</b> 1</p> <p>1 <b>per</b> 2000</p> <p>4 <b>per</b> 1</p> <p>1 <b>per</b> 2000</p> <p>1 <b>per</b> 150</p>	<p>Lane Mile per Lift</p> <p>Cubic Yard</p> <p>Lane Mile per Lift</p> <p>Cubic Yard</p> <p>Lane Mile per Lift</p> <p>Cubic Yard</p> <p>Lane Mile per Lift</p> <p>Cubic Yard</p> <p>Linear Feet per 3 Foot Lift</p>
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## Aggregate Materials, High Friction Surf. Treatment

### Material Production

<b>SATD Certification Review</b>		<i>Material Certification for Project Usage</i>	
Material Certification/Documentation to be provided by material supplier during Source Submission.	1 <b>per</b> 1	Prior to Usage on Project	
<b>SATD Material Review</b>		<i>Material Certification for Project Usage</i>	
Supplier to provide SATD samples of Calcined Bauxite Aggregate 45 days prior to construction. Supplier to contact SATD for delivery instructions.	2 <b>per</b> 1	Prior to Usage on Project	
Supplier to provide SATD samples of Polymer Resin Binder. Supplier to contact SATD for delivery instructions	1 <b>per</b> 1	Prior to Usage on Project	

### Project Construction

<b>Material Verification for SATD Materials</b>		<i>Material Verification</i>	
Project Engineer to verify the coverage rate of the retained aggregate meets the required quantity of the special provision	1 <b>per</b> 1	Test Section	
Project Engineer to contact the Office of Material Technology to coordinate field acceptance testing (Table 3 of Special Provision) within 60 days after Construction	1 <b>per</b> 0.1	Lane Mile	

## Aggregate Materials, Other Stone and Sand

### Project Construction

<b>Material Verification for SATD Materials</b>		<i>Material Verification</i>	
Project Engineer to verify material, Submit form 14 for clearance	1 <b>per</b> 1	Item Completion	

## Aggregate Materials, Recycled PCC Gradations

# Material Quality Assurance Processes

## Material Production

### SATD Certification Review *Material Certification for Project Usage*

Material Certification to be provided by material supplier during facility visit. 1 per 1 Prior to Usage on Project

### SATD Material Review *Material Certification for Project Usage*

Material to be sampled as Common Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 2 per 1 Prior to Usage on Project

35 LBS in a Soils Bag

Material to be sampled as Modified Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 2 per 1 Prior to Usage on Project

35 LBS in a Soils Bag

Material to be sampled as Select Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 2 per 1 Prior to Usage on Project

35 LBS in a Soils Bag

## Project Construction

### Project Sampling and Lab Testing of SATD Material *Material Verification*

Project Engineer to submit verification samples of Common Borrow material. 1 per 15000 Cubic Yard

35 LBS in a Soils Bag

Project Engineer to submit verification samples of material of Modified Borrow. 1 per 15000 Cubic Yard

35 LBS in a Soils Bag

Project Engineer to submit verification samples of Select Borrow material. 1 per 15000 Cubic Yard

35 LBS in a Soils Bag

### Project Site Testing *Material Sampling and Testing*

Project Engineer to verify pH of placed recycled materials. 1 per 1 Project Completion

Project Engineer to verify pH of placed material, and perform Compaction and Moisture analysis of Common Borrow. Submit Compaction report to MMD for clearance. 4 per 1 Lane Mile per Lift  
1 per 2000 Cubic Yard

Project Engineer to verify pH of placed recycled material, and perform Compaction and Moisture analysis of Modified Borrow. 4 per 1 Lane Mile per Lift  
1 per 2000 Cubic Yard

Project Engineer to verify pH of placed material, and perform Compaction and Moisture analysis of Select Borrow. Submit Compaction report to MMD for clearance. 4 per 1 Lane Mile per Lift  
1 per 2000 Cubic Yard

## Asphalt Mixtures

## Material Production

### Notification of Production for ATD materials *Production Notification*

# Material Quality Assurance Processes

Producer to notify the Asphalt Technology Division 1 day prior to production. 1 per 1 Placement Day

## Project Construction

### Core Sampling for Asphalt Mix Density Analysis Material Sampling and Testing

Project Engineer shall verify that the contractor takes QC and QA Density Cores at random locations in the pavement. (1 Sample = 5 Cores Min. See Material QA Manual for more information) 2 per 1 Production Day

1 Sample = 5 - 6" Dia. Cores (min)

### Density Gauge testing for Patches or Small Quantities Material Sampling and Testing

Patch density measured at random locations with an asphalt density gauge, recorded on a Form 73-1P and submitted to OMT. See specification 505.03.14 for additional details. 1 per 1 Lift of each Patch

2 Readings per test

### Box Sampling for Asphalt Mixture Material Sampling and Testing

Project Engineer shall verify that the contractor takes QC and QA Mix Box at random intervals during placement of asphalt mixture. 2 per 1000 Ton  
2 per 1 Production Day

1 Sample = 1-50 LB Box (2-50 LB for 25.0mm Mix, 2-50 LB for 37.5mm Mix)

### Box Sampling for Patches or Small Daily Quantities of Asphalt Mixture Material Sampling and Testing

Project Engineer shall verify that the contractor takes QC and QA Box Samples at random intervals at least once per mix for every 1000 tons or once per mix weekly, whichever yields the greater frequency. See 505.03.12 for additional details. 2 per 5 Placement Day  
2 per 1000 Ton

1 Sample = 1-50 LB Box (2-50 LB for 25.0mm Mix, 2-50 LB for 37.5mm Mix)

### Asphalt Mix Density Pay Factor Analysis Sample Analysis

Density QA and QC results are to be processed by the Asphalt Technology Division to develop a recommended "Density Pay Factor". 1 per 1 Sample Set

### Asphalt Mix Pay Factor Analysis Sample Analysis

Mixture QA and QC results are to be processed by the Asphalt Technology Division to develop a recommended "Mixture Pay Factor". 1 per 1 Project Completion  
1 per 6000 Ton

### Evaluation of Pavement Surface Profile Project Wide Testing

Surface profiling will be completed as indicated in Section 535 of the Special Provisions. 1 per 1 Item Completion

## Cement Materials and Bagged Mixtures, Group 1

### Project Construction

### CTD Material Verification Material Verification

Project Engineer to collect certifications (TC 1.03 w/o test data) and submit to OMT for clearance. 1 per 1 Delivery to Project

# Material Quality Assurance Processes

## Cement Materials and Bagged Mixtures, Group 2

### Material Production

CTD Material Review and Acceptance	Material Certification for Project Usage			
Submit sample of material accompanied by a Form 88 and Material certification (1.03 w/o test data) to OMT for job specific approval. 1 Factory Sealed Container in a Factory Sealed Container	1	per	1	Prior to Usage on Project

### Project Construction

CTD Material Verification	Material Verification			
Project Engineer to collect certifications (TC 1.03 w/o test data) and a material sample. Submit to OMT for verification and clearance	1	per	1	Delivery to Project

## Cement Materials and Bagged Mixtures, Group 3

### Material Production

CTD Material Review and Acceptance	Material Certification for Project Usage			
Submit Form 88 and Material Certification (1.03 w/o test data) to OMT for job specific approval.	1	per	1	Prior to Usage on Project

### Project Construction

CTD Material Verification	Material Verification			
Project Engineer to verify approval stamp.	1	per	1	Delivery to Project

## Cement Treated Base/Cement Treated Subgrade

### Material Production

SATD Material Review	Material Certification for Project Usage			
Materials to be sampled at its place of origin. Project Engineer to contact SATD to schedule sampling.	1	per	1	Prior to Usage on Project
	1	per	1	Prior to Usage on Project

### Project Construction

Project Site Testing	Material Sampling and Testing			
Construct a 500 foot long control strip onsite according to section 502.03.05	1	per	1	Project
Acceptance of the control strip will be based on performing Falling Weight Deflectometer (FWD) testing and analysis per Section 3.10 of the Pavement Performance Specifications and the Pavement and Geotechnical Design Guide	1	per	1	Cement Modified Subgrade
	1	per	1	Cement Treated Base
Application Rate Verification by weight of cement	1	per	1	Truck Load
Project Engineer to submit FM 14 for Depth and Pulverization check	3	per	1	Placement Day

# Material Quality Assurance Processes

Compaction and Moisture analysis performed by Project Engineer. Submit compaction report to MMD for clearance.

1 per 1  
2 per 2

Placement Day  
Lane Mile per Lift

## Compost Materials

### Project Construction

LPD Material Verification			Material Verification
Project Engineer to verify LPD or MDE approval stamp.	1 per	1	Delivery to Project

## Concrete Deck Protection

### Project Construction

CTD Material Verification			Material Verification
Project Engineer to collect certifications (TC 1.03 w/o test data) and submit to OMT for clearance.	1 per	1	Delivery to Project

## Contract Specified Material Systems

### Project Construction

LPD Material/Product verification			Material Verification
Project Engineer to collect manufacturers certification (TC 1.03 w/o test results) and fill out Form 14 indicating material was placed in accordance with documents. Submit certification and Form 14 to OMT for clearance.	1 per	1	Item Completion

## Curing Compounds (Liquid Membrane)

### Project Construction

CTD Material Verification			Material Verification
Project Engineer to collect certifications (TC 1.03 w/ test data) and submit to OMT for clearance.	1 per	1	Delivery to Project

## Decorative Concrete Finish, Horizontal Surface

### Project Construction

CTD Material Verification			Material Verification
Project Engineer to inspect placed materials and submit Form 14 to MMD for clearance.	1 per	1	Item Completion

## Decorative Concrete Stains, Vertical Surface

### Project Construction

CTD Material Verification			Material Verification
Project Engineer to collect manufacturer's material certifications (TC 1.03 w/ test data) and submit to MMD for clearance.	1 per	1	Delivery to Project

## Decorative Reinforced Thermoplastic

### Project Construction

# Material Quality Assurance Processes

## LPD Material/Product verification

Material Verification

Material/Product Verification at Project Site

1 per 1  
1 per 1

Item Completion  
Prior to Usage on Project

## Electrical Accessories

### Material Production

#### Approval of Material Prior to Shipment

Material Certification for Project Usage

Producer to submit Catalog Cuts to the Office of Traffic and Safety.

1 per 1

Prior to Usage on Project

### Project Construction

#### OOTS Material Verification

Material Verification

Project Engineer to verify material product, submit Form 14.

1 per 1

Delivery to Project

## Emulsified Asphalts, Other

### Project Construction

#### ATD Material Verification

Material Verification

Project Engineer to collect certifications (TC 1.03 w/ test data), FORM 88, and material samples. Submit items to OMT for testing and clearance.

1 per 1

Item Completion

1 Gallon in a Widemouth Plastic Jar

## Emulsified Asphalts, Tack Coat

### Project Construction

#### ATD Material Verification

Material Verification

Project Engineer to collect certifications (TC 1.03 w/ test data), FORM 88, and material samples. Submit items to OMT for testing and clearance.

1 per 1

Item Completion

1 Gallon in a Widemouth Plastic Jar

## Fertilizers

### Project Construction

#### LPD Material Verification

Material Verification

Project Engineer to collect certifications (TC 1.03 w/o test data) and submit to OMT for clearance.

1 per 1

Delivery to Project

## Form Release

### Project Construction

#### CTD Material Verification

Material Verification

Project Engineer to inspect placed material and submit Form 14.

1 per 1

Delivery to Project

## Geosynthetic Materials, Geotextiles

### Project Construction



# Material Quality Assurance Processes

## Material Verification for SATD Materials

Material Verification

Project Engineer to receive certified roll data (TC1.03 w/ test data) and submit to MMD for clearance.

1 per 1

Delivery to Project

## Geosynthetic Materials, Other

### Project Construction

## Material Verification for SATD Materials

Material Verification

Project Engineer to verify material.

1 per 1

Delivery to Project

## Liquid Pavement Marking

### Project Construction

## Pavement Marking Material Verification at Project Site

Material Verification

Project Engineer to collect manufacture's certifications (TC 1.03 w/ test data) and OMT stamped documentation approving the material batch, submit to MMD for clearance.

1 per 1

Delivery to Project

## Post Placement Project Wide Testing

Project Wide Testing

Field Testing at Project Site by the Pavement Marking Team as per MSMT 729.

1 per 1

Item Completion

## Miscellaneous Chemical Materials

### Project Construction

## CTD Material Verification

Material Verification

Project Engineer to collect certifications (TC 1.03 w/ test data) and submit certs and Form 14 to OMT for clearance.

1 per 1

Delivery to Project

## Miscellaneous Landscape Materials

### Project Construction

## Visual Inspection of Placed Material

Material Sampling and Testing

Project Engineer to inspect placed material and submit Form 14.

1 per 1

Delivery to Project

## Miscellaneous Materials

### Project Construction

## LPD Material/Product verification

Material Verification

Project Engineer to inspect placed material and submit Form 14.

1 per 1

Delivery to Project

Project Engineer to collect certifications (TC 1.03 w/ test data) and submit certs to OMT for clearance.

1 per 1

Delivery to Project

## Miscellaneous Materials with Certifications

### Project Construction

## LPD Material/Product verification

Material Verification

# Material Quality Assurance Processes

Project Engineer to collect material certifications (TC 1.03 w/o test data) and submit to OMT for clearance. 1 per 1 Delivery to Project

## Mulch

### Project Construction

Visual Inspection of Placed Material	Material Sampling and Testing			
Project Engineer to inspect placed material and submit Form 14.	1	per	1	Delivery to Project

## Pavement Markers

### Project Construction

Pavement Marking Material Verification at Project Site	Material Verification			
Project Engineer to collect manufacturer's Certification (TC 1.03 w/o test data), and submit certifications to MMD for clearance.	1	per	1	Delivery to Project
Post Placement Project Wide Testing	Project Wide Testing			
Field Testing at Project Site by the Pavement Marking Team as per MSMT 729.	1	per	1	Item Completion

## Pavement Marking Mat'l: Other

### Project Construction

Pavement Marking Material Verification at Project Site	Material Verification			
Project Engineer to collect OMT stamped manufacturer's certification (TC 1.03 w/ test data) and submit them to MMD for clearance.	1	per	1	Delivery to Project

## Pavement Marking Preformed Thermoplastic

### Project Construction

Pavement Marking Material Verification at Project Site	Material Verification			
Project Engineer to collect manufacturer's Certification (TC 1.03 w/o test data), and submit certifications to MMD for clearance.	1	per	1	Delivery to Project
Post Placement Project Wide Testing	Project Wide Testing			
Field Testing at Project Site by the Pavement Marking Team as per MSMT 729.	1	per	1	Item Completion

## Pavement Marking Tape

### Project Construction

Pavement Marking Material Verification at Project Site	Material Verification			
Project Engineer to collect manufacturer's Certification (TC 1.03 w/o test data), and submit certifications to MMD for clearance.	1	per	1	Delivery to Project
Post Placement Project Wide Testing	Project Wide Testing			
Field Testing at Project Site by the Pavement Marking Team as per MSMT 729.	1	per	1	Item Completion

# Material Quality Assurance Processes

## Pavement Repair Materials

### Project Construction

ATD Material Verification		Material Verification		
Project Engineer to collect certifications (TC 1.03 w/o test data) and submit certs to OMT for clearance.	1	per	1	Delivery to Project

## Pesticides

### Material Production

LPD Material Review		Material Certification for Project Usage		
Project Engineer to contact LPD to schedule site visit and develop pesticide placement plan.	1	per	1	Prior to Usage on Project

### Project Construction

Visual Inspection of Placed Material		Material Sampling and Testing		
Project Engineer to inspect material placement and submit Form 14 to OMT for clearance.	1	per	1	Item Completion

## Plant Materials

### Material Production

LPD Material Review		Material Certification for Project Usage		
Approval of Material for Project Use, Facility Visit.	1	per	1	Prior to Usage on Project

## Portland Cement Concrete Mixtures

### Material Production

Notification of Production for CTD materials		Production Notification		
Producer to notify OMT one working day prior to production at concrete@sha.state.md.us	1	per	1	Production Day

### Project Construction

CTD Material Verification		Material Verification		
Project Engineer to conduct field tests. (Air Entrainment, Slump, etc.).	1	per	1	Delivery to Project
Project Engineer to collect certifications (TC 1.03 w/ test data) and submit to OMT for clearance.	1	per	1	Delivery to Project

Concrete Sampling and Testing		Material Sampling and Testing		
Project Engineer to mold acceptance cylinders, Prime Contractor to cure and transport cylinders to OMT for testing.	1	per	50	Cubic Yard
2 Cylinders = 1 Sample	1	per	1	Production Day
Mix 7 -Project Engineer to mold acceptance cylinders, Prime Contractor to cure and transport cylinders to OMT for testing.	3	per	1	Placement Day
2 Cylinders = 1 Sample				

Pay Factor Calculation		Sample Analysis	
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# Material Quality Assurance Processes

OMT to perform statistical analysis on all acceptance concrete cylinder tests for project. 1 per 1 Item Completion

## Portland Cement Concrete Mixtures, Latex Modified

### Project Construction

<b>CTD Material Verification</b>				<i>Material Verification</i>
Project Engineer to perform concrete plastic tests. Typically one slump and one air entrainment.	1	per	1	Delivery to Project
<b>Chemical Tests</b>				<i>Material Sampling and Testing</i>
Submit a sample or certification (TC 1.03 w/ test data) of each component to OMT for verification. 2 Quarts - Latex, 1 Quart Each Admixture in a Plastic Jug	1	per	1	Lot / Production Day
<b>Concrete Sampling and Testing</b>				<i>Material Sampling and Testing</i>
Submit sample to OMT for testing.	2	per	1	Truck
<b>Pay Factor Calculation</b>				<i>Sample Analysis</i>
OMT to perform statistical analysis on all acceptance concrete cylinder tests for project.	1	per	1	Item Completion

## Precast Concrete, Drainage Structures

### Material Production

<b>Notification of Production for CTD materials</b>				<i>Production Notification</i>
Producer to notify the Concrete Technology Division prior to production at concrete@sha.state.md.us. Please provide the design standard with the notification.	1	per	1	Prior to Usage on Project
<b>CTD Material Review and Acceptance</b>				<i>Material Certification for Project Usage</i>
Submit copies of any shop drawings, specifications, or plan sheets to the designer as per the Invitation for Bids document.	1	per	1	Prior to Usage on Project

### Project Construction

<b>CTD Material Verification</b>				<i>Material Verification</i>
Project Engineer to visually inspect precast elements, record all QC stamps on a Form 14, and verify stamp matches the certification. Collect manufacture's certification and submit it along with the Form 14 to MMD for clearance.	1	per	1	Delivery to Project

## Precast Concrete, Miscellaneous

### Material Production

<b>Notification of Production for CTD materials</b>				<i>Production Notification</i>
Producer to notify the Concrete Technology Division between 48 hours prior to shipment and end of shipping day at concrete@sha.state.md.us.	1	per	1	Prior to Usage on Project

### Project Construction

<b>CTD Material Verification</b>				<i>Material Verification</i>
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# Material Quality Assurance Processes

Project Engineer to visually inspect precast elements, record all QC stamps on a Form 14, and verify stamp matches the certification. Collect manufacture's Certification and submit it along with the Form 14 to MMD for clearance. 1 per 1 Delivery to Project

## Precast Concrete, Pipe

### Material Production

#### Notification of Production for CTD materials *Production Notification*

Producer to notify the Concrete Technology Division between 48 hours prior to shipment and end of shipping day at concrete@sha.state.md.us. 1 per 1 Prior to Usage on Project

#### CTD Material Review and Acceptance *Material Certification for Project Usage*

Plant QC Personnel to perform lot inspection 1 per 1 Prior to Usage on Project

### Project Construction

#### CTD Material Verification *Material Verification*

Project Engineer to visually inspect pipe, record all QC Stamps from pipe on a Form 14, and verify a pipe stamp matches the certification. Collect manufacture's Certification and submit it along with the Form 14 to MMD for Clearance. 1 per 1 Delivery to Project

## Precast Concrete, Prestressed and Structural

### Material Production

#### Notification of Production for CTD materials *Production Notification*

Producer to submit Shop Drawings and provide Production Notice to the Concrete Technology Division (concrete@sha.state.md.us) 30 business days before commencing production of any prestressed or other structural concrete items. 1 per 1 Prior to Usage on Project

#### CTD Material Review and Acceptance *Material Certification for Project Usage*

Direct Inspection at Facility during Casting, Approval of Material for Project Use. 1 per 1 Prior to Usage on Project

### Project Construction

#### CTD Material Verification *Material Verification*

Project Engineer to visually inspect precast elements, record all stamps on a Form 14, and verify stamps match the certification. Collect manufacture's certification and submit it along with the Form 14 to MMD for clearance. 1 per 1 Delivery to Project

## Precast Concrete, Walls

### Material Production

#### Notification of Production for CTD materials *Production Notification*

# Material Quality Assurance Processes

Producer to submit Shop Drawings and provide Production Notice to the Concrete Technology Division (concrete@sha.state.md.us) 30 business days before commencing production of any precast MSE or Noise Barrier components. 1 per 1 Prior to Usage on Project

## CTD Material Review and Acceptance Material Certification for Project Usage

Direct Inspection at Facility during Casting, Approval of Material for Project Use. 1 per 1 Prior to Usage on Project

## Test Panel Verification Material Certification for Project Usage

Test panel to be evaluated by OMT, LOD and OOS. 1 per 1 Prior to Usage on Project

### Project Construction

## CTD Material Verification Material Verification

Project Engineer to visually inspect precast elements, record all stamps on a Form 14, and verify stamps match the certification. Collect manufacture's certification and submit it along with the Form 14 to MMD for clearance. 1 per 1 Delivery to Project

## Recycled Materials for HMA Mixtures

### Project Construction

## ATD Material Verification Material Verification

Project Engineer to visually inspect placed material and submit Form 14 to OMT for clearance. 1 per 1 Item Completion

## Reflective Sheeting

### Project Construction

## OOTS Material Verification Material Verification

See source response for "Aluminum Signs" for this item for acceptance 1 per 1 Delivery to Project

## Sealers: Qualified Liquid Materials

### Project Construction

## LPD Material/Product verification Material Verification

Project Engineer to collect certifications (TC1.03 w/ test data) and submit certifications to OMT for clearance. 1 per 1 Delivery to Project

## Seed and Sod, Specialty Mixtures

### Project Construction

## LPD Material Verification Material Verification

Project Engineer to verify seed or sod mixture. Submit Form 14 to OMT for clearance. 1 per 1 Item Completion

## Seed and Sod, Standard Mixtures

### Project Construction

## LPD Material Verification Material Verification

# Material Quality Assurance Processes

Project Engineer to verify state approved seed mix/sod tickets (LPD or MDE). Copies shall be submitted to OMT for material clearance. 1 per 1 Delivery to Project

## SM Group 1 - General Approval

### Project Construction

Material Verification at Project Site, Structural Materials			Material Verification
Project Engineer to submit Form 14 to the Materials Management Division confirming the material and its placement are acceptable and conform to specifications.	1 per	1	Delivery to Project

## SM Group 2 - General Approval with Certification

### Project Construction

Material Verification at Project Site, Structural Materials			Material Verification
Project Engineer to collect manufacturer's certification (TC 1.03 w/o test data) indicating the specification to which the material conforms. Submit certification with Form 14 Stamp to the Materials Management Division for clearance.	1 per	1	Delivery to Project
Project Engineer to collect manufacturer's certification (TC 1.03 with test data) indicating the specification to which the material conforms. Submit certification with Form 14 Stamp to the Materials Management Division for clearance.	1 per	1	Delivery to Project

## SM Group 3 - Evaluation Before Shipment

### Material Production

OMT approval of material for shipment, Structural Materials			Material Certification for Project Usage
Submit Material Certification (TC 1.03 w/ Batch Specific Test Data) to metals@mdot.maryland.gov for review prior to delivery. If acceptable the document will be stamped by OMT and returned to the supplier to accompany the material to the project site.	1 per	1	Prior to Usage on Project
The Structural Materials team or an Authorized Representative will inspect the material, all relevant certifications, and may take material samples at the production facility. Please contact metals@mdot.maryland.gov to schedule an inspection.	1 per	1	Prior to Usage on Project
Submit Material Certification (TC 1.03 w/o test data) for timber preservatives to metals@mdot.maryland.gov. If acceptable the document will be stamped by OMT and returned to the source of supply to accompany the material to the project site.	1 per	1	Prior to Usage on Project
Submit Sample, Form 88 and Material Certification (TC 1.03 w/o test data) for clay brick materials to OMT for evaluation. Form 88 will be returned to PE. Alternate sampling may be requested by contacting metals@mdot.maryland.gov 3 weeks prior to delivery.	1 per	50000	Each
10 Bricks			

# Material Quality Assurance Processes

Submit Sample, Form 88 and Material Certification (TC 1.03 w/o test data) for concrete block to OMT for evaluation. Form 88 will be returned to PE. Alternate sampling may be requested by contacting [metals@mdot.maryland.gov](mailto:metals@mdot.maryland.gov) 3 weeks prior to delivery.

6 Blocks

## Project Construction

Material Verification at Project Site, Structural Materials			Material Verification
Project Engineer to collect OMT stamped documentation indicating review and approval of material. Submit document to the Materials Management Division for materials clearance.	1	per 1	Delivery to Project

## SM Group 4 - Detectable Warning Surfaces

### Project Construction

Material Verification at Project Site, Structural Materials			Material Verification
Project Engineer to collect certifications (TC 1.03 w/o test data) and submit certs to OMT for clearance.	1	per 1	Delivery to Project

## SM Group 5 - Producer and Batch Data Tracked

### Material Production

OMT approval of material for shipment, Structural Materials			Material Certification for Project Usage
Batch/Heat of Material must be approved by OMT. The producer to submit Material Certification (TC 1.03 w/ test data) and Sample to Structural Materials for evaluation. Contact <a href="mailto:metals@mdot.maryland.gov">metals@mdot.maryland.gov</a> for further information.	1	per 1	Batch, Lot or Heat

### Project Construction

Material Verification at Project Site, Structural Materials			Material Verification
Project Engineer to collect OMT stamped Material Certification (TC 1.03 w/ test data) and submit to the Materials Management Division for materials clearance.	1	per 1	Delivery to Project

## SM Group 6 - Qualified Facilities, Limited Review

### Material Production

Quality Assurance of Structural Material production facilities.			Material Certification for Project Usage
Facility re-qualification required, Structural Materials or an Authorized Representative to conduct facility evaluation and reissue facility certification. Please contact <a href="mailto:metals@mdot.maryland.gov">metals@mdot.maryland.gov</a> to schedule an evaluation.	1	per 12	Months

### Project Construction

Material Verification at Project Site, Structural Materials			Material Verification
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# Material Quality Assurance Processes

Project Engineer to collect the stamped supplier's Certification of Compliance listing the materials shipped and submit to the Materials Management Division for materials clearance. 1 per 1 Delivery to Project

## SM Group 7 - Qualified Facilities, Cert Review

### Material Production

#### Quality Assurance of Structural Material production facilities. *Material Certification for Project Usage*

Facility re-qualification required. Structural Materials or an Authorized Representative to conduct facility evaluation prior to material approval. Contact metals@mdot.maryland.gov to determine inspection schedule. 1 per 12 Months

#### OMT approval of material for shipment, Structural Materials *Material Certification for Project Usage*

for review and approval. If acceptable, the documents will be stamped and returned to the vendor to accompany the delivery. 1 per 1 Prior to Usage on Project

Submit Material Certification (TC 1.03 w/ test data) and a sample to Structural Materials, contact metals@mdot.maryland.gov. If acceptable the document will be stamped by OMT and returned to the source of supply to accompany the delivery. 1 per 1 Prior to Usage on Project

### Project Construction

#### Material Verification at Project Site, Structural Materials *Material Verification*

Project Engineer to collect OMT stamped documentation indicating review and approval of material. Submit document to the Materials Management Division for materials clearance. 1 per 1 Delivery to Project

## SM Group 8 - Qualified Facilities, Production Insp

### Material Production

#### Quality Assurance of Structural Material production facilities. *Material Certification for Project Usage*

Facility re-qualification required. Structural Materials to conduct facility evaluation and reissue facility certification. 1 per 12 Months

#### OMT approval of material for shipment, Structural Materials *Material Certification for Project Usage*

The Metals team or an Authorized Representative will inspect the fabrication, all relevant certifications, and may take material samples at the production facility. Please contact metals@mdot.maryland.gov to determine inspection schedule. 1 per 1 Prior to Usage on Project

### Project Construction

#### Material Verification at Project Site, Structural Materials *Material Verification*

Project Engineer to collect OMT stamped documentation indicating review and approval of material. Submit document to the Materials Management Division for materials clearance. 1 per 1 Delivery to Project

# Material Quality Assurance Processes

## Soil Amendments

### Project Construction

LPD Material Verification			Material Verification
Project Engineer to verify material product, submit Form 14 for clearance.	1	per 1	Item Completion

## Soil Materials, Fill Soil

### Material Production

SATD Material Review			Material Certification for Project Usage
Material to be sampled as Common Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	2	per 1	Prior to Usage on Project
Material to be sampled as Capping Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	2	per 1	Prior to Usage on Project
Material to be sampled as Modified Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	2	per 1	Prior to Usage on Project
Material to be sampled as Select Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling. 35 LBS in a Soils Bag	2	per 1	Prior to Usage on Project
Material to be sampled as Clay Core material at its place of origin. Project Engineer to contact SATD to schedule a sampling 35 LBS in a Soils Bag	2	per 1	Prior to Usage on Project

### Project Construction

Project Sampling and Lab Testing of SATD Material			Material Verification
Project Engineer to submit verification samples of Common Borrow. 35 LBS in a Soils Bag	1	per 15000	Cubic Yard
Project Engineer to submit verification samples of material of Capping Borrow. 35 LBS in a Soils Bag	1	per 15000	Cubic Yard
Project Engineer to submit verification samples of material of Modified Borrow. 35 LBS in a Soils Bag	1	per 15000	Cubic Yard
Project Engineer to submit verification samples of material of Select Borrow. 35 LBS in a Soils Bag	1	per 15000	Cubic Yard
Project Engineer to submit verification samples of Clay Core material. 35 LBS in a Soils Bag	1	per 15000	Cubic Yard

Project Site Testing	Material Sampling and Testing
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# Material Quality Assurance Processes

Compaction and Moisture analysis of Common Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.	4 per 1 per	1 2000	Lane Mile per Lift Cubic Yard
Compaction and Moisture analysis of Capping Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.	4 per 1 per	1 2000	Lane Mile per Lift Cubic Yard
Compaction and Moisture analysis of Modified Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.	4 per 1 per	1 2000	Lane Mile per Lift Cubic Yard
Compaction and Moisture analysis of Select Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.	4 per 1 per	1 2000	Lane Mile per Lift Cubic Yard
Compaction and Moisture analysis of Select Borrow for Trench Backfill to be performed by Project Engineer. Submit Compaction report to MMD for clearance.	1 per	150	Linear Feet per 3 Foot Lift
Compaction and Moisture analysis of Clay Core material to be performed by Project Engineer. Submit Compaction report to MMD for clearance.	1 per	2000	Cubic Yard

## Soil Materials, Furnished Landscaping Soils

### Project Construction

Material Verification for SATD Materials	Material Verification		
Project Engineer to verify material and submit the approved Form 27B to the Materials Management Division for clearance. Form 27B may be found on the Documents Tab on the material source submission.	1 per	1	Delivery to Project

## Soil Materials, Salvaged & Other Landscaping Soils

### Material Production

SATD Material Review	Material Certification for Project Usage		
Project Engineer to contact SATD at least 30 days prior to material usage or placement. SATD will sample material at source, ensure material testing, and provide a Soil Test Report (Form 27B) and the Nutrient Management Plan. 20 LB in a Soils Bag	1 per	1	Prior to Usage on Project
Project Engineer to contact SATD at least 30 days prior to material usage or placement. SATD will sample material at source, ensure material testing, and provide a Soil Test Report (Form 27B). 20 LB in a Soils Bag	1 per	1	Prior to Usage on Project

### Project Construction

Material Verification for SATD Materials	Material Verification		
Project Engineer to verify material and submit the approved Form 27B to the Materials Management Division for clearance.	1 per	1	Item Completion

# Material Quality Assurance Processes

## Soil Stabilization Matting

### Project Construction

LPD Material Verification				Material Verification
Project Engineer to inspect placed material and submit Form 14.	1	per	1	Delivery to Project

## Surface Treatments

### Material Production

Notification of Production for ATD materials				Production Notification
Producer to notify the Asphalt Technology Division one week prior to material placement.	1	per	1	Placement Day

### Project Construction

ATD Material Verification				Material Verification
Project Engineer to collect material certifications (TC 1.03 w/o test results) and submit to materials management for clearance.	1	per	1	Delivery to Project

Sampling and Testing of ATD materials				Material Sampling and Testing
Project Engineer to sample emulsion and mixture. Sample to be delivered to OMT for verification. 1 Gallon of Mixture and 1 Gallon of Emulsion in a Widemouth Plastic Jar	1	per	1	Production Day

## Traffic and Related Materials, Miscellaneous

### Project Construction

OOTS Material Verification				Material Verification
Project Engineer to submit Form 14 to the Materials Management Division confirming the product is undamaged, acceptably placed, and conforms to specification.	1	per	1	Delivery to Project

## Traffic Barrier End Treatments

### Material Production

Approval of Material Prior to Shipment				Material Certification for Project Usage
Contractor to submit "Request to use NCHRP-350 Product" to the Engineer of Record. The Engineer of Record refers to a Project's design Engineer or plan sheet approver who is a Licensed Engineer in the field of design and MASH implementation.	1	per	1	Prior to Usage on Project

### Project Construction

OOTS Material Verification				Material Verification
See source response for "Metal Traffic Barrier, Certified Installer" for this item for acceptance procedures.	1	per	1	Delivery to Project

# Material Quality Assurance Processes

Project Engineer to collect manufacturer's certification (TC 1.03 w/o test data) and submit certifications to the Materials Management Division for clearance. 1 per 1 Delivery to Project

## Traffic Control Materials, Qualified

### Project Construction

#### OOTS Material Verification *Material Verification*

Project Engineer to collect certifications (TC 1.03 w/o test data) and submit certs to the Materials Management Division for clearance. 1 per 1 Delivery to Project

## Traffic Control Materials, Qualified & Temporary

### Project Construction

#### OOTS Material Verification *Material Verification*

Project Engineer to submit Form 14 to the Materials Management Division confirming the product is undamaged, acceptably placed, and conforms to specification. Indicate the product manufacturer and model number (when available). 1 per 1 Delivery to Project

## Traffic Control Materials, Specialty Items

### Material Production

#### Approval of Material Prior to Shipment *Material Certification for Project Usage*

Producer to submit Shop Drawings or Catalog Cuts to the Office of Traffic and Safety for evaluation. 1 per 1 Prior to Usage on Project

### Project Construction

#### OOTS Material Verification *Material Verification*

Project Engineer to submit Form 14 to the Materials Management Division confirming receipt of approved documentation from OOTS and conformance to specifications. 1 per 1 Delivery to Project

## Traffic, Misc. Services and Products

### Project Construction

#### OOTS Material Verification *Material Verification*

Project Engineer to submit Form 14 to the Materials Management Division confirming the product is undamaged, acceptably placed, and conforms to specification. Indicate the product manufacturer and model number (when available). 1 per 1 Delivery to Project