

WSDOT

SAM User Manual for Contractors

2010

State Materials Lab
11/30/2010

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New Specifications

In 2010, the Washington State DOT Standard Specifications were changed. The change deleted the time requirements for the DOT to give the contractor test results and the Composite Pay Factor, CPF. The Contractors can now go the WSDOT website to view the test data and CPF.

Another change that was made is the size of the lot has been redefined to be 15-sublots except for the last lot may be up to 25-sublots. With changes to the SAM program used by WSDOT to calculate CPF's it is no longer necessary to start a new lot when a JMF has been changed so the requirement that a new JMF will trigger a new lot has been deleted.

SAM 2010 application now has the ability for a Contractor to view the test data and the CPF reports.

Getting Started

If you need an account to access the testing data and CPF reports for your WSDOT contracts in SAM, the following steps will guide you through the process:

Go to the WSDOT website home page, and open the Business page. Then open the Materials Laboratory home page. On this page you will find links to all of the Materials Laboratory programs.

Go to the SAM Home Page <https://business.wsdot.wa.gov/Materials/Analysis/SAMui/samlogin.aspx>

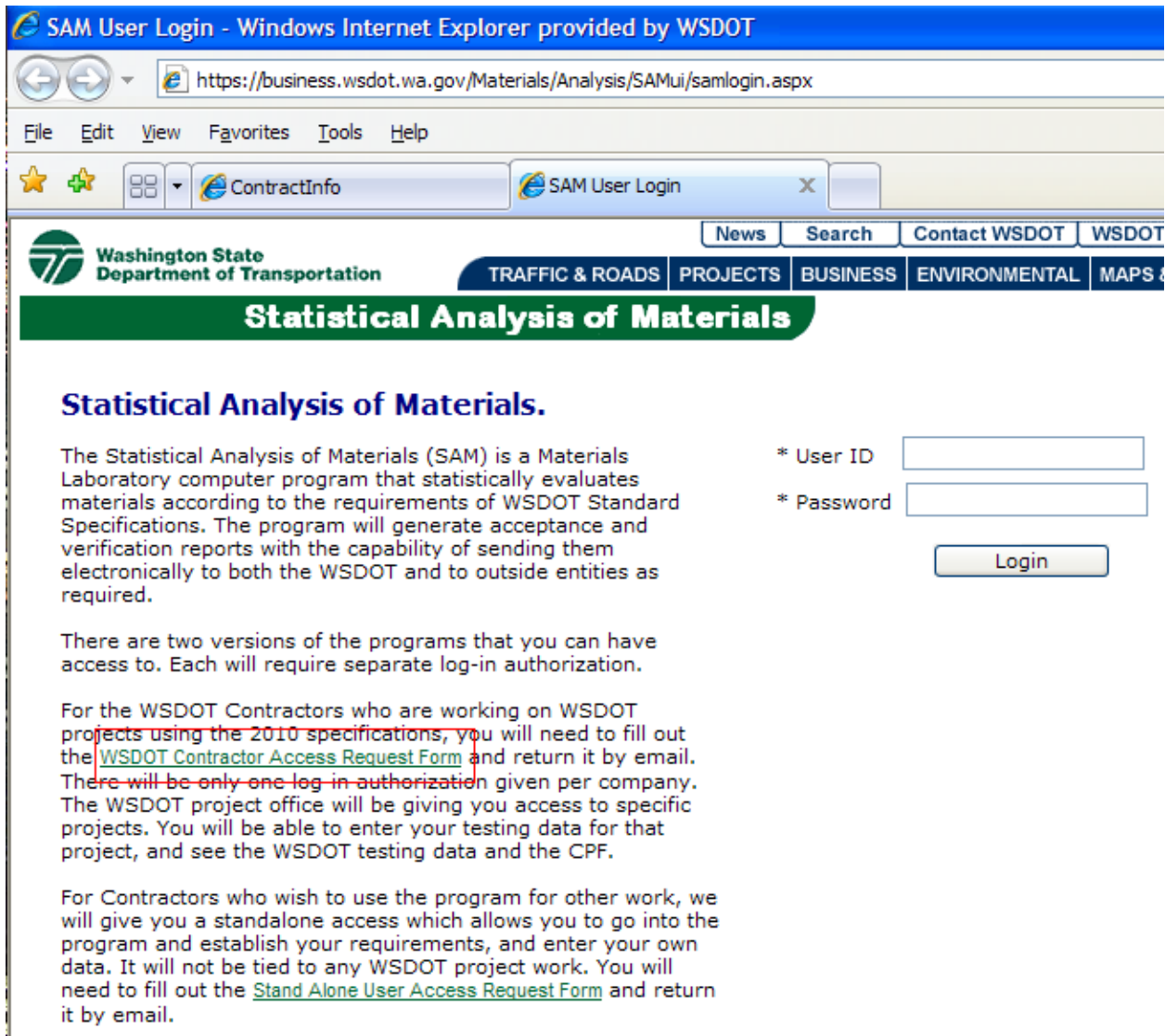
There are two different types of access:

The "Standalone Access" is the permission level where you can use the program for other work. This will allow you to establish your own requirements and enter your own testing data into the SAM program. SAM will perform calculations and retrieve reports. Your data will not be connected to WSDOT projects and associated with any WSDOT data.

The "WSDOT Contractor Access" is the permission level where a WSDOT Contractor doing WSDOT work will be able to view the testing data and the CPF for a project that you are working on. You can also enter your quality control testing data if you wish, however it will not be used for acceptance.

Note, if you previously had permissions to SAM, it is possible that you had access to the standalone application and do not have the correct permissions to view the WSDOT project data. Contact the Materials Laboratory Help Desk if you are not sure what type of permissions you have. There will only be one account given per company. So, it is not necessary to have individual accounts within the company. The Materials Laboratory will let you know if your company already has an account.

The first step is to click on “WSDOT Contractor Access Request Form”



Contractor Request Form

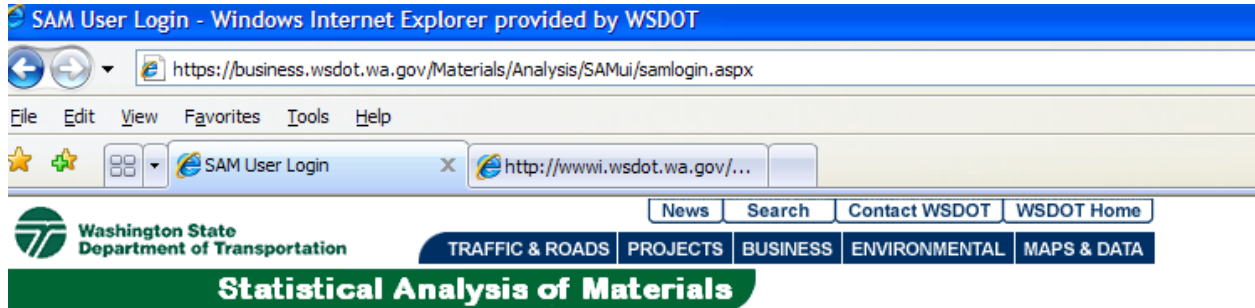
This link opens an email message to be sent to the Materials Laboratory Help Desk. Fill out the information in the body of the email and send the message. The Materials Laboratory will process this request and send you a confirmation email with a userid and password. Share these logon credentials with others in your company who will be using SAM. We will usually have your request processed within one business day or less.

Once you have received your logon information, contact the Project Office that is administrating your project for permissions to the contract or contracts that you will be working on.

Important: The Materials Laboratory Help Desk will give you permissions to the system, but the Project Engineers office will give you permissions to the contracts.

Login to SAM

To login to SAM, type in your userid and password you were given from the Materials Laboratory.



Statistical Analysis of Materials.

The Statistical Analysis of Materials (SAM) is a Materials Laboratory computer program that statistically evaluates materials according to the requirements of WSDOT Standard Specifications. The program will generate acceptance and verification reports with the capability of sending them electronically to both the WSDOT and to outside entities as required.

There are two versions of the programs that you can have access to. Each will require separate log-in authorization.

For the WSDOT Contractors who are working on WSDOT projects using the 2010 specifications, you will need to fill out the [WSDOT Contractor Access Request Form](#) and return it by email. There will be only one log-in authorization given per company. The WSDOT project office will be giving you access to specific projects. You will be able to enter your testing data for that project, and see the WSDOT testing data and the CPF.

For Contractors who wish to use the program for other work, we will give you a standalone access which allows you to go into the program and establish your requirements, and enter your own data. It will not be tied to any WSDOT project work. You will need to fill out the [Stand Alone User Access Request Form](#) and return it by email.

* User ID

* Password

For problems or questions please call the
Mats Lab Help Desk : 360-709-5454
Email : MLOHelp@WSDOT.WA.GOV

Forgot Password?
Please type in your email
Email

Click on SAM 2010, you will not have access to old SAM.



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Statistical Analysis of Materials

Statistical Analysis of Materials.

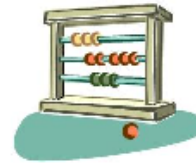
The Statistical Analysis of Materials system (SAM) is a Materials Laboratory project that will redevelop the current Quality Assurance Specification system capabilities plus add analysis enhancements and statistical tools to support contractor design build projects. The system will generate reports and graphs with the capability of sending them electronically both to WSDOT and to outside entities as required. The results of the system will be kept electronically for quality and compliance audits and for historical references.



Click on SAM to start

New Statistical Analysis of Materials.

Contracts awarded after August 2009 should use the SAM 2010. The New SAM 2010 program uses the 2010 specifications. The Old SAM uses the 2008 Specifications.



[Old SAM](#)


For questions & help please contact:

Mats Lab Help Desk : 360-709-5454 Email : MLOHelp@WSDOT.WA.GOV

Contract Information Page

The Contract Info tab displays what work orders are available to you. You will also see the materials that have been setup. You cannot access and view any data from this page.

If there are no contracts in the drop down list box, you haven't been granted access to any contracts yet. Please contact the appropriate Project Office to get access. If the contract or contracts are there, select from the drop down. You will see all the material that has been associated with that contract. The material criteria have been entered by the Project office. If there are no materials listed, then there is no data in SAM yet.



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Statistical Analysis of Materials

Contract Info

CONTRACT INFO |
 MATERIAL ACCEPTANCE CRITERIA |
 TEST DATA |
 ANALYSIS |
 ACCEPTANCE |
 Search |
 HELP

***Work Order Number**

007885
-select work order-
 007885
 454306

***Measurement System**

ENGLISH

Award Date

3/1/2010

***Section**

I-85 GRANGER TO GRANDVIEW CONCRETE REHAB

Project Engineer

Davari, Moe

***Contractor Name**

test

SR Number

520

Test Labs [Assign Lab](#) [Warm Mix Type](#)

Field Lab -- Acceptance
HQ Lab -- Acceptance
Region Lab -- Acceptance
Contractor QC Lab -- Quality Control

Material ID	Original Material	Material Type	Material
MD100009		5-04 Hot Mix Asphalt	HMA Class 1/2" - 9-03.8 - 2010
MD100009-TS1	MD100009	5-04 Hot Mix Asphalt	HMA Class 1/2" - 9-03.8 - 2010
MD100009-1	MD100009	5-04 Hot Mix Asphalt	HMA Class 1/2" - 9-03.8 - 2010

Save

Cancel

Add New Contract

Add New Material

View Deleted Lots

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Report and Worksheets

There are two ways to view the reports, one from the test data page, and the other from the acceptance page. To access just the reports from the test data page, go to the test data tab.

You will have to select the material that you are looking for by selecting the material Original Material ID (Mix ID). The table will list all of the lots for the material, including compaction for HMA. You will see the date tested for the lot that you selected. In the parentheses, it shows the number of sublots that are included in the lot.

The composite pay factor, CPF column on the table will display the current CPF for the lot.

The report will display all of the information relating to the Material including the bonus and Composite Pay Factor. The worksheet will displays the calculations involved in arriving at the pay factors for each test property. The reports and worksheets are in Adobe PDF.



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Statistical Analysis of Materials

Test Results List

Work Order Number

Section

▶ CONTRACT INFO
▶ MATERIAL ACCEPTANCE CRITERIA
▶ TEST DATA
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*Material

* Original Material ID (Mix ID)

Lots


	Lab Category	Lot #	Date Tested	CPF		
Edit	QA	1	10/06/2010 - 10/06/2010 (15)	0.83	Report	Worksheet

Compaction Lots

	Lab Category	Lot #	Date Tested	CPF	
Edit	QA	1	10/06/2010 - 10/06/2010 (15)	1.04	Report
Edit	QA	2	10/06/2010 - 10/06/2010 (13)	1.05	Report

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To access the reports and worksheets from the acceptance page, go to the acceptance tab and select the Material ID for the material that you are looking for.



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Statistical Analysis of Materials

Statistical Acceptance

Work Order Number: Section:

CONTRACT INFO
MATERIAL ACCEPTANCE CRITERIA
TEST DATA
ANALYSIS
ACCEPTANCE
Search
HELP

*Material Type:

*Material:

*Material ID (Mix ID):

*Lab Category:

Mixture

Lab Category	CPF	Sample Size	No. of SubLots	Unit Cost	Bonus		
QA	1 0.83	12000.00	15	51.50	-63036.00	Report	Work Sheet

Compaction

Lab Category	Lot #	Pay Factor	Sample Size	No. Of SubLots	Unit Cost	Bonus	
QA	1	1.04	1200.00	15	51.50	988.80	Report
QA	2	1.05	1040.00	13	51.50	1071.20	Report

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There are two parts of the report. The first part will display all of the information relating to the Material including the item pay factors, the bonus, and the Composite Pay Factor.



Test Results Report

Date : 12/8/2010

Contract Number : 007885, I-85 GRANGER TO GRANDVIEW CONCRETE REHAB
 Orgcode: 454306
 Project Engineer : Davari, Moe
 Lot No : 1
 Original Material Id : MD100009 HMA Class 1/2" - 9-03.8 - 2010
 Bid Item:025.1
 Comment :

Lab Category : Acceptance
 Unit Cost: 51.50
 Total Tons : 12000.00
 CPF : 0.83
 Bonus : -63036.00

Test Property

Test Property Description	Price adjustment factor	Standard deviation	Pay Factor
3/4 in	2	0	1.05
1/2 in	2	1.03	1.05
3/8 in	2	0	0
No. 4	2	0	1.05
No. 8	15	0	1.05
No. 16		0	
No. 30		0	
No. 50		0	
No. 100		0	
No. 200	20	0	1.05
Pct Binder	40	0.03	1.05
Pct Air Voids (Va)	20	2.67	0
Voids in Mineral Aggregate (VMA)		0.45	
Voids Filled with Asphalt (VFA)		0	0
Dust to Asphalt Ratio (D/A)		0	0
Fracture			
Uncompacted Voids			
Sand Equivalent (SE)			
Pbe		0	
Gmb		0.0134	
Gmm		0.0612	

SAM

Date Printed 12/8/2010

The second part of the report shows the test data based on the JMF for each subplot. It displays the JMF, the upper and lower acceptance criteria, the standard deviation for that population of sublots, and the average.



Test Results Report

Date : 12/8/2010

Test Property Description	Price adjustment factor	Standard deviation	Pay Factor
Gsb		0	
Gb		0	

Material Id: MD100009

	3/4 in	1/2 in	3/8 in	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	Pct Bind	Va	VMA	VFA	D/A	% Frac	FAA	SE	Pbe	Gmb	Gmm	Gsb	Gb	
JMF Percent	100	97	81	48	34	24	16	11	8	5.9	5.1	4	14.4	73	1.3	99	48	77	4.5	2.382	2.482	2.64	1.032	
Upper Acceptance	100	100	87	53	38					7	5.6	6.3		80	1.6									
Lower Acceptance	99	91	75	43	30					3.9	4.6	0.7		88	0.6	90		45						
Std Deviation	0	1	0	0	0	0	0	0	0	0	0	2.7	0.5	0	0				0	0.013	0.061	0	0	
Mean	100	94.7	74	51	32	22	16	12	8	6.1	5.2	13	15.8	0	0				0	2.346	2.697	2.64	1.032	

Test Data for MD100009

Sub Lot	Date Tested	Tons	3/4 in	1/2 in	3/8 in	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	Pct Bind	Va	VMA	VFA	D/A	% Frac	FAA	SE	Pbe	Gmb	Gmm	Gsb	Gb
001	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.3	3.7	14.2	0	0				0	2.392	2.484	2.64	1.032
002	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
003	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
004	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
005	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
006	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
007	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
008	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
009	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
010	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
011	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
012	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
013	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032
014	10/08/2010	800.00	100	95	74	51	32	22	16	12	8	6.1	5.2	13.7	15.9	0	0				0	2.342	2.713	2.64	1.032



Test Results Report

Date : 12/8/2010

Material Id: MD100009-1

	3/4 in	1/2 in	3/8 in	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	Pct Bind	Va	VMA	VFA	D/A	% Frac	FAA	SE	Pbe	Gmb	Gmm	Gsb	Gb	
JMF Percent	100	97	81	48	34	24	16	11	8	5.9	5.1	4	14.4	73	1.3	99	48	77	4.5	2.382	2.482	2.64	1.032	
Upper Acceptance	100	100	87	53	38					7	5.6	6.3		80	1.6									
Lower Acceptance	99	91	75	43	30					3.9	4.6	0.7		88	0.6	90		45						
Std Deviation	0	1	0	0	0	0	0	0	0	0	0	2.7	0.5	0	0				0	0.013	0.061	0	0	
Mean	100	94.7	74	51	32	22	16	12	8	6.1	5.2	13	15.8	0	0				0	2.346	2.697	2.64	1.032	

Test Data for MD100009-1

Sub Lot	Date Tested	Tons	3/4 in	1/2 in	3/8 in	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	Pct Bind	Va	VMA	VFA	D/A	% Frac	FAA	SE	Pbe	Gmb	Gmm	Gsb	Gb
016	10/08/2010	800.00	100	91																					

The worksheet displays the calculations involved in arriving at the pay factors for each test property.

Gradation Bonus :-63036.00

Pay Factor Calculations For Test Property

Test property Description	*Mean	Upper Limit	Lower Limit	*Standard Deviation	QU	QL	PU	PL	Quality level	pay factor	price adjustment factor
3/4 in	100	100	99	0	100.00	100.00	100	100	100	1.05	2
1/2 in	-2.3	3	-6	1.03	5.15	3.59	100	100	100	1.05	2
3/8 in	-7	6	-6	0						0	2
No. 4	3	5	-5	0	100.00	100.00	100	100	100	1.05	2
No. 8	-2	4	-4	0	100.00	100.00	100	100	100	1.05	15
No. 16	22			0							
No. 30	16			0							
No. 50	12			0							
No. 100	8			0							
No. 200	0.2	1.1	-2	0	100.00	100.00	100	100	100	1.05	20
Pct Bind	0.1	0.5	-0.5	0.03	13.33	20.00	100	100	100	1.05	40
Va	13	6.3	0.7	2.67	-2.51	4.61	0	100	0	0	20
VMA	15.8			0.45							
VFA	0	80	68	0						0	
D/A	0	1.6	0.6	0						0	
% Frac			90								
FAA											
SE			45								
Pbe	0			0							
Gmb	2.346			0.0134							
Gmm	2.697			0.0612							
Gsb	2.64			0							

Test Data

To view test data or to enter in your own QC data, click on the "Test Data" tab. You will have to select the material that you are looking for by selecting the material Original Material ID (Mix ID).

The table displays all of the lots for the material that you selected. When you click on edit, it shows all of the sublots that are part of the lot that you selected.

Washington State Department of Transportation

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Statistical Analysis of Materials

Test Results List

Work Order Number: 007885 Section: I-85 GRANGER TO GRANDVIEW CONCRETE REHAB

CONTRACT INFO MATERIAL ACCEPTANCE CRITERIA **TEST DATA** ANALYSIS ACCEPTANCE Search HELP

Upload MATS Data Lot List

*Material: HMA Class 1/2" - 9-03.8 - 2010 * Original Material ID (Mix ID): MD100009

Lots

	Lab Category	Lot #	Date Tested	CPF		
Edit	QA	1	10/06/2010 - 10/06/2010 (15)	0.83	Report	Worksheet

Compaction Lots


	Lab Category	Lot #	Date Tested	CPF	
Edit	QA	1	10/06/2010 - 10/06/2010 (15)	1.04	Report
Edit	QA	2	10/06/2010 - 10/06/2010 (13)	1.05	Report

Add New Sublot Add New Compaction Sublot

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The table displays all of the sublots for the material that you selected. When you click on edit, it shows the test data for the subplot that you selected.

If you see a “-R” this means that you have requested a retest of this subplot and the new test data has been entered.



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Statistical Analysis of Materials

Lot Summary

Work Order Number: Section:


CONTRACT INFO
MATERIAL ACCEPTANCE CRITERIA
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* Original Material ID (Mix ID) * Lot Number Number of Sublots

Sublots

	Date Tested	Mix Design No.	Test Lab	Sub Lot No.	SortOrder	Sample ID	Source
Edit	10/06/2010	MD100009	Field Lab	001	1	000001009b0	MATS
Edit	10/06/2010	MD100009	Field Lab	002	2	000001009b1	MATS
Edit	10/06/2010	MD100009	Field Lab	003	3		SAM
Edit	10/06/2010	MD100009	Field Lab	004	4		SAM
Edit	10/06/2010	MD100009	Field Lab	005	5		SAM
Edit	10/06/2010	MD100009	Field Lab	006	6		SAM
Edit	10/06/2010	MD100009	Field Lab	007	7		SAM
Edit	10/06/2010	MD100009	Field Lab	008	8		SAM
Edit	10/06/2010	MD100009	Field Lab	009	9		SAM
Edit	10/06/2010	MD100009	Field Lab	010	10		SAM
Edit	10/06/2010	MD100009	Field Lab	011	11		SAM
Edit	10/06/2010	MD100009	Field Lab	012	12		SAM
Edit	10/06/2010	MD100009	Field Lab	013	13		SAM
Edit	10/06/2010	MD100009	Field Lab	014	14		SAM
Edit	10/06/2010	MD100009-1	Field Lab	016	15		SAM

You can access and see the DOT subplot test data, but you will not be able to change any of the data.



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Statistical Analysis of Materials

Field Test Data: HMA Class 1/2" - 9-03.8 - 2010 Non-Statistical

Work Order Number: Section:

CONTRACT INFO
MATERIAL ACCEPTANCE CRITERIA
TEST DATA
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Search
HELP

*Material:

*Test Lab:

*Date tested:

Location:

*Original Material ID:

*Sub lot ID:

Sample ID:

*Warm Mix Asphalt: Yes No

*Material ID:

Lot Number:

Acpt. Sample#:

*Warm Mix Type:

*Tons:

Sample Source: MATS


Comments:

Date Created:

Test Properties	Test Result Value	Lower Acceptance Limit	Upper Acceptance Limit
3/4 in	100	99	100
1/2 in	95	91	100
3/8 in	74	75	87
No. 4	51	43	53
No. 8	32	30	38
No. 16	22		
No. 30	16		

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You can also add your own QC test data for your own laboratory by clicking on add new subplot or compaction subplot, it will take you to a data entry screen and default to “Contractor QC Lab—Quality Control”.



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Statistical Analysis of Materials

Field Test Data: HMA Class 1/2" - 9-03.8 - 2010 Non-Statistical

Work Order Number

Section

CONTRACT INFO
MATERIAL ACCEPTANCE CRITERIA
TEST DATA
ANALYSIS
ACCEPTANCE
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HELP

Upload MATS Data
Lot List
Sub Lot List

*Material

*Test Lab

*Date tested

Location

*Original Material ID

*Sub lot ID

*Tons

Tester Name

*Material ID

Lot Number

Sample ID

*Warm Mix Asphalt
 Yes No

Comments

Date Created

Test Properties	Test Result Value	Lower Acceptance Limit	Upper Acceptance Limit
3/4 in		99	100
1/2 in		91	100
3/8 in		75	87
No. 4		43	53
No. 8		30	38
No. 16			
No. 30			

Save
Cancel
Add New
Copy As
Retest
Delete

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Help

If you have any problems or questions with the new SAM program. Please contact the MATS Lab Help Desk at mlohelp@wsdot.wa.gov or 360-709-5454.