Florida Department of
TRANSPORTATION

Asphalt Plant Sample Instructions

February 19, 2024

Contents

Introduction

This document describes information related to the sample life cycle of hot mix asphalt plant samples. It does not cover in-depth sample life cycle instructions. Those can be found in the Project Sample User Manual which uses structural concrete as the example material. This document will describe the differences when processing asphalt plant samples.

There are separate instructions for Rolling Straightedge Samples that can be found here:
Projects Let before 07/01/2020
Rolling Straightedge Sample Life cycle Pre 07/2020

Projects Let on or after 07/01/2020
Rolling Straightedge Sample Life Cycle Post 07/2020

This document assumes that the user has access to MAC and has the necessary roles for performing the functions described.

These instructions go beyond basic functions and provide information about items like sample flags, warning messages, error messages, etc.
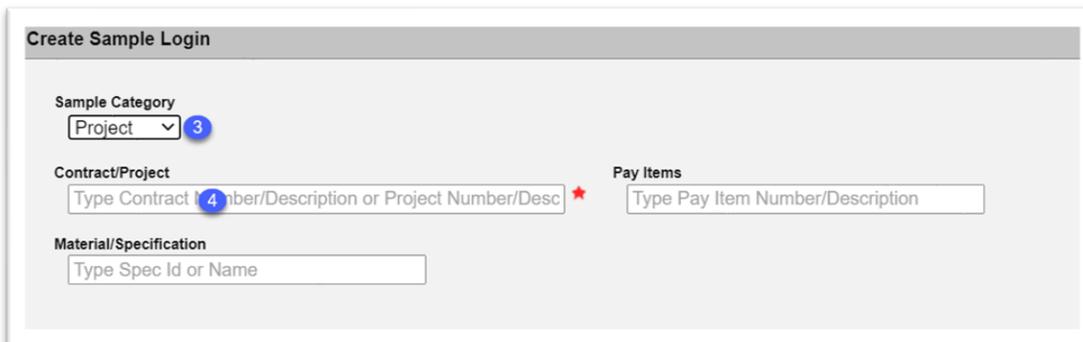
Plant Sample Login

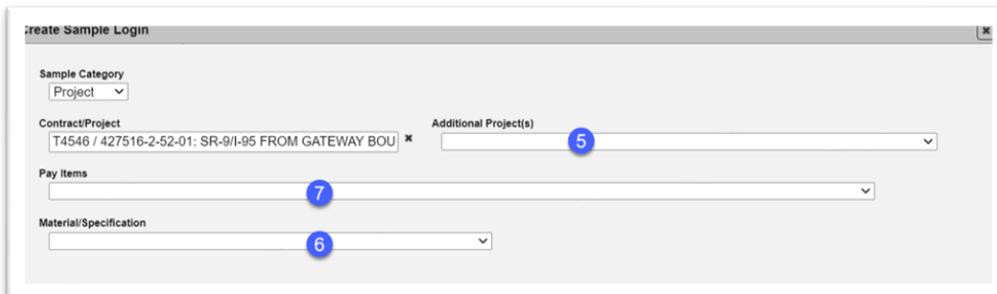1. From the MAC Main menu select the Manage Samples option.

2. Select the Create Sample Login option.

The Create Sample Login dialog box will appear. This dialog box is used for all samples in MAC. As you select additional options, more fields will appear. A (★) indicates a required field.
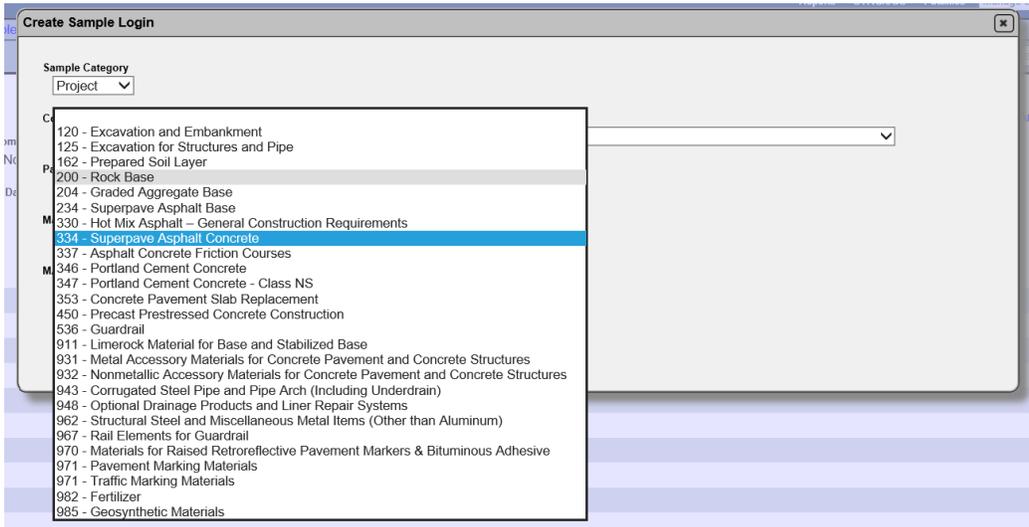

3. **Sample Category** – the Sample Category defaults to project. Leave it as project.
4. **Contract/Project** – enter the Contract or Financial Project Id (FPN) in the Contract/Project field. The field will search on either entry. From the returned search results, select the appropriate entry or entries. MAC restricts project samples to a single contract. Project samples cannot cross contracts. Only use the Lead FPN per *Construction Project Administration Manual (CPAM), Chapter 11.*

After you select the FPN, more fields will appear on the Create Sample Login screen.
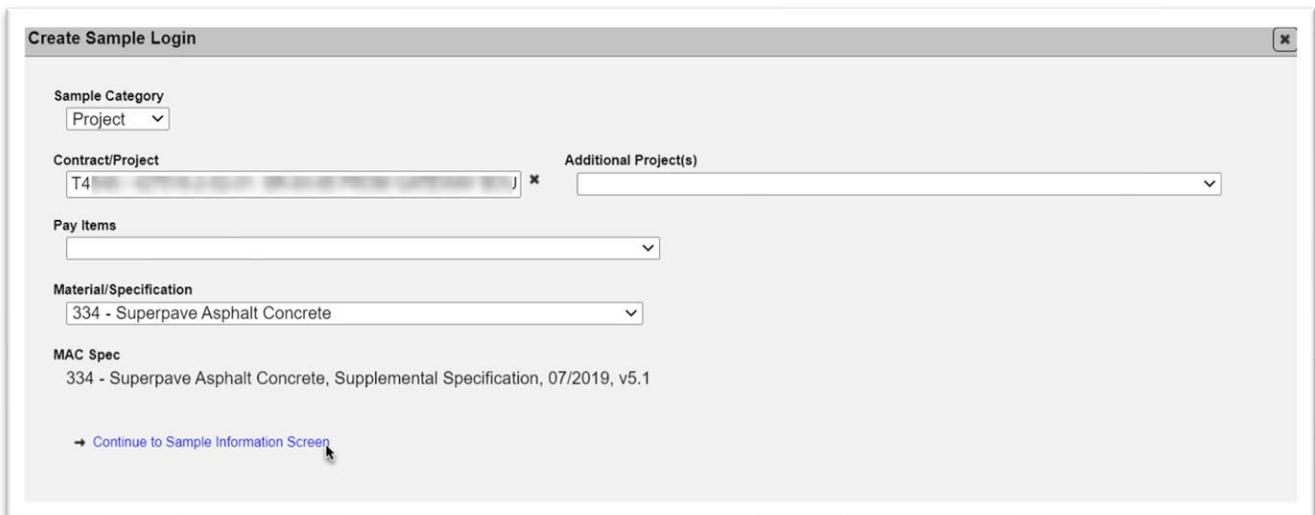

5. **Additional Projects** – do not use the Additional Project(s) field for asphalt samples. This field will only appear if the contract has multiple FPNs.

6. **Material/Specification** – you don't have to enter the fields in the order they appear on the screen. The pay item field comes next, but it is better to select the Material/Specification next to reduce the selection of pay items. Select the appropriate Material/Specification from the drop-down list.

NOTE: Only select MAC Material 234 for asphalt base when the only asphalt on the Project is base and there is no structural asphalt on the Project. If there is base and structural asphalt, enter ALL samples under MAC Material 334, even asphalt base samples. Comparison packages cannot cross MAC Specs. By following this process, you will not end up with some samples in the same package under 234 and some under 334.

7. **Pay Item** – selection is **OPTIONAL** and multi-select. If a sample represents more than one pay item, you can select more than one entry. Do not select a pay item if the contract is Lump Sum, Design Build or LAP.

8. Select the Continue to Sample Information Screen to see the rest of the sample login screen.

The Sample Info portion will appear with only the Sample Level field. As selections are made, more fields will appear depending on the selection.

9. **Sample Level** – select the appropriate Sample Level to reveal more fields.

MAC Specs 234 and 334 do not have categories so the category field will not appear. MAC Spec 337 has two categories: dense graded and open graded.

10. **Asphalt Production Facility** – enter the production facility number or description in the Asphalt Production Facility field and select it from the returned list. MAC will allow the selection of an asphalt production facility that is not on the Contractor QC Plan, but the sample will include a warning message that must be dismissed before the sample can be saved or submitted.

Dismiss the warning and make sure the correct production facility is the correct one that produced the material. If it is not, select the correct production facility. If it is, you can save or submit the sample, but an offlist flag will be assigned to the production facility.

11. **Mix Design** – now that a production facility has been selected, the mix design field displays. It filters on the entries for the selected production facility in the asphalt plant assignment table. Select the appropriate mix design for the sample from the dropdown list. Asphalt samples do not allow for the use of a mix design that is not assigned to the production facility. If the mix design you wish to select is not available, contact the District Materials and Research Office (DMRO) Asphalt Program Maintenance User (PMU). If you're not sure, contact the local District Application Coordinator (DAC) or system administrator.

More fields will appear on the login dialog box.

12. **Sampled by Tech** – enter the name or TIN of the technician who took the sample and select the appropriate entry from the returned list.
13. **Date Sample Taken** – enter the date the sample was taken or select it from the calendar.
14. **Load Number** – enter the load number the sample was taken from.
15. **FDOT Sample Number** – enter the FDOT Sample Number following the asphalt sample numbering system.
16. **LOT #** – enter the LOT number.
17. **Sublot #** – select the sublot number from the dropdown list.
18. **Intended Use** – enter the intended use in the text box.
QC Sample Data Entry personnel can skip the next section and go to field #25.

Additional fields for VT samples

These fields only appear on the VT sample.

19. **Quantity Represented** – enter the Total Tonnage for the Lot.
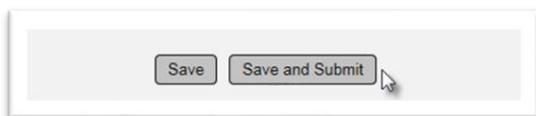20. **Unit of Measure** – select "Ton(s)" for Asphalt Samples.

21. **Sample Quantity Required No Density** – enter the Tonnage for the Lot not requiring Density.

22. **Sample Quantity Required No Density Unit of Measure** – select "Ton(s)" for Asphalt Samples.

23. **Alternate Density Sublot Number** – if an alternate sublot is used for density, select it from the dropdown list.

24. **Total Loads** – if the total loads are known, then enter the total loads for the Lot.

25. **Testing Laboratory** – enter the laboratory where the testing will be performed and select it from the returned list. For VT samples, this is typically the QC lab.

26. **Beginning Mile Post** – enter the beginning mile post for the location of the area represented by the sample, if known. ***This field only appears on VT samples.***

27. **Ending Mile Post** – enter the ending mile post of the location of the area represented by the sample, if known. ***This field only appears on VT samples.***

28. **Station From** – enter the beginning station location of the area represented by the sample in the Station From field.

29. **Station To** – enter the ending station location of the area represented by the sample in the Station To field, if known.

30. **Lane(s)** – select the appropriate lane(s) location of the area represented by the sample, if known. ***This field only appears on VT samples.***

31. **Contact Name** – enter the name of the sample contact person. This may or may not be the same person as the sampler. It is a person the laboratory can call or email if there are questions about the sample.

32. **Cell Phone # or Office Phone #** – enter either the Cell Phone # or Office Phone # in the appropriate field. Only one is required. As soon as one is entered, the other required field designator disappears. Both can be provided for informational purposes.

33. **Email** – enter the email address of the contact person in the Email field.

34. **Save & Submit** – select Save if you are not ready send the sample for testing and want to save the data you have entered so far. Select Save and Submit if you are ready to send the sample for testing. If you select Save, the sample will be designated as Logged and will need to be Submitted for Testing in order for the test results to be entered on the lab tests.

NOTE: DO NOT create a VT sample to represent Visually Inspected LOTs. This is designated as part of the Comparison Package (Terminated Lots, Incomplete Lots, Visual Inspection, Lot Closed Due to Time). Creating a VT generates inaccurate MC Review findings as the required tests must be designated as Not Performed. There were no tests performed on a visual lot so designating the tests as Not Performed is incorrect.

Sample Numbering System

Examples of Sample Numbers	
Type of Mix	**Correct Numbering Sequences**
ATPB 67 Stone	A1001Z, A1002Z, A1003Z, A1004Z
ATPB 57 Stone	A2001Z, A2002Z, A2003Z, A2004Z
B-12.5	B2001Z, B2002Z, B2003Z, B2004Z
FC-9.5	1F001Z, 1F002Z, 1F003Z, 1F004Z
FC-12.5	2F001Z, 2F002Z, 2F003Z, 2F004Z
FC-5	3F001Z, 3F002Z, 3F003Z, 3F004Z
SP-9.5 TL-A	1A001Z, 1A002Z, 1A003Z, 1A004Z
SP-9.5 TL-B	1B001Z, 1B002Z, 1B003Z, 1B004Z
SP-9.5 TL-C	1C001Z, 1C002Z, 1C003Z, 1C004Z
SP-9.5 TL-D	1D001Z, 1D002Z, 1D003Z, 1D004Z
SP-9.5 TL-E	1E001Z, 1E002Z, 1E003Z, 1E004Z
SP-12.5 TL-A	2A001Z, 2A002Z, 2A003Z, 2A004Z
SP-12.5 TL-B	2B001Z, 2B002Z, 2B003Z, 2B004Z
SP-12.5 TL-C	2C001Z, 2C002Z, 2C003Z, 2C004Z
SP-12.5 TL-D	2D001Z, 2D002Z, 2D003Z, 2D004Z
SP-12.5 TL-E	2E001Z, 2E002Z, 2E003Z, 2E004Z
SP-19.0 TL-A	3A001Z, 3A002Z, 3A003Z, 3A004Z
SP-19.0 TL-B	3B001Z, 3B002Z, 3B003Z, 3B004Z
SP-19.0 TL-C	3C001Z, 3C002Z, 3C003Z, 3C004Z
SP-19.0 TL-D	3D001Z, 3D002Z, 3D003Z, 3D004Z
SP-19.0 TL-E	3E001Z, 3E002Z, 3E003Z, 3E004Z

Sample Level	Last Letter of Sample Number (relace Z with value below)
QC	Q
PCX (Process Control)	X
PCS (IV Split Sample)	S
VT	V
RT	R
IV	I
IVC (Split Check Sample)	C
IVC (Follow-up Sample)	F
IA	A

Sample Receipt

Most asphalt plant samples are auto received. These instructions can also be used when an asphalt sample needs to be routed to another lab. See the Project Sample User Manual for detailed instructions on routing samples.

Result Entry

The instructions as shown in the Project Sample User Manual do not need any additional instructions for asphalt except for the following:

Selecting Perform Multiple Tests

Users entering asphalt plant test results should use the Perform Multiple Tests option differently than other materials. There is a relationship between the tests on an asphalt plant sample and they are not typically performed at the same time.

When the Perform Multiple Tests option is selected under the Associated Tests tab, a Perform Multiple Tests dialog box appears with all the tests on the sample selected. For many samples this is appropriate. For asphalt it normally isn't, because not all tests are performed at the same time.

The test that normally gets performed later than the rest of the tests is FM 1-T 166 Gmb – Roadway.

Deselect if not performed at the same time as the other tests

1. Deselect the FM 1-T 166 Gmb – Roadway if it will be tested later.
2. Perform all other tests.

MAC will fill in the Technician and date test performed on FM 5-563, FM 1-T 030, FM 1-T 209 and FM 1-T 166 Gmb – Plant, and Asphalt Volumetrics tests. It will not add this information to the test you deselected.

3. When you are ready to complete FM 1-T 166 Gmb – Roadway, select the Perform Test option on the row of the test under the Associated Tests tab.

A Perform Test dialog box will appear.
4. Complete the test and select the Save option
5. If the test is not performed, select the Mark Test Not Performed on the row of the test.

If this tests is selected initially and you want to designate FM 1-T166 Gmb – Roadway as not performed, if you do not deselect it when you initially enter results for the other tests, MAC fills in the Technician and Date Test Performed fields. MAC thinks you already started the test so it doesn't properly close the test and creates false MC Review findings that will not go away when the MC Review PMU recalculates the findings.

Special Consideration for Asphalt QC samples and No Density Required

If the entire LOT is non-density, select the Test Not Performed [No Density Required] option for FM 1-T 166 Gmb – Roadway on all Sublots for the QC and VT Sample levels.

If the Verification Sublot falls on a Sublot with density, the VT sample would show density testing in the test definition FM 1-T 166 Gmb - Roadway.

However, if the LOT has density and the Verification Sublot falls on a Sublot with non-density, (meaning the QC original sample has no density test results), select the alternate Density Sublot on the sample login screen (field 21 in these instructions). On the test result screen, enter the density data for the alternate sublot on the VT Sample test definition FM 1-T 166 Gmb - Roadway. If the Alternate Density Sublot is also non density, a randomly selected sublot with density should be selected.

Later, when the comparison package is created, MAC uses this information to connect the VT density results to the QC density test results on a different sample than the original sample QC sample for the Density Pay Factor Calculations.

Sample and Test Data Review and Submitting Samples for FDOT Verification

The instructions as shown in the [Project Sample User Manual](#) do not need any additional instructions for asphalt. Data Reviewers can use the [Asphalt Plant Sample Finalization Guide List](#) to confirm the data is correct before submitting the sample to FDOT.

Sample Finalization

NOTE: You must be in system roles to perform sample finalization. Select the "No Company, I'll use my System Roles" option.

The PA or his delegate must finalize all project samples that are not auto-finalized. In some districts, the PA's delegate may be the Asphalt Plant VT or the Resident Asphalt Specialist. If you are not sure who the PA's delegate is, contact the local District Application Coordinator. The instructions as shown in the [Project Sample User Manual](#) do not need any additional instructions for asphalt except the PA or his delegate should ensure that the QC sample that is designated as the alternate density sublot has density test results and is not indicated as Test Not Performed, No Density Required.

If a VT sample has been created for a paper lot, have the sample deleted and create a visual inspection (paper lot) comparison package.

PAs should use the [Asphalt Plant Sample Finalization Guide List](#) to review that sample and test data is correct and complete before attempting to create comparison packages. The guide list has several items that need to be checked to avoid getting false non-comparisons. If you create comparisons immediately after finalizing the asphalt plant samples, MAC remembers your filters from the finalized samples, and you don't have to make a note of them.
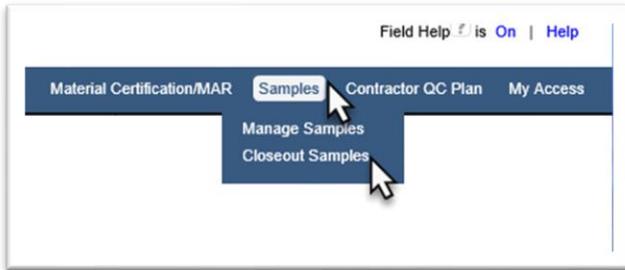
Comparison Packages

NOTE: You must be in system roles to create comparison packages. Select the "No Company, I'll use my System Roles" option.

When do you create an asphalt comparison package?
- **VT does not test until all QC testing is complete**. Create the comparison package as soon as the VT sample is finalized.

Creating a Comparison Package

1. Select the Samples menu option.
2. Select the Closeout Samples sub menu option.

You will be navigated to the Comparison Package screen.
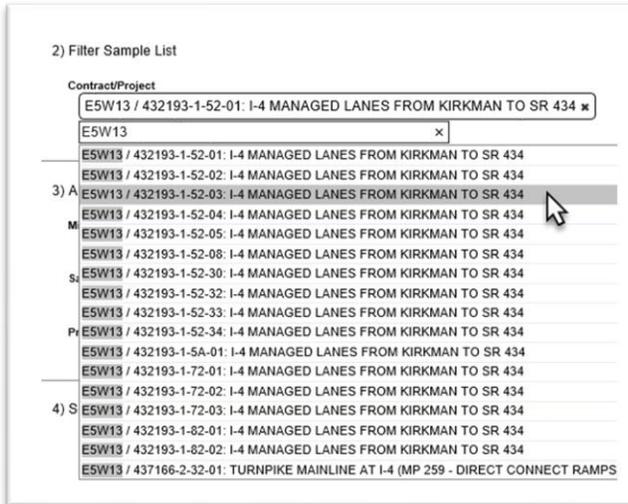

3. Select the Create Comparison Package option to create a new comparison package.

MAC will populate the comparison package criteria from the last sample you finalized. This is convenient if you finalize similar samples and then move to the comparison package stage to complete the sample life cycle. If you are creating comparison packages for a material you did not just finalize, you will have to alter the information to fit the material you are currently working on.

4. If the populated information is incorrect, select the x by the field (like Material/Spec) to remove the default and select something else.

5. Asphalt lots must be within the same contract/ project. Users are instructed to log asphalt samples under the primary Financial Project Id and not use the Additional Projects option on the login screen. However, PAs may find that this has been done and the samples only appear when filtering on additional projects as well as the primary Financial Project Id.

6. Additional filters can be designated in the Additional Optional Filters section.

For asphalt samples, the information needed is:
- Contract Spec and Workbook (i.e., 334 1.x 01/2009; 337 2.x)
- Type of Comparison
  - QC-VT
  - IV-PCS – check with your local DAC to see if there is a delegate for the PA for these samples
- Lot Number

MAC auto creates asphalt comparison packages only based on this information. The auto packaging:
- Looks for duplicates only on the verified sublot
- Looks for 0-3 associated samples
- Requires that the mix design is the same for all samples in the package

7.

a. Select Create Package to designate the samples and save the comparison package. You will have to select the Run Compare on Comparison Package later.

OR

b. Select Create Package and Run Compare if you want to save the package and run the comparison now.

Terminated Lots, Incomplete Lots, Visual Inspection, Lot Closed Due to Time

1. Follow the steps described above to create the comparison package.

2. If a Lot is terminated due to QC test failures (see 334-5.4.4) select the Lot Terminated option on the Incomplete Package.

3. Incomplete Lots are Lots where a sample is missing or damaged. When selected, options are available to indicate the reason. Select the reason why the comparison package is incomplete, and comparison cannot be performed.

4. Visual Inspection LOTs are LOTs under 1000 Tons or the project is less than 2000 Tons. These LOTs are accepted by Visual inspection (see 334-5.1.2). These are also known as Paper Lots.
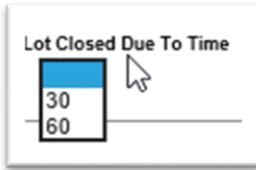a. **Is Visual Inspection?** – Select this indicator for visual inspection lots.
b. **Lot #** – when the Is Visual Inspection? indicator is selected, the Lot number field becomes a text input to manually enter the Lot number. Enter the LOT number that was visually inspected.
c. **Tonnage** – enter the total tonnage in the lot.
d. **Mix Design** – enter the mix design used on the lot.

If a VT sample has been created for a paper lot, have the sample deleted and create a visual inspection (paper lot) comparison package.
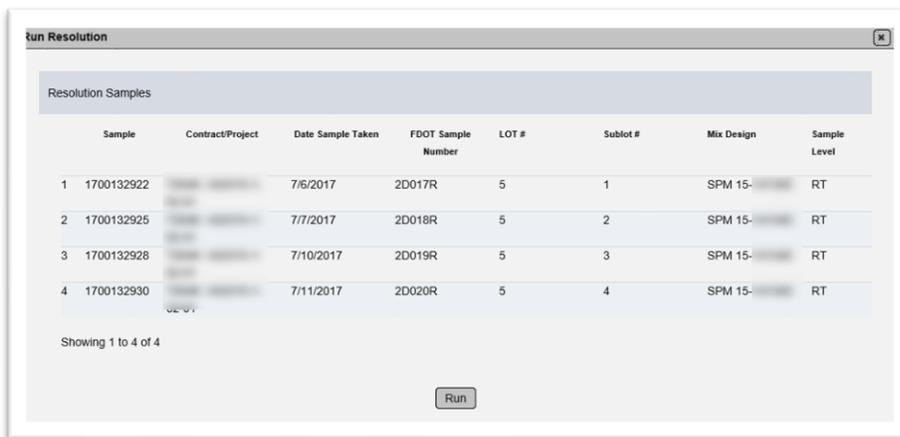

5. Lot Closed Due to Time is a closed LOT that has reached the 30-day or 60-day time restriction for older contracts or 30-day or 90-day time restriction for newer contracts (see 334-5.3). Indicate that the LOT was closed due to time by selecting either 30, 60 or 90.

Adding Resolution to a Comparison Package that Does Not Compare

1. On the comparison package screen that requires resolution, select the Run Resolution option.

A Run Resolution dialog box will appear. Like the comparison, the resolution samples are auto packaged.

2. Select the Run option to add the resolution samples to the comparison package. MAC will determine the resolution status.

The Resolution status will be updated by MAC.

Composite Pay Factor

The Composite Pay Factor tab displays all the data used to determine the Composite Pay Factor (CPF) for the lot.
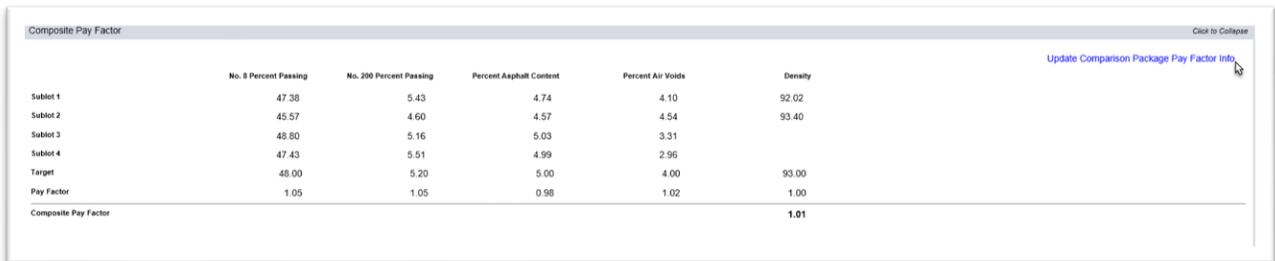

1. Click on the Composite Pay Factor tab to expand it.

- Master Production failures are highlighted in bold, red font
- When Resolution data is used, the QC data will be crossed out
- Individual Pay Factors and CPFs below 0.90 will be highlighted in bold, red font
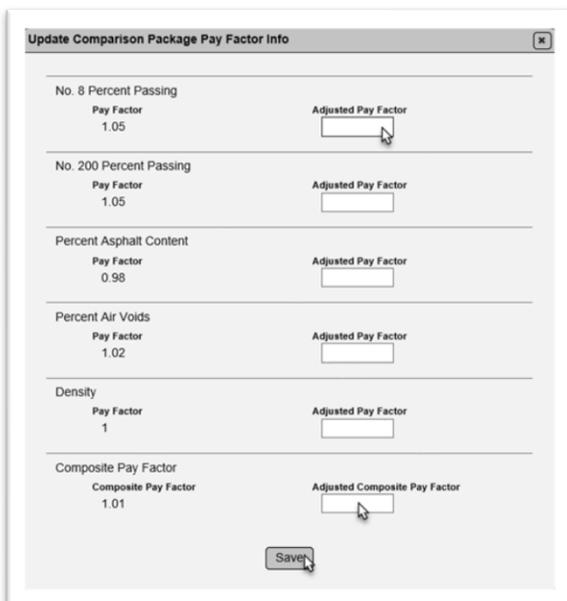
The CPF can be manually adjusted.

2. Click on the Update Comparison Package Pay Factor Info option.

An Update Comparison Package Pay Factor Info dialog box will appear.

3. Each individual pay factor can be adjusted.

4. The overall CPF can be adjusted.
a. If the CPF is adjusted, an Adjusted Composite Pay Factor Reason field will appear. Enter the reason for adjusting the overall CPF.

Composite Pay Factor

Composite Pay Factor	Adjusted Composite Pay Factor	Adjusted Composite Pay Factor Reason
1.02	1.00	More than 4 mix designs per nominal maximum aggregate size per traffic level, per binder grade, per year have been used so the CPF is limited to 1.00.

Save

5. Select Save to save the adjustment(s).

Composite Pay Factor

Update Comp

	No. 8 Percent Passing	No. 200 Percent Passing	Percent Asphalt Content	Percent Air Voids	Density
Sublot 1	47.38	5.43	4.74	4.10	92.02
Sublot 2	45.57	4.60	4.57	4.54	93.40
Sublot 3	48.80	5.16	5.03	3.31	
Sublot 4	47.43	5.51	4.99	2.96	
Target	48.00	5.20	5.00	4.00	93.00
Pay Factor	1.05 1.00	1.05	0.98	1.02	1.00
Composite Pay Factor					1.01 1.00

Override Reason
  More than four mix designs per nominal maximum aggregate size have been used so the CPF is restricted to a maximum of 1.00.

- If Individual Pay Factors are adjusted, the CPF will automatically recalculate unless the CPF is adjusted as well
- Manually adjusted Individual Pay Factors and CPFs are displayed with the original value crossed out and the adjusted value shown
- Comments are displayed at the bottom of the tab

When QC and VT designate that there is No Density required on all lots, the Density Pay Factor is defaulted to 1.00.

When VT has indicated an Alternate Density Sublot on the Login Screen and entered the density test results on the VT sample, MAC uses the QC density results on the sample designated as the alternate sample to calculate the Density Pay Factor.

The Original QC sample has no density results:

MAC uses density results from the QC Sample designated as alternate density sublot instead to calculate the density pay factor.

Sample 1600018696 [Finalized]   Go To Sar

Contact Information

Sample Comments [1]

Documents [0]

Associated Tests [6]

		Lab or Field	Lab ID	Tester	Test Disposition	Test Status	Required	Which test Rules?	
FM 5-563 Asphalt Content by Ignition Oven									
1	Initial Test	Lab	A0691	D63243278	Pass	Test Complete	Required		View
FM 1-T 030 Superpave Gradation									
2	Initial Test	Lab	A0691	D63243278	Pass	Test Complete	Required		View
FM 1-T 209 Maximum Specific Gravity									
3	Initial Test	Lab	A0691	D63243278	Pass	Test Complete	Required		View
FM 1-T 166 Gmb - Plant									
4	Initial Test	Lab	A0691	D63243278	Pass	Test Complete	Required		View
FM 1-T 166 Gmb - Roadway									
5	Initial Test	Lab	A0691	D63243278	Pass	Test Complete	Required		View
Asphalt Volumetrics									
6	Initial Test	Lab	A0691	D63243278	Pass	Test Complete	Required		View

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Errors will occur if the alternate density QC sample is designated as Test Not Performed, No Density Required.