

Mix Design – Asphalt

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Create Mix Design Mix Designs

Preconditions:

-  **The ‘Mix Design – Asphalt Spec’ must be created and set to ‘Official’ status in the MAC system before initiating an ‘Asphalt Mix Design’.**
 - **The ‘Approval Sample Level’ and ‘Verification Sample Level’ can be defined.**
 - **The ‘Mix Design Volumetrics Limits’ can be assigned to the below fields.**
 - **Dust/Asphalt Ratio**
 - **Fine Aggregate Angularity**
 - **Percent Gmm at Nini**
 - **Percent Air Void**
 - **Percent VFA at Ndes**
 - **Percent VMA at Ndes**

-  **The below mix design tests can be added to the ‘Mix Design – Asphalt Spec’:**
 - **FM5-563 Ignition Oven Calibration**
 - **FM1-T030 Gradation - Mix Design**
 - **FM1-T209 Gmm - Mix Design**
 - **FM1-T166 Gmb - Mix Design**
 - **FM 1-T 084 FASG-Mix Design**
 - **AASHTO T 304 Fine Aggregate Angularity**
 - **FM1-T283 Moisture Susceptibility**
 - **AASHTO T 27 Gradation - Milled Material/Crushed RAP**
 - **Asphalt Sample Weights - Mix Design**
 - **FM1-T209 Recycled Material Gmm**
 - **AASHTO T 176 Sand Equivalent**
 - **AASHTO T 305 Draindown**
 - **FM1-T085 Coarse Aggregate Specific Gravity**
 - **Asphalt Superpave Reflux Extraction**
 - **FM5-563 - Mix Design Aggregate Correction Factor**
 - **FM5-559 Ground Tire Rubber**

-  **The ‘Program Spec’ must be created and set to ‘Official’ status with all the desired categories/materials marked as ‘Eligible to be Product’.**

-  **The ‘Production Facilities’ must be established in the MAC system and all the desired product(s) must be added to it.**
 - **On the ‘Production Facilities’ the ‘Percent Binder’ and ‘GSB’ should also be provided for each product added.**
 - **On the “production Facilities’ the ‘Mix Design Sieve Sizes’ are defined.**

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Role(s) – Mix Design Submitter and System Administrator

1. Login to the MAC site: <https://fdotews1.dot.state.fl.us/MAC/Default.aspx#> with your Domain\User ID and password.

2. Select the 'Mix Design Submitter' role from the 'Test Role' dropdown.

3. Click on the 'Mix Designs' tab.
4. Click on 'Create New Mix Design' link.

5. Enter the below information on the ‘Create New Mix Design’ screen:
 - a. Mix Design Type
 - b. Is For Research?
 - c. Spec Version
 - d. Category
 - e. Is Lab Design
 - f. Managing District
 - g. Owning Company
 - h. Mix Designer
 - i. Mix Designer Email
 - j. Mix Texture
 - k. Intended Use
 - l. Traffic Level

The screenshot shows a web form titled "Create New Mix Design" with the following fields and callouts:

- 1: Mix Design Type (dropdown menu)
- 2: Is For Research? (checkbox)
- 3: Spec Version (dropdown menu)
- 4: Category (dropdown menu)
- 5: Is Lab Design (checkbox)
- 6: Managing District (dropdown menu)
- 7: Owning Company (text input)
- 8: Mix Designer (text input)
- 9: Mix Designer Email (text input)
- 10: Mix Texture (dropdown menu)
- 11: Intended Use (dropdown menu)
- 12: Traffic Level (dropdown menu)
- 13: Save (button)

Note(s):

- ✚ The ‘Spec Version’ dropdown is populated with all the ‘Official’ mix design specs based on the ‘Mix Design Type’ selected.
- ✚ The ‘Category’ dropdown is populated from the ‘Spec Version’ selected.
- ✚ The ‘Mix Designer TIN’ entered must be ‘Qualified’ in CTQP.
- ✚ If the ‘Is For Research?’ checkbox is checked, the ‘Spec Version’ drop down will be populated with all the ‘Official – Asphalt Mix Design – Research’ specs.
- ✚ The ‘Mix Design Request Number’ is generated by the system.

Update Mix Design

Role(s) – Mix Design Submitter and System Administrator

1. Click on the ‘Update’ link at the top of the Mix Design screen.
2. Update the mix design as necessary and click on the ‘Save’ button:

The screenshot displays the 'Mix Design 0000097' screen. At the top, there are links for 'Create New Mix Design' and 'Search', and a 'Go to' search box. Below this is a table of actions: 'Update' (circled in red), 'Update Special Use Instructions', 'Delete', 'Initiate Approval Sample', 'Initiate Verification Sample', 'Copy', and 'View for Print'. The table also shows details for the mix design: Request Number (0000097), Mix Design Type (Asphalt), Spec Version (0807 - Test 6 - Test 6, Mix Design, v1.0), Category (Category 1/Material 1), Is Lab Design (No), and Managing District (District 1). The current status is 'In Progress'. Below the table is an 'Update' form with the following fields: 'Is Lab Design' (checkbox), 'Managing District' (dropdown menu), 'Owning Company' (text field), 'Mix Designer' (text field), 'Mix Designer Email' (text field), 'Mix Texture' (dropdown menu), 'Intended Use' (dropdown menu), and 'Traffic Level' (dropdown menu). A 'Save' button is located at the bottom of the form. A green arrow points from the 'Update' link in the table to the 'Update' form.

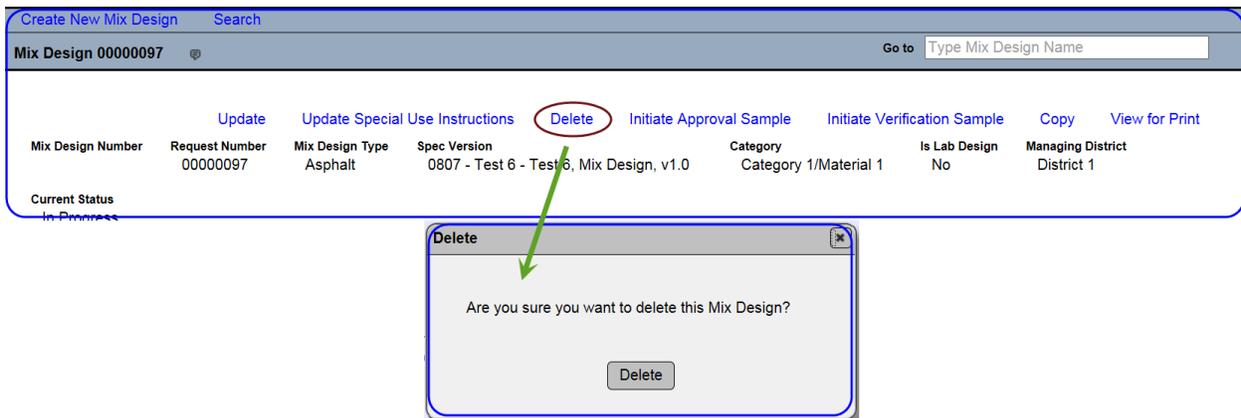
Note(s):

- ✚ *The Mix Design can be updated only if the Mix Design is in ‘In Progress’ status.*

Delete Mix Design

Role(s) – Mix Design Submitter and System Administrator

1. Click on the ‘Delete’ link on the Mix Design screen.
2. On the ‘Delete’ screen click on the ‘Delete’ button.



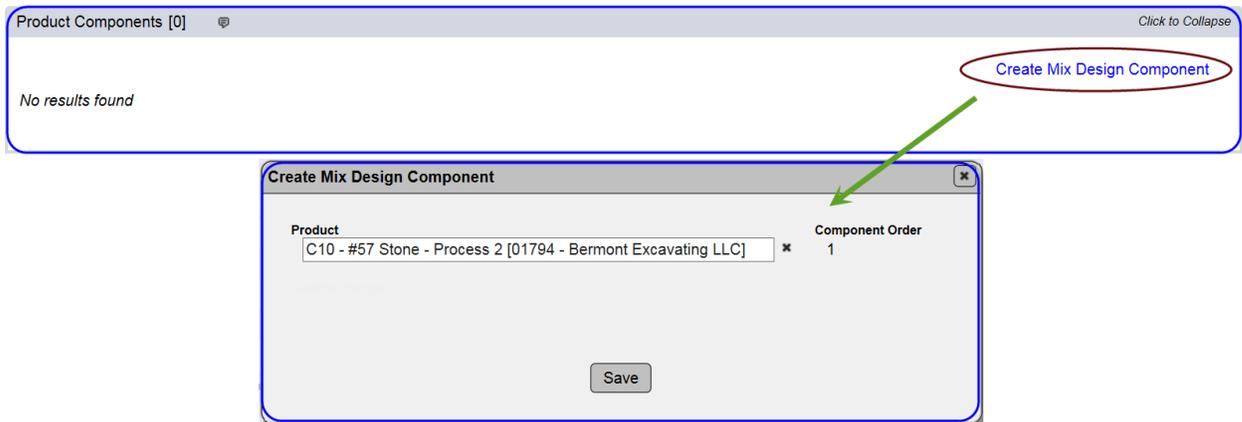
Note(s):

-  **The Mix Design can be deleted only if it is in 'In Progress' status.**

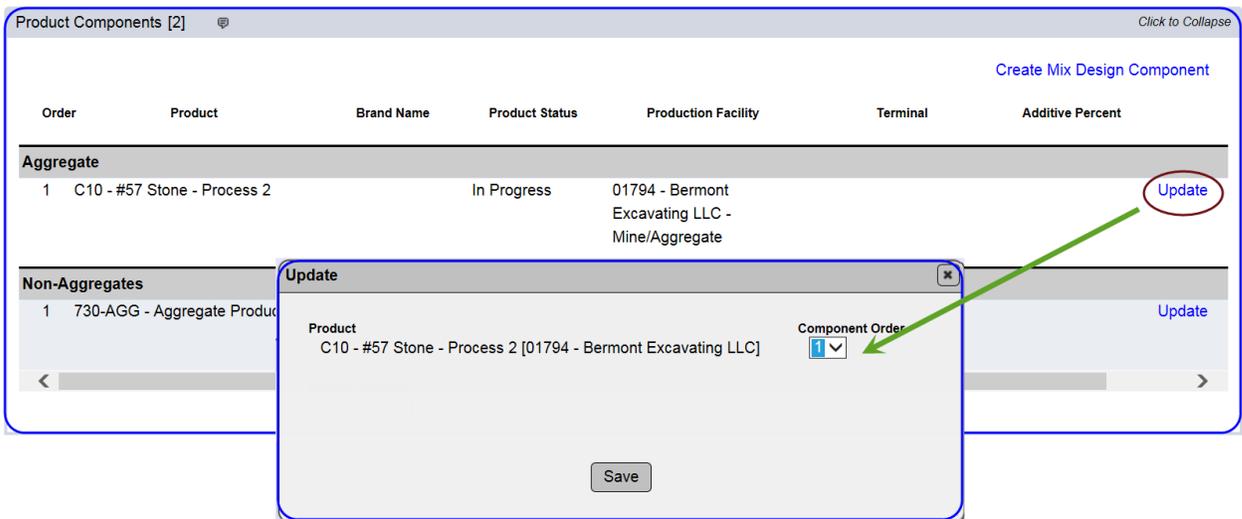
Product Components

Role(s) – Mix Design Submitter and System Administrator

1. Expand the ‘Product Components’ section.
2. Click on the ‘Create Mix Design Component’ link.
3. Enter the below information on the ‘Create Mix Design Component’ screen and click on the ‘Save’ button.
 - a. Product → existing production facility products
 - b. Component Order → conditional



4. Click on the ‘Update’ link to update the ‘Component Order’.



5. Click on the ‘Delete’ link next to an added ‘Product Component’ in the ‘Products Component’ section.

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- Click on the ‘Delete’ button on the ‘Delete’ screen.

Product Components [4] Click to Collapse

Create Mix Design Component

Product	Brand Name	Product Status	Production Facility	Terminal	Additive Percent
#57 Stone - Process 2		In Progress	01794 - Bermont Excavating LLC - Mine/Aggregate		Update Delete
#57 Stone - Process 1	JDM2-C10				Update Delete

Delete

Are you sure you want to delete this Mix Design Component?

Delete

Note(s):

- The components are added under ‘Aggregate’ and ‘Non Aggregate’ sections based on the production facility ‘Material Type’.
- When the first ‘Product Component’ is added, the system will assign it a ‘Component Order’ of ‘1’. As more components are added, the system provides a drop down of numbers so the user(s) can assign a ‘Component Order’ to each component added.
- The ‘Product Components’ can be added, updated and deleted only if the Mix Design is in ‘In Progress’ status.

- Click on ‘Manage Additional Components’ link.
- On the ‘Manage Additional Components’ screen, select one or more ‘Additional Components’:
 - Lime
 - Sand

Product Components [4] Click to Collapse

Create Mix Design Component Manage Additional Components

Order	Product	Brand Name	Product Status	Production Facility	Terminal
Non-Aggregates					
1	PRODUCT 1 - Aggregate Product	12345	In Progress	0820-CMT - JDM Consulting 1 - Plant/Asphalt	Update Delete

Manage Additional Components

Additional Components

Lime

Sand

Save

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Note(s):

 **These additional components will be displayed under the ‘Product Component’ section.**

Product Components [4] Click to Collapse					
Create Mix Design Component Manage Additional Components					
Order	Product	Brand Name	Product Status	Production Facility	Terminal
Non-Aggregates					
1	PRODUCT 1 - Aggregate Product	12345	In Progress	0820-CMT - JDM Consulting 1 - Plant/Asphalt	Update Delete
Aggregate					
1	PRODUCT 1 - Aggregate Product - Process 1	Test # 1	In Progress	0820 - JDM Consulting 1 - Mine/Aggregate	Update Delete
Additional Components					
Sand					
Lime					

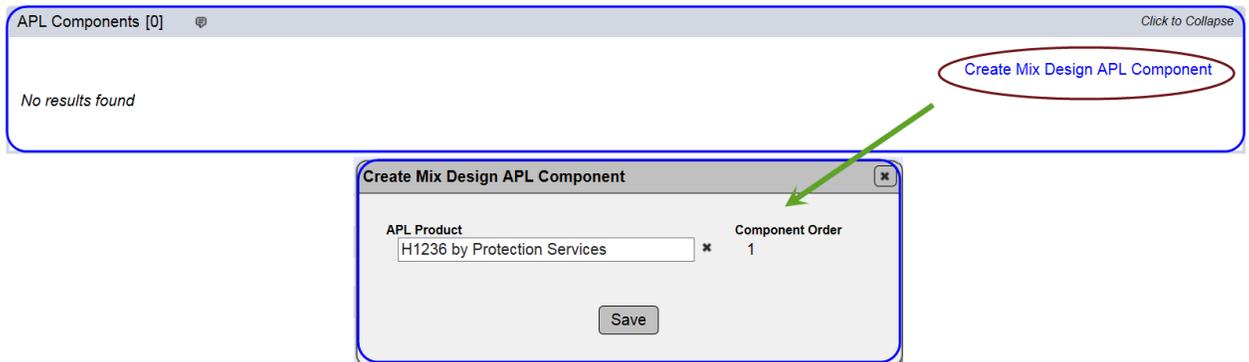
 **These additional components will also be displayed under the ‘Percentage by Weight Total Aggregate Passing Sieves’ section.**

Percentage by Weight Total Aggregate Passing Sieves Click to Collapse							
	PRODUCT 1	PRODUCT 1	Sand	Lime	Job Mix Formula (JMF)	Control Points	Primary Control Sieve
Blend Percentage	0	100					
1"	6	10			10		
3/4"	66	126			126		10
1/2"	77	627			627		
3/8"	34	1,274			1,274	10 - 10	
No. 4	45	613			613		
No. 8	56	353			353		

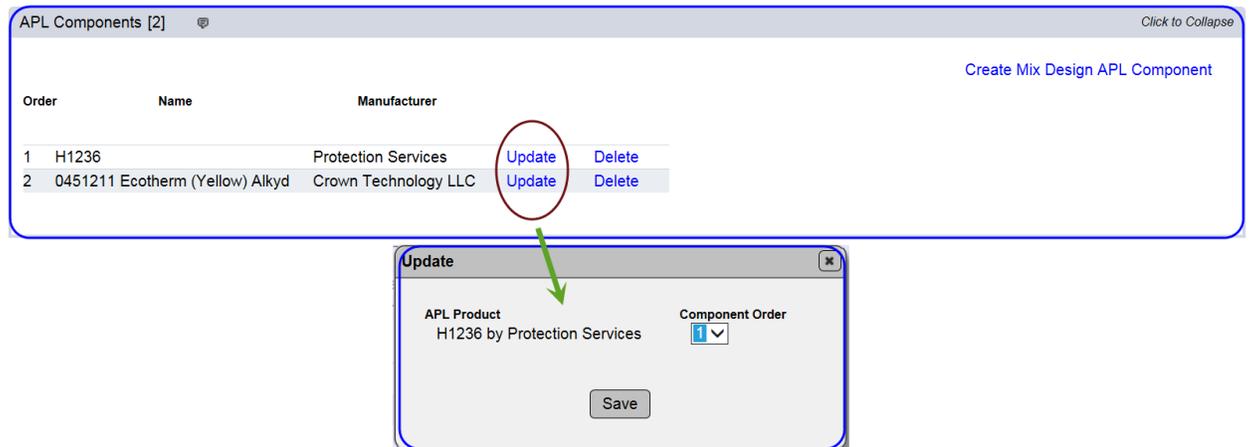
APL Components

Role(s) – Mix Design Submitter and System Administrator

1. Expand the ‘APL Components’ section and click on the ‘Create Mix Design APL Component’ link.
2. Enter the ‘APL Product’ on the ‘Create Mix Design APL Component’ screen and click on the ‘Save’ button.



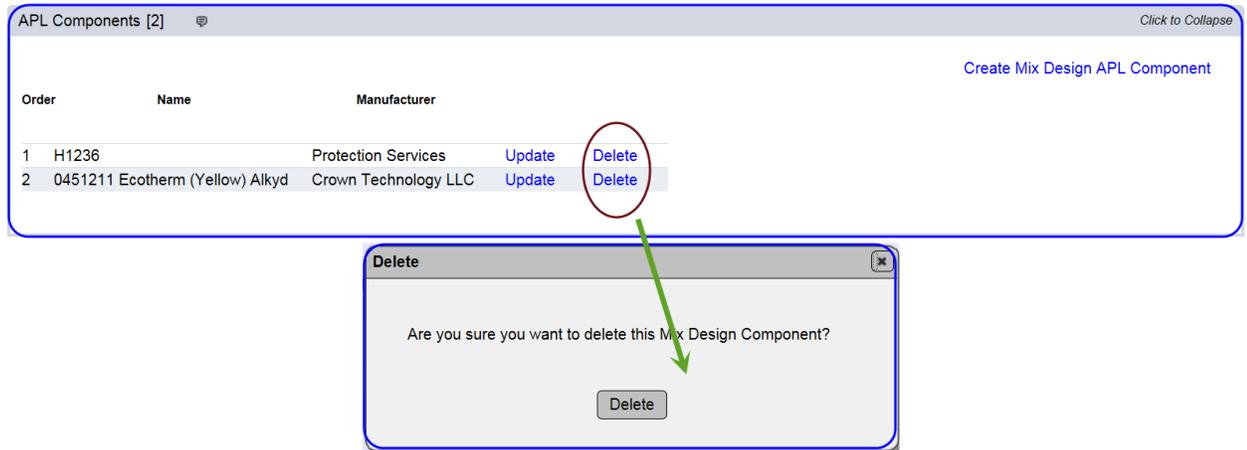
3. Click on the ‘Update’ link to update APL components.
4. Make the desired updates and click on ‘Save’ button.



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6. Click on the ‘Delete’ link next to an added ‘APL Component’ in the ‘APL Component’ section.
7. Click on the ‘Delete’ button on the ‘Delete’ screen.



Note(s):

- ✚ When the first ‘APL Component’ is added, the system will assign it a ‘Component Order’ of ‘1’. As more components are added, the system provides a drop down of numbers so the user can assign a ‘Component Order’ to each component added.
- ✚ The ‘APL Components’ can be added, updated and deleted only when the Mix Design is in ‘In Progress’ status.

Non Standard Product Components

Role(s) – Mix Design Submitter and System Administrator

1. Expand the ‘Non Standard Product Components’ section.
2. Click on the ‘Create Mix Design Non Standard Component’ link.
3. Enter the below information on the ‘Create Mix Design Non Standard Component’ screen and click on the ‘Save’ button:
 - a. Component Name
 - b. Component Description
 - c. Brand Name
 - d. Component Order

The screenshot displays two overlapping windows from a software application. The top window, titled 'Non-Standard Components [0]', shows a search results area with the text 'No results found' and a button labeled 'Create Mix Design Non Standard Component' circled in red with a '1' callout. A green arrow points from this button to the 'Create Mix Design Non Standard Component' form window below. This form window contains several input fields: 'Component Name' with the value '0819-C1' (callout 2), 'Component Description' with the value 'Component # 1' (callout 3), 'Brand Name' with the value '0819-Test' (callout 4), and 'Component Order' with the value '1' (callout 5). A 'Save' button is located at the bottom right of the form (callout 6).

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4. Click on the ‘Update’ link to update the ‘Non Standard Components’.
5. Make the desired updates and click on the ‘Save’ button.

The screenshot shows a table titled "Non-Standard Components [1]" with columns for Order, Name, Description, and Brand Name. A single row is visible with the following data: Order 1, Name 0819-C1, Description Component # 1, and Brand Name 0819-Test. To the right of this row are two links: "Update" and "Delete". The "Update" link is circled in red, and a green arrow points from it to an "Update" dialog box. The dialog box contains four input fields: "Component Name" (0819-C1), "Component Description" (Component # 1), "Brand Name" (0819-Test), and "Component Order" (1). A "Save" button is located at the bottom of the dialog box.

6. Click on the ‘Delete’ link to delete a ‘Non Standard Component’.

The screenshot shows the same "Non-Standard Components" table as above. In this view, the "Delete" link is circled in red, and a green arrow points from it to a "Delete" dialog box. The dialog box contains the text "Are you sure you want to delete this Mix Design Component?" and a "Delete" button at the bottom.

Note(s):

- ✚ **When the first ‘Non Standard Component’ is added, the system will assign it a ‘Component Order’ of ‘1’. As more ‘Non Standard Components’ are added, the system provides a drop down of numbers so the user can assign a ‘Component Order’ to each ‘Non Standard Component’ added.**
- ✚ **Non Standard Components can be added, updated and deleted only when the Mix Design is in ‘In Progress’ status.**

Percentage by Weight Total Aggregate Passing Sieves

Role(s) – Mix Design Submitter, SMO Asphalt and System Administrator

1. Expand the ‘Percentage by Weight Total Aggregate Passing Sieves’ section.
2. Verify the below information is populated on this section:
 - a. Non Aggregate Components and their Sieve sizes
 - b. Aggregate Components and their Sieve sizes
 - c. Additional Components
 - d. Job Mix Formula
 - e. Control Points
 - f. Primary Control Sieve

Percentage by Weight Total Aggregate Passing Sieves Click to Collapse							
	C21	PRODUCT 1	Sand	Lime	Update Component Values Job Mix Formula (JMF)	Control Points	Update Mix Design Job Mix Formula Primary Control Sieve
Blend Percentage	0	100					
1"	6	10			10		
3/4"	66	126			126		10
1/2"	45	627			627		
3/8"	56	1,274			1,274	10 - 10	
No. 4	44	613			613		
No. 8	66	353			353		
No. 16	34	216			216		
No. 30	4	247			247		
No. 50	5				0		
No. 100							
No. 200							
GSB	100.000	100.000			100		

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3. Click on the ‘Update Component Values’ link to update/add component values.
4. Add/Update the component values and click on ‘Save’ button.

Percentage by Weight Total Aggregate Passing Sieves Click to Collapse

[Update Component Values](#) [Update Mix Design Job Mix Formula](#)

C21 PRODUCT 1 Sand Lime Job Mix Formula (JMF) Control Points Primary Control Sieve

Update Component Values

	C21	PRODUCT 1	Sand	Lime
Blend Percentage %	0	100		100
1"	6	10	<input type="text"/>	<input type="text"/>
3/4"	66	126	<input type="text"/>	<input type="text"/>
1/2"	45	627	<input type="text"/>	<input type="text"/>
3/8"	56	1,274	<input type="text"/>	<input type="text"/>
No. 4	44	613	<input type="text"/>	<input type="text"/>
No. 8	66	353	<input type="text"/>	<input type="text"/>
No. 16	34	216	<input type="text"/>	<input type="text"/>
No. 30	4	247	<input type="text"/>	<input type="text"/>
No. 50	5	<input type="text"/>	<input type="text"/>	<input type="text"/>
No. 100	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No. 200	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Notes(s):

-  The ‘Non Aggregate Component(s)’ are populated from ‘Product Components – Non Aggregate’ section.
-  The ‘Non Aggregate – Sieve Values’ are populated from the ‘Production Facility Product – Mix Design Sieve Sizes’ section.
-  The ‘Aggregate Component(s)’ are populated from ‘Product Components – Aggregate’ section.
-  The ‘Aggregate – Sieve Values’ are populated from the ‘Production Facility Product – Mix Design Sieve Sizes’ section.
-  The user(s) can always override the ‘Aggregate Sieve Values’.
-  The user(s) can add/update the ‘Non-Aggregate Sieve Values’ only when there are no ‘Production Facility Product – Mix Design Sieve Sizes’ defined for the product component.
-  If the mix design is created for ‘Research’ purpose, the user(s) will be able to override both the ‘Aggregate’ and ‘Non-Aggregate’ sieve values (except GSB).
-  The ‘Sand’ and ‘Lime’ are the additional components added on the ‘Product Components’ section.
-  The ‘Control Points’ are populated from ‘Mix Design Spec – Mix Design Sieve Values’ section.
-  The ‘Primary Control Sieve’ is populated from ‘Mix Design Spec – Mix Design Sieve Values’ section.
-  The ‘GSB’ is populated from the production facility profile product.

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5. Click on the ‘Update Mix Design Job Mix Formula’ link.
6. Update the ‘Mix Design Job Mix Formula’ as necessary by overriding an existing value.

Percentage by Weight Total Aggregate Passing Sieves Click to Collapse

	C21	PRODUCT 1	Sand	Lime	Job Mix Formula (JMF)	Control Points	Primary Control Sieve
					Update Component Values		Update Mix Design Job Mix Formula

Update Mix Design Job Mix Formula

1"	10	<input checked="" type="checkbox"/>	Override	<input type="text" value="56"/>
3/4"	126	<input checked="" type="checkbox"/>	Override	<input type="text" value="22"/>
1/2"	627	<input type="checkbox"/>	Override	
3/8"	1,274	<input type="checkbox"/>	Override	
No. 4	613	<input type="checkbox"/>	Override	
No. 8	353	<input type="checkbox"/>	Override	
No. 16	216	<input type="checkbox"/>	Override	
No. 30	247	<input type="checkbox"/>	Override	
No. 50	0	<input type="checkbox"/>	Override	
No. 100		<input type="checkbox"/>	Override	
No. 200		<input type="checkbox"/>	Override	

Note(s):

- The system will provide an indicator when an existing ‘Job Mix Formula’ is overridden.**
- The ‘Mix Design Submitter’ cannot update the ‘Mix Design Job Mix Formula’.**

Percentage by Weight Total Aggregate Passing Sieves Click to Collapse

	C21	PRODUCT 1	Sand	Lime	Job Mix Formula (JMF)	Control Points	Primary Control Sieve
Blend Percentage	0	100					
1"	6	10	Old Value	← 40 56 →	New Value		
3/4"	66	126			126 22		10

Targets

Role(s) – Mix Design Submitter, DMO Asphalt, SMO Asphalt and System Administrator

1. Expand the ‘Targets’ section.
2. Click on the ‘Update’ link.
3. Enter the below fields on the ‘Update’ link:
 - a. Mixing Temp (F)
 - b. Compaction Temp (F)
4. Click on the ‘Save’ button.

The screenshot shows a web application interface. At the top, there is a header 'Targets' with a 'Click to Collapse' link on the right. Below the header, there is a table with the following rows: 'Total Binder Content', 'Ignition Oven Calibration Factor', 'Gmm Correction Factor', 'Spread Rate @ 1\"(lb/yd²)', 'Mixing Temp (°F)', and 'Compaction Temp (°F)'. An 'Update' link is circled in red in the top right corner. A modal window titled 'Update' is open in the center, containing the same list of fields with input boxes. A green arrow points from the 'Update' link to the modal window. At the bottom of the modal window is a 'Save' button.

Note(s):

-  The ‘Ignition Oven Calibration Factor’ is populated from the ‘Asphalt Volumetrics’ section.
-  The ‘Gmm Correction Factor’ is populated from the ‘Asphalt Volumetrics’ section.
-  The ‘Spread Rate’ is calculated by the system.
-  The ‘Total Binder Content’ is populated from the ‘Adjusted’ column of the ‘Asphalt Volumetrics’ section

Additives

Role(s) – SMO Asphalt and System Administrator

1. Expand the ‘Additives’ section.
2. Verify the below ‘Additives’ are displayed on the section:
 - a. Anti-strip Additive (%)
 - b. Warm Mix Additive (%)
 - c. Fibers (%)
 - d. GTR Add4ed (%)
3. Click on the ‘Manage Product Definitions’ link to add additional product definitions under each additive.

	Dosage Rate
Anti-strip Additive (%)	10.00
Warm Mix Additive (%)	15.00
Fibers (%)	20.00
GTR Added (%)	

Manage Product Definitions

Anti-Strip Additive

Fibers

GTR

Warm Mix Additive

Binder

Asphalt Rubber Binder

Save

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4. Click on the ‘Update’ link to add the ‘Dosage Rate’ for the above mentioned additives (**except for GTR as it's calculated**).

The screenshot shows a web interface for managing additives. At the top, there is a header 'Additives [1]' with a 'Click to Collapse' link on the right. Below the header, there is a table with a column labeled 'Dosage Rate'. The table contains five rows: 'Anti-strip Additive (%)', 'Warm Mix Additive (%)', 'Fibers (%)', and 'GTR Added (%)'. To the right of the table, there are two links: 'Update' (circled in red) and 'Manage Product Definitions'. A green arrow points from the 'Update' link to a modal dialog box titled 'Update'. The dialog box has a 'Dosage Rate' section with four input fields: 'Anti-strip Additive (%)', 'Warm Mix Additive (%)', 'Fibers (%)', and 'GTR Added (%)'. A 'Save' button is located at the bottom of the dialog box.

Note(s):

- ✚ The product definitions to be added here must be defined on ‘Materials – Product Definitions’ screen.
- ✚ If more than one product definitions are added for an additive category, the user(s) will be allowed to enter only ‘ONE’ dosage rate per additive category.

Results

Role(s) – System calculated

1. Expand the ‘Results’ section.
2. Verify the calculated results.

Results ⌵ Click to Collapse	
Results	
Total Binder in Recycled Materials (%)	8.5
Total Recycled Binder Replacement (%)	
Total Binder Contribution for all Recycled Materials (%)	6.40

Binders

Role(s) – System calculated

1. Expand the ‘Binders’ section.
2. Verify all the ‘Recycled Materials’ added on the ‘Product Component’ section are populated under the ‘Binders’ section.

Product Components [9] Click to Collapse

[Create Mix Design Component](#) [Manage Additional Components](#)

Order	Product	Brand Name	Product Status	Production Facility	Terminal		
Non-Aggregates							
1	C21 - This is my coarse rock.	4567	In Progress	0820-CMT - JDM Consulting 1 - Plant/Asphalt		Update	Delete
Aggregate							
1	0821-A - Milled Material - Process 1		In Progress	0820 - JDM Consulting 1 - Mine/Aggregate		Update	Delete
2	0821-B - Crushed RAP - Process 1		In Progress	0820 - JDM Consulting 1 - Mine/Aggregate		Update	Delete
3	0821-C - FRAP - Coarse - Process 1		In Progress	0820 - JDM Consulting 1 - Mine/Aggregate		Update	Delete
4	0821-D - FRAP - Fine - Process 1		In Progress	0820 - JDM Consulting 1 - Mine/Aggregate		Update	Delete
5	PRODUCT 1 - Aggregate Product - Process 1	Test # 1	In Progress	0820 - JDM Consulting 1 - Mine/Aggregate		Update	Delete
6	0821-E - Shingles - Process 1		In Progress	0820 - JDM Consulting 1 - Mine/Aggregate		Update	Delete

Binders Click to Collapse

	Percent Binder	Percent Contribution
Milled Material	5.0	1.00
Crushed RAP	7.0	0.70
FRAP (Coarse)	8.0	0.80
FRAP (Fine)	9.0	0.90
Shingles	10.0	3.00

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Note(s):

-  All the information in this section is systematically calculated.
-  The ‘Percent Binder’ is populated from the ‘Production Facility – Product(s)’ added on the ‘Product Component’ section.
-  The ‘Percent Contribution = {Component n Percent Binder} × {Component n Blend Percentage}

The ‘Percent Contribution = {Component n Percent Binder} × {Component n Blend Percentage}

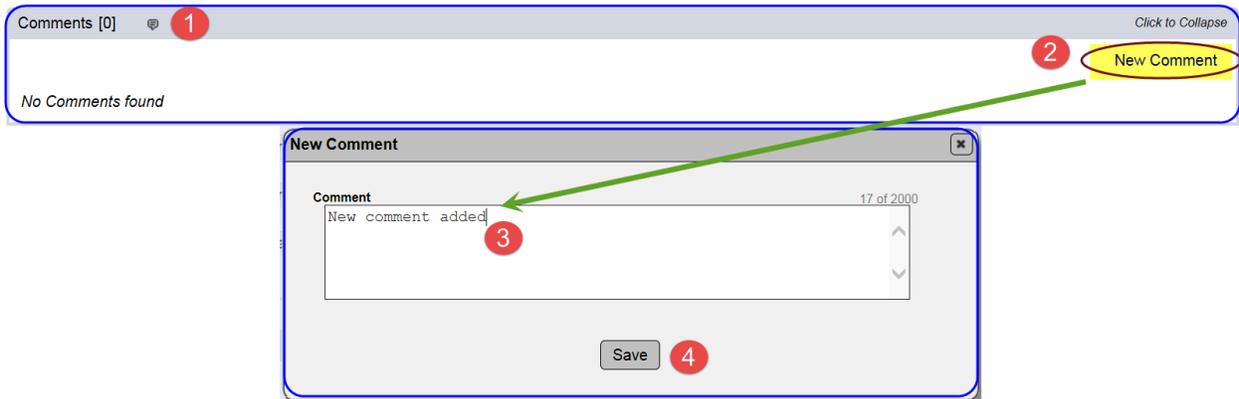
Binders Click to Collapse		
	Percent Binder	Percent Contribution
Milled Material	5.0	1.00
Crushed RAP	7.0	0.70
FRAP (Coarse)	8.0	0.80
FRAP (Fine)	9.0	0.90
Shingles	10.0	3.00

Percentage by Weight Total Aggregate Passing Sieves Click to Collapse									
	Job Mix Formula (JMF)	C21 Control Points	0821-A Primary Control Sieve	0821-B	0821-C	0821-D	PRODUCT 1	0821-E	Sand
Blend Percentage		10	20	10	10	10	10	30	
1"	2 56	6					10		
3/4"	49 22	66	10				126		

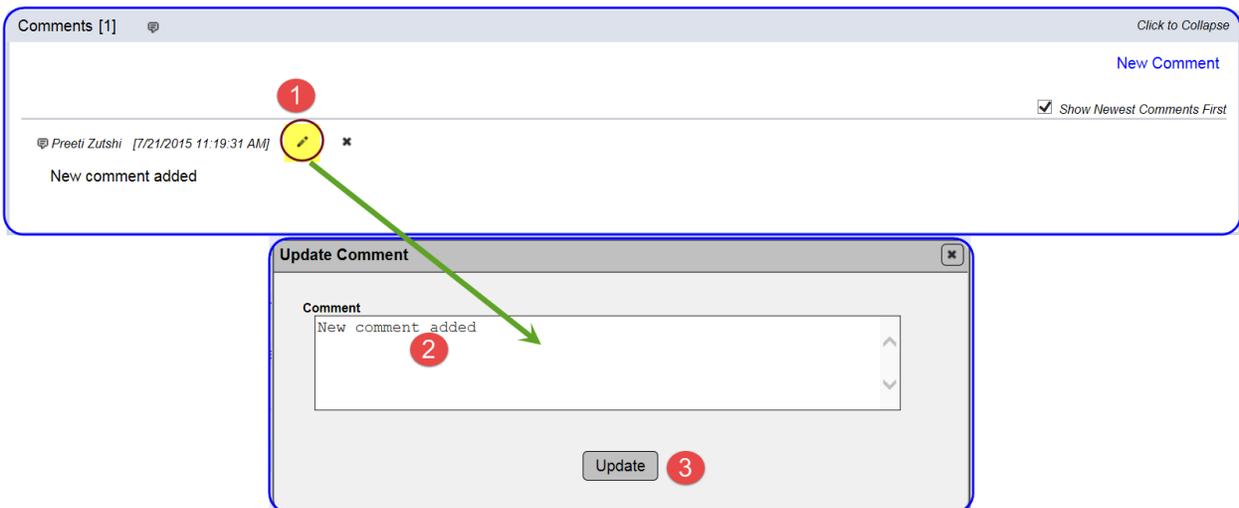
Comments

Role(s) – Mix Design Submitter, DMO Asphalt, SMO Asphalt and System Administrator

1. The users can add and manage comments via the Comment Section.
2. To add any comments to the ‘Mix Design’, click on the ‘Comments’ section and then click on the ‘New Comment’ link.
3. Add a comment.
4. Click on the ‘Save’ button.



5. The comments can be updated. Click on the update comment icon to update the comments.
6. Make the desired updates and click on ‘Update’ button.



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7. Click on the remove comment icon to delete the comment.



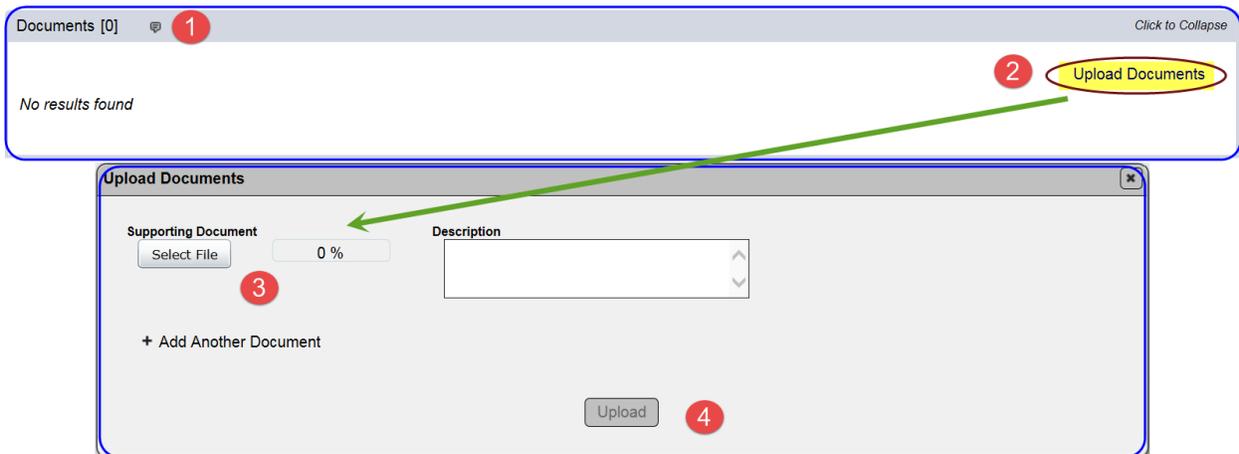
8. Click on the 'Show Newest Comments First' checkbox to view the most recent comments first.



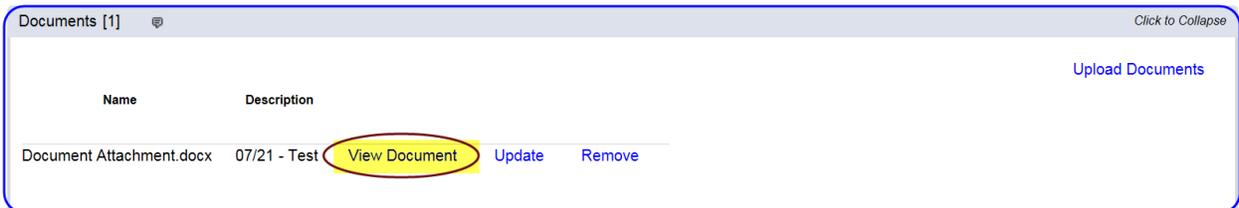
Documents

Role(s) – Mix Design Submitter, DMO Asphalt, SMO Asphalt and System Administrator

1. To upload any documents to the ‘Mix Design’, click on the ‘Documents’ section and then click on the ‘Upload Document’ link.
2. Upload the document.
3. Provide a ‘Description’.
4. Click on the ‘Save’ button.



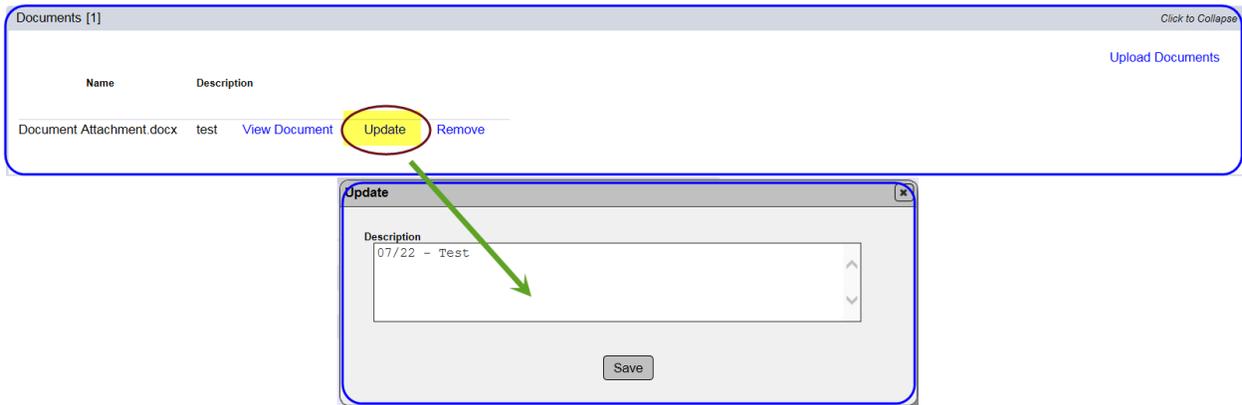
5. Click on the ‘View Document’ link to view the document.



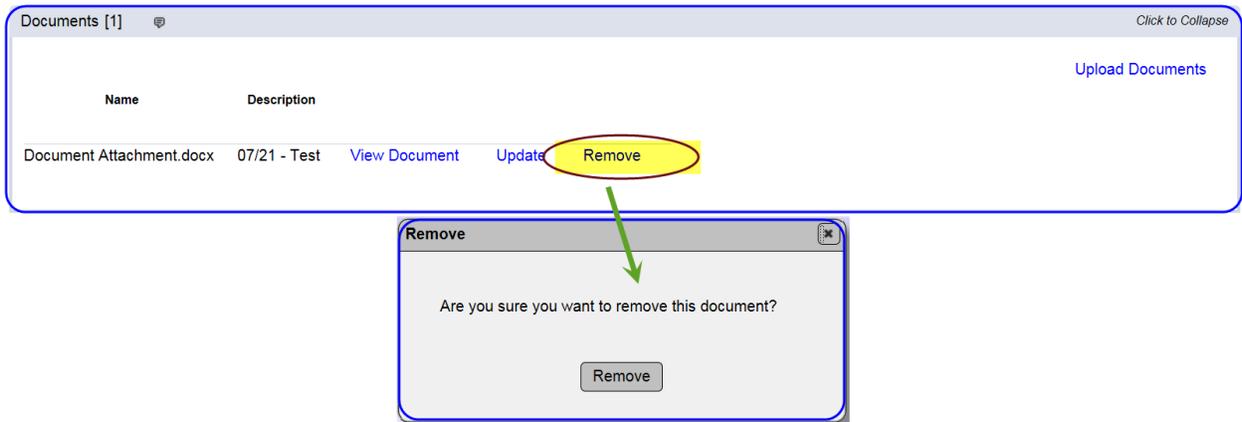
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6. Click on the ‘Update’ link to update the document description.



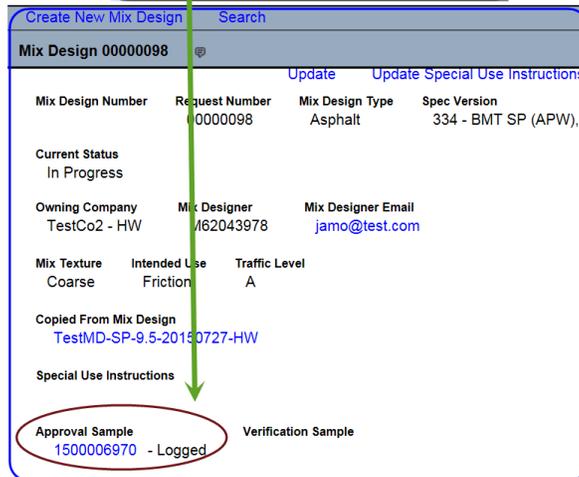
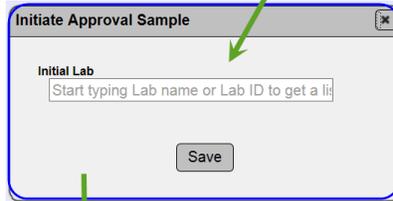
7. Click on the ‘Delete’ link to delete the document(s).



Initiate Approval Sample

Role(s) – Mix Design Submitter and System Administrator.

1. Click on the ‘Initiate Approval Sample’ link.
2. Enter the ‘Initial Lab’ responsible for performing the mix design tests.
3. Click on the ‘Sample ID’ to navigate to the sample.
4. Perform the mix design tests from the ‘Sample Login’ and navigate back to Mix Design’.



Note(s):

- The ‘Initiate Approval Sample’ link will be available only when the ‘Approval Sample Level’ is defined on the ‘Asphalt Mix Design Spec’.**

The screenshot shows a web form titled "Create New Spec". The form contains the following fields and controls:

- Sample Category?** with radio buttons for Project, Program, Research, and Mix Design (selected).
- Is for Research?** with a checkbox.
- Material ID?** with a text input field containing "0822-Asphalt - Asphalt Mix Design # 1".
- Mix Design Type** with a dropdown menu set to "Asphalt".
- Approval Sample Level** and **Verification Sample Level** with dropdown menus.
- Owner (Technical Unit)** with a dropdown menu set to "Bituminous".
- Contact Email** with a text input field containing "CO-MACDEV".
- A **Create** button at the bottom right.

A red box highlights the "Asphalt Mix Design Spec" text, and another red box highlights the "Approval Sample Level" and "Verification Sample Level" dropdown menus.

- On sample login the ‘Data Entry’ and ‘Data Reviewer’ users(associated to the lab company) can perform the below actions:**
 - **Submit the approval sample for lab testing.**
 - **Acknowledge the approval sample receipt if required.**
 - **Perform the test(s)**
 - **Finalize the approval sample**

Asphalt Volumetrics - Calculated & Adjusted

Role(s) – SMO Asphalt and System Administrator.

1. Expand the ‘Asphalt Volumetrics’ section.
2. Verify the asphalt volumetric fields are populated from the mix design tests performed on the ‘Approval Sample’.
3. Click on the ‘Update link.
4. Update the below information as necessary on the ‘Adjusted’ column and click on ‘Save’ button:
 - a. Total Binder Content
 - b. Gmb at Ndes
 - c. Gmm
 - d. Gsb
 - e. Gmb at Nini

The screenshot shows the 'Asphalt Volumetrics' interface. It features a table with columns for 'Calculated', 'Adjusted', and 'SMO'. The table lists various volumetric parameters. An 'Update' button is circled in red in the top right corner. A green arrow points from this button to the 'Adjusted' column of the 'Update' dialog box, which is overlaid on the table. The dialog box contains input fields for 'Adjusted' and 'SMO' values for each parameter.

	Calculated	Adjusted	SMO
Total Binder Content		55.0	
Gmb at Ndes	2.395	2.395	
Gmm	-0.522	-0.522	
Gsb	25.900	25.900	25.900
Gmb at Nini			

	Adjusted	SMO
Total Binder Content	<input type="text" value="55.0"/>	<input type="text"/>
Gmb at Ndes	<input type="text"/>	
Gmm	<input type="text"/>	
Gsb	<input type="text"/>	25.900
Gmb at Nini	<input type="text"/>	

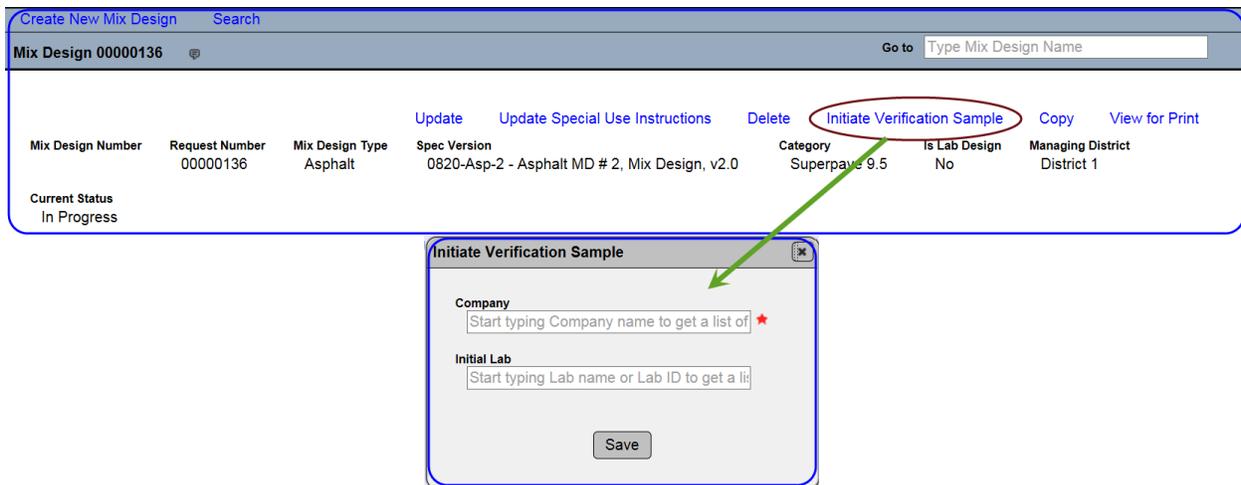
Note(s):

-  Only 'Adjusted' column can be updated.
-  The rest of the fields on the 'Adjusted' column will be calculated.

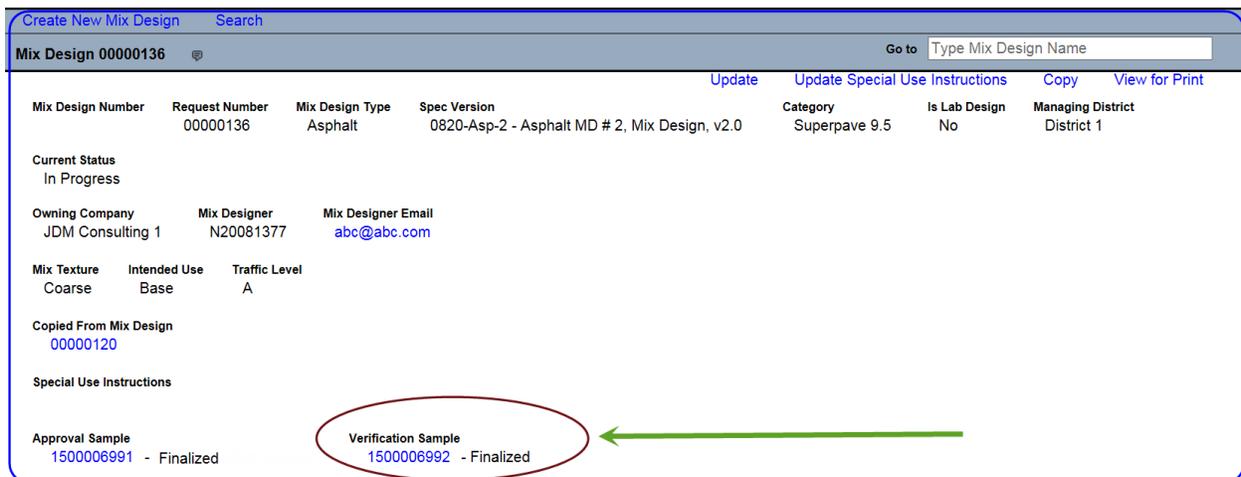
Initiate Verification Sample

Role(s) – SMO Asphalt and System Administrator

1. Click on the ‘Initiate Verification Sample’ link.
2. Enter the below information on ‘Initiate Verification Sample’ screen:
 - a. Company
 - b. Initial Lab
3. Click on the ‘Save’ button.



4. Click on the ‘Sample ID’ to navigate to the sample.
5. Perform the mix design tests from the ‘Sample Login’ and navigate back to Mix Design’.



Note(s):

- The ‘Initiate Verification Sample’ link will be available only when the ‘Verification Sample Level’ is defined on the ‘Asphalt Mix Design Spec’.**

The screenshot shows a web form titled "Create New Spec". The form contains the following fields and controls:

- Sample Category ?**: Radio buttons for Project, Program, Research, and Mix Design (selected).
- Is for Research?**: A checkbox that is currently unchecked.
- Material ID ?**: A text input field containing "0822-Asphalt - Asphalt Mix Design # 1".
- Mix Design Type**: A dropdown menu with "Asphalt" selected.
- Approval Sample Level** and **Verification Sample Level**: Two dropdown menus, both currently empty. These two fields are circled in red in the image.
- Owner (Technical Unit)**: A dropdown menu with "Bituminous" selected.
- Contact Email**: A text input field containing "CO-MACDEV".
- Create**: A button at the bottom right of the form.

A red box highlights the text "Asphalt Mix Design Spec" in the upper right area of the form.

On the ‘Sample Login’:

- **Submit the verification sample for lab testing.**
- **Acknowledge the verification sample receipt if required.**
- **Perform the test**
- **Finalize the verification sample**
- **Navigate back to Mix Design module**

Asphalt Volumetrics - SMO

Role(s) – SMO Asphalt and System Administrator.

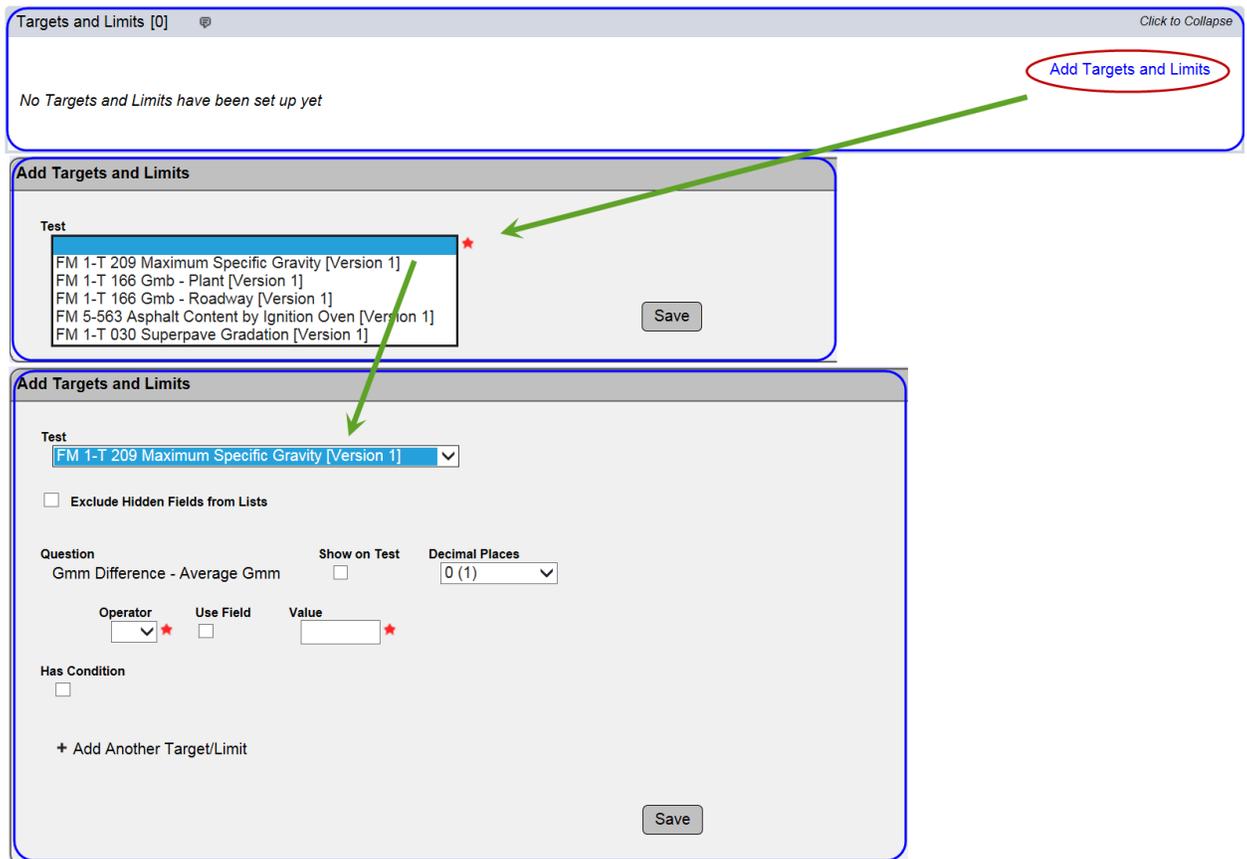
1. Expand the ‘Asphalt Volumetrics’ section.
2. Verify the asphalt volumetric fields are populated from the mix design tests performed on the ‘Verification Sample’.

Asphalt Volumetrics		Click to Collapse	
	Calculated	Adjusted	SMO
Total Binder Content		10.0	
Gmb at Ndes	2.395	5.000	2.394
Gmm	-0.522	0.550	2.488
Gsb	25.900	10.000	25.900
Gmb at Nini	2.395	10.000	2.253
Gse		0.523	
Percent Air Voids (Va)	558.8	-809.1	3.8
Percent VMA at Ndes		55.0	
Percent VFA at Ndes		1,571	
Pba (%)		-186.68	
Pbe (%)		178.0	
Dust/Asphalt Ratio		0.0	
Percent Gmm at Nini	-458.8	1,818.2	90.6
Fine Aggregate Angularity	-14,429.06	-14,429.06	40.77
Moisture Susceptibility (TSR)			
Ignition Oven Calibration	4.80	4.80	4.87

Targets and Limits

Role(s) – SMO Asphalt and System Administrator

1. Expand the ‘Targets and Limits’ section.
2. Click on the ‘Add Targets and Limits’ link.
3. Select a test from the ‘Test’ drop down list.
4. Enter the below information on the ‘Add Targets and Limits’ screen and then click on the ‘Save’ button.
 - a. Test
 - b. Exclude Hidden Fields from Lists
 - c. Question
 - d. Show on Test
 - e. Decimal Place
 - f. Operator
 - g. Use Field
 - h. Value
 - i. Has Condition



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5. Click on the ‘Update’ link to update a ‘Target & Limit’.
6. Make the desired updates and click on ‘Save’ button.

Targets and Limits [1]

Target/Limit	Condition	Show on Test	
FM 5-563 Asphalt Content by Ignition Oven [Version 1]			
[End Basket + Sample Weight] >= 100		No	Update Remove

Update Target for Values - End Basket + Sample Weight @

Exclude Hidden Fields from Lists

Question: Values - End Basket + Sample Weight Show on Test: Decimal Places: 0 (1) ▼

Operator: >= ▼ Use Field: Value: 100

Operator: ▼

Has Condition:

[Save](#)

7. Click on the ‘Remove’ link to remove a ‘Target & Limit’.

Targets and Limits [1]

Target/Limit	Condition	Show on Test	
FM 5-563 Asphalt Content by Ignition Oven [Version 1]			
[End Basket + Sample Weight] >= 100		No	Update Remove

Remove

Are you sure you want to delete this Targets and Limits?

[Delete](#)

Mix Design- Asphalt – “How To” Checklist

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Note(s):

 The ‘Test’ dropdown is populated from the ‘Mix Design Eligible Targets’ section on ‘Mix Design Spec’.



The screenshot displays the 'Mix Design Eligible Targets' section of a software interface. It features a 'View Options' section with radio buttons for 'Just Base Set and Variations' (selected) and 'All Possible Combinations'. Below this is a 'Default for All Combinations' section with a 'Mix Design Spec' dropdown menu. A table lists various tests with their corresponding questions and company can sets. An 'Add Targets and Limits' dropdown menu is open, showing a list of tests including 'FM 1-T 209 Maximum Specific Gravity [Version 1]', 'FM 1-T 166 Gmb - Plant [Version 1]', 'FM 1-T 166 Gmb - Roadway [Version 1]', 'FM 5-563 Asphalt Content by Ignition Oven [Version 1]', and 'FM 1-T 030 Superpave Gradation [Version 1]'. A 'Save' button is visible at the bottom right of the dropdown menu.

Test	Question	Company Can Set
FM 1-T 209 Maximum Specific Gravity [Version 1]	Gmm Difference: Average Gmm	
FM 1-T 166 Gmb - Plant [Version 1]	Average: Average Gmb	
FM 1-T 166 Gmb - Roadway [Version 1]	Core information: Gmb	
FM 5-563 Asphalt Content by Ignition Oven [Version 1]	Values: Percent Asphalt Content	
FM 1-T 030 Superpave Gradation [Version 1]	No. 200: Percent Passing	
FM 1-T 030 Superpave Gradation [Version 1]	No. 8: Percent Passing	

Update Status

Role(s) – Mix Design Submitter, SMO Asphalt, DMO Asphalt and System Administrator.

1. Click on the ‘Update Status’ link and select the appropriate status.

Note(s):

- ✚ **The below statuses are applicable for ‘Asphalt – Mix Design’:**
 - MD Submitter → In Progress
 - MD Submitter → Submit to DMO → Submitted to DMO
 - MD Submitter → Submit to SMO → Submitted to SMO
 - DMO Asphalt → Begin DMO Review → DMO Reviewed
 - DMO Asphalt → Submit to SMO → Submitted to SMO
 - SMO Asphalt → Begin SMO Review → SMO Reviewed
 - SMO/DMO Asphalt → Return for More Information → Additional Information Required
 - SMO Asphalt → Approve → Approved
 - SMO/DMO Asphalt → Reject → Rejected
 - SMO Asphalt → Cancel → Cancelled
 - System → Expired

Example: Role → Status from ‘Update Status’ link → Status derived

- ✚ **The below statuses will be generated by the system without any action performed by any user:**
 - Expired

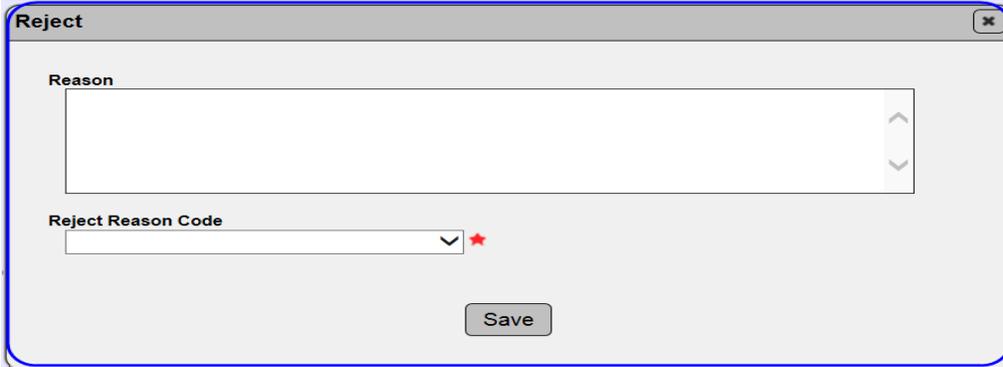
- ✚ **The ‘Reason’ is required when:**
 - Mix Design is ‘Rejected’.
 - Mix Design is ‘Cancelled’.
 - Mix Design is opened and set to ‘In Progress’ status.

- ✚ **Submit for SMO/DMO:**
 - The user(s) can submit a mix design only when:
 - Calculated values for the below fields on the ‘Asphalt Volumetrics’ section are within the range defined on the ‘Mix Design Spec - Mix Design Volumetrics Limits’ section:
 - Dust/Asphalt Ratio
 - Fine Aggregate Angularity
 - Percent Gmm at Nini
 - Percent Air Void
 - Percent VFA at Ndes
 - Percent VMA at Ndes
 - The ‘Sieve Values’ (any value) on the ‘Percentage by Weight Total Aggregate Passing Sieves’ section is within the range of ‘Control Points’ defined on the ‘Mix Design Spec – Mix Design Sieve Values’ section.

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 **Reject:**

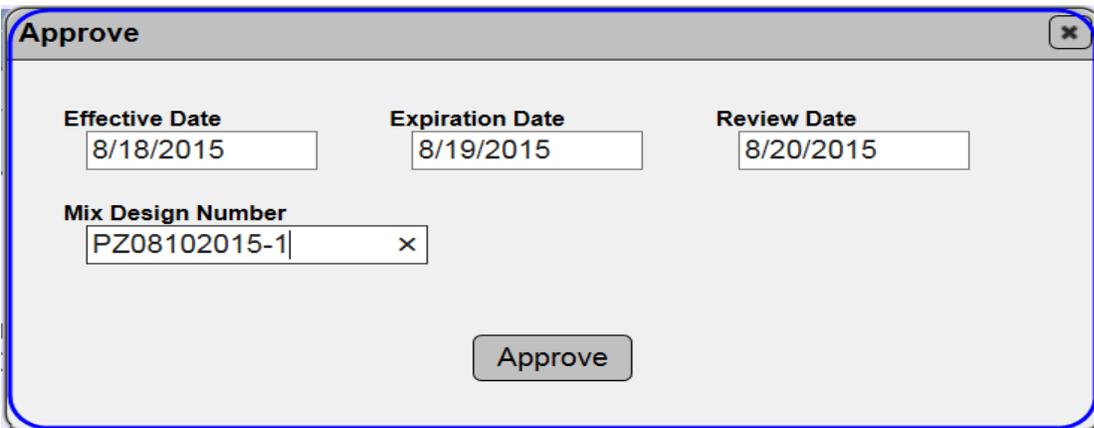
- *The user(s) must provide the below information while rejecting an asphalt mix design:*
 - *Reason*
 - *Reject Reason Code*



The 'Reject' dialog box has a title bar with a close button. It contains a text area labeled 'Reason' with a scroll bar. Below it is a dropdown menu labeled 'Reject Reason Code' with a red asterisk to its right. At the bottom center is a 'Save' button.

 **Approve:**

- *The user(s) must provide the below information while approving a mix design:*
 - *Effective Date*
 - *Expiration Date*
 - *Review Date*
 - *Mix Design Number*

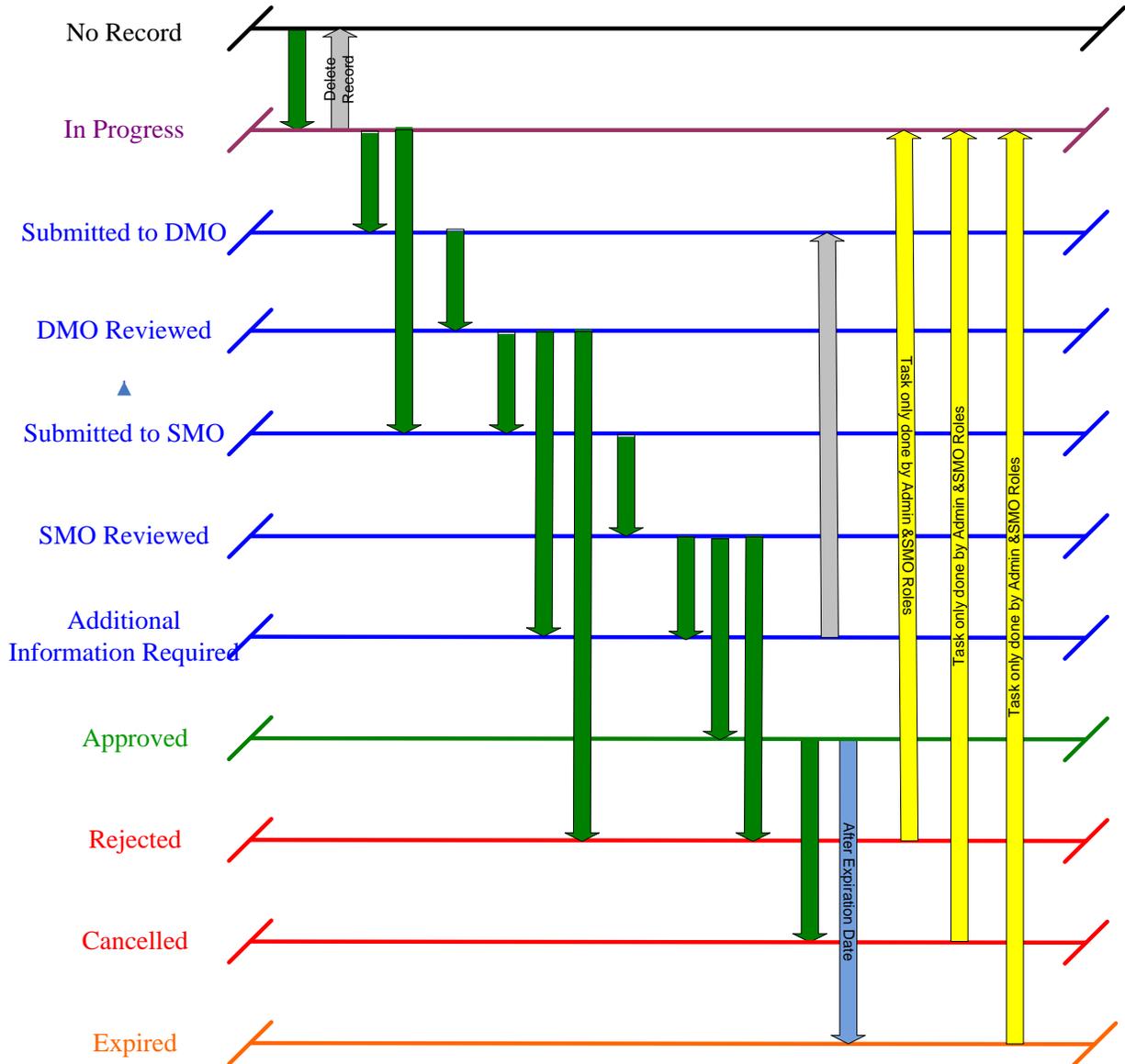


The 'Approve' dialog box has a title bar with a close button. It contains four input fields: 'Effective Date' with value '8/18/2015', 'Expiration Date' with value '8/19/2015', 'Review Date' with value '8/20/2015', and 'Mix Design Number' with value 'PZ08102015-1' and a clear button (x). At the bottom center is an 'Approve' button.

 **The ‘Asphalt Mix Design Status Lifecycle’ is defined in the below screen-print:**

- *Green arrows are normal business flows that moves the process forward*
- *Gray arrows are normal business flows that move the process to a previous status*
- *Yellow arrows are only done by the Administrative staff or other indicated Roles – not normal business flows*
- *Blue Arrows are system driven and be managed as such*

Asphalt Mix Design Request Entity Life Cycle



Update Special Use Instructions

Role(s) - DMO Asphalt, SMO Asphalt and System Administrator.

1. Click on the ‘Update Special Use Instruction’ link.
2. Enter the ‘Special Use Instructions’.
3. Click on the ‘Save’ button.

The screenshot illustrates the process of updating special use instructions for a specific mix design. It shows the main data table, a modal window for editing, and the resulting record view.

Mix Design Number	Request Number	Mix Design Type	Spec Version	Category	Is Lab Design	Managing District
00000098	00000098	Asphalt	334 - BMT SP (APW), Mix Design, v2.0	Superpave 9.5	No	SMO

Update Special Use Instructions

Special Use Instructions
This Special Use Instruction was created for Asphalt Mix Design

Save

Mix Design 00000098

Update Mix Design Special Use Instructions was successful

00000098 Asphalt 334 - BMT SP (APW), Mix Des

Current Status
In Progress

Owning Company: TestCo2 - HW
Mix Designer: M62043978
Mix Designer Email: jamo@test.com

Mix Texture: Coarse
Intended Use: Friction
Traffic Level: A

Copied From Mix Design
[TestMD-SP-9.5-20150727-HW](#)

Special Use Instructions
This Special Use Instruction was created for Asphalt Mix Design

Approval Sample: 1500006970 - Logged
Verification Sample

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Copy

Role(s) – Mix Design Submitter and System Administrator

1. Click on the ‘Copy’ link.
2. Answer the ‘Do you want the new Mix Design to be associated with this Mix Design?’ question as “NO” and click on the ‘Save’ button.

The screenshot shows a web application interface for Mix Design. At the top, there are links for 'Create New Mix Design' and 'Search'. Below this is a header for 'Mix Design 00000098' with a 'Go to' search field. A table of actions is displayed: Update, Update Special Use Instructions, Delete, Initiate Verification Sample, Update Status, Copy (circled in red), and View for Print. Below the actions, a table shows details for Mix Design 00000098: Request Number 00000098, Mix Design Type Asphalt, Spec Version 334 - BMT SP (APW), Mix Design, v2.0, Category Superpave 9.5, Is Lab Design No, and Managing District SMO. The current status is 'In Progress'. A dialog box titled 'Copy' is open, asking 'Do you want the new Mix Design to be associated with this Mix Design?' with a dropdown menu set to 'No' and a 'Save' button.

Result:

The screenshot shows the result of the 'Copy' action. The header now displays 'Mix Design 00000099'. A message states 'Copy Mix Design was successful'. The table of actions is updated: Update, Update Special Use Instructions, Delete, Initiate Approval Sample, and Initiate Verification Sample. The table details for Mix Design 00000099 are: Request Number 00000099, Mix Design Type Asphalt, Spec Version 334 - BMT SP (APW), Mix Design, v2.0, and Category Superpave 9.5. The current status is 'In Progress'. The owning company is TestCo2 - HW, the mix designer is M62043978, and the mix designer email is jamo@test.com. The mix texture is Coarse, the intended use is Friction, and the traffic level is A. A link 'Copied From Mix Design 00000098' is circled in red. The special use instructions state: 'This Special Use Instruction was created for Asphalt Mix Design'.

Mix Design- Asphalt – “How To” Checklist

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3. Answer the ‘Do you want the new Mix Design to be associated with this Mix Design?’ question as “YES” and click on the ‘Save’ button.

The screenshot shows a web application interface for managing Mix Designs. At the top, there are links for 'Create New Mix Design' and 'Search'. Below this is a header for 'Mix Design 00000099' with a 'Go to' search box. A row of action buttons includes 'Update', 'Update Special Use Instructions', 'Delete', 'Initiate Approval Sample', 'Initiate Verification Sample', 'Update Status', 'Copy', and 'View for Print'. The 'Copy' button is circled in red. Below the main record is a table with the following data:

Mix Design Number	Request Number	Mix Design Type	Spec Version	Category	Is Lab Design	Managing District
	00000099	Asphalt	334 - BMT SP (APW), Mix Design, v2.0	Superpave 9.5	No	SMO

Below the table is a 'Copy' dialog box with the question 'Do you want the new Mix Design to be associated with this Mix Design?' and a 'Yes' dropdown menu. A green arrow points from the 'Copy' button in the main interface to the 'Yes' dropdown in the dialog box. A 'Save' button is located at the bottom of the dialog box.

Note(s):

-  **A mix design must be in ‘Approved’ status to be associated to a new Mix Design.**

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Open Mix Design for Corrections

Role(s) – DMO Asphalt, SMO Asphalt and System Administrator

1. Click on the ‘Open for Corrections’ link.
2. Enter a reason in the Reason field on the ‘Open for Corrections’ screen.
3. Make the desired updates.

Mix Design 08192015

Go to

[Update Special Use Instructions](#) [Update Status](#) [Open for Corrections](#) [Copy](#) [View for Print](#)

Mix Design Number	Request Number	Mix Design Type	Spec Version	Category	Is Lab Design	Managing District
08192015	00000104	Asphalt	334 - BMT SP (APW), Mix Design, v2.0	Superpave 9.5	No	SMO

Current Status: Approved

Open for Corrections

Reason: 30 of 2000
Mix Design Number modification

Effective Date	Expiration Date	Review Date
8/19/2015	8/21/2015	8/21/2015

Mix Texture	Intended Use	Traffic Level
Coarse	Friction	A

Copied From Mix Design
[TestMD-SP-9.5-20150727-HW](#)

Special Use Instructions
Mix Design Number modification

Note(s):

 *These corrections can be made only when the ‘Asphalt Mix Design’ is in ‘Approved’ status.*

Close Mix Design for Corrections

Role(s) – DMO Asphalt, SMO Asphalt and System Administrator

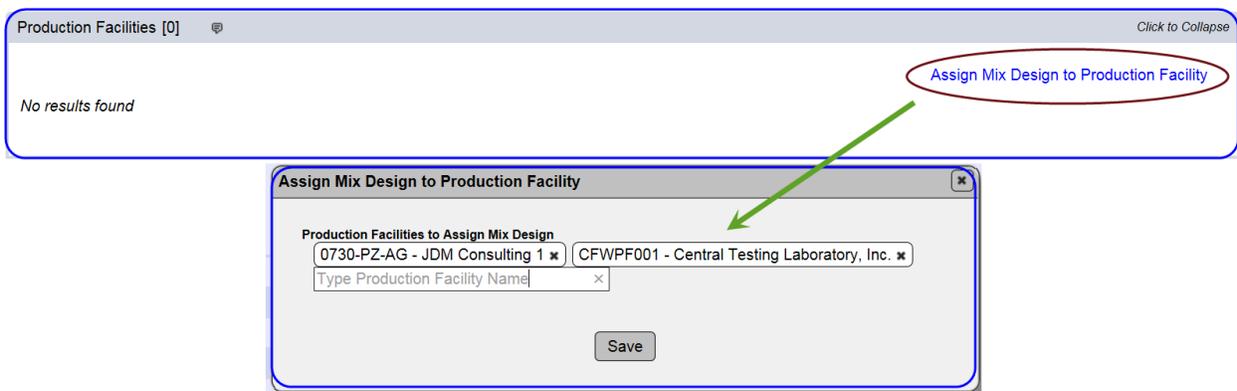
1. Click on the ‘Close for Corrections’ link.
2. The mix design opened for correction can be closed once all the desired updated are made.

			Update	Update Special Use Instructions	Update Status	Close for Corrections	Copy	View for Print
Mix Design Number 08192015	Request Number 00000104	Mix Design Type Asphalt	Spec Version 334 - BMT SP (APW), Mix Design, v2.0	Category Superpave 9.5	Is Lab Design No	Managing District SMO		
Current Status Approved		[Currently being Corrected by Preeti Zutshi]						

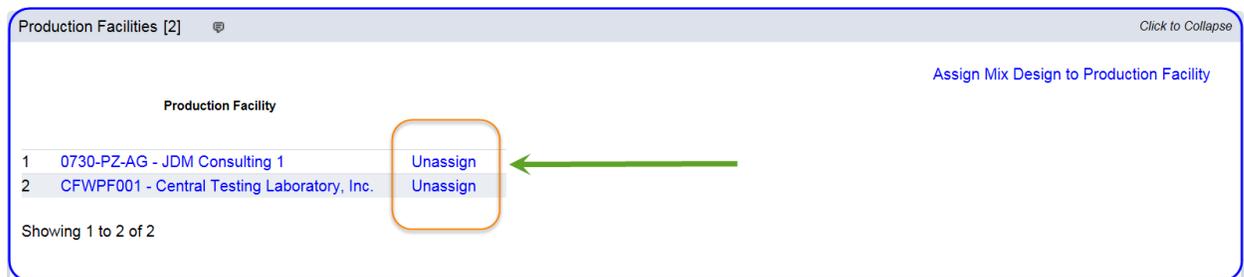
Production Facilities

Role(s) – DMO Asphalt, SMO Asphalt and System Administrator

1. Expand the ‘Production Facilities’ section.
2. Click on the ‘Assign Mix Design to Production Facility’ link.
3. On the ‘Assign Mix Design to Production Facility’ screen, select one or more facilities to assign mix design.
4. Click on the ‘Save’ button.



5. Click on the ‘Unassign’ link to break the production facility-mix design assignment.



View for Print

Role(s) – Mix Design Submitter, DMO Asphalt, SMO Asphalt and System Administrator

1. Click on the ‘View for Print’ link to print the asphalt mix design.

Mix Design Number	Request Number	Mix Design Type	Spec Version	Update	Update Special Use Instructions	Update Status	Close for Corrections	Copy	View for Print
08192015	00000104	Asphalt	334 - BMT SP (APW), Mix Design, v2.0			Superpave 9.5	No		
Current Status		[Currently being Corrected by Preeti Zutshi]							
Approved									

Note(s):

 **The ‘Asphalt Mix Design Report - Page 2’ is not complete yet. This fix will be published soon.**