Kentucky TRNS*PORT Information Series SiteManager Materials Module

SUPERPAVE Mix Design Window – Superpave (MIXPACK) QCQA Spreadsheet

General Description

This is one of the eight spreadsheet disciplines that KYTC will use for QC/QA program tracking. These spreadsheets allow data to be received by KYTC from Producers/Suppliers outside the department, and automatically loaded (with error checking) into the SiteManager system by the Spreadsheet Applet application developed by KYTC ITI. The eight disciplines include:

Short Name	Description
MIXPACK	Asphalt Mix Design
AMAW	Asphalt Mixtures Acceptance Workbook QC/QA
CONCMIX	Concrete Mix Design
CONCPVMT	Concrete Pavement QC/QA
CONCSTRT	Structural Concrete QC/QA
AGG	Aggregate QC/QA
DENSITY	Moisture-Density QC/QA
STRIPING	Striping QC/QA

The user initiates the Applet and directs the application as to the location of the spreadsheet, and the Applet then attempts to successfully load the spreadsheet. If any errors are encountered, the load is aborted and the specific errors returned to the user. Once successfully loaded into SiteManager, the Applet archives a copy of the spreadsheet for audit trail purposes (as described in TBD).

NOTE: The RE's should not procedurally do any loading of MIXPACK spreadsheets; these should actually be done by the DME's or by Central Office personnel.)

Spreadsheet Applet Executable Location

TBD

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Spreadsheet Location

TBD

Procedure

The MIXPACK Asphalt Mix Design Spreadsheet will populate two functional areas of the SiteManager application via the Spreadsheet Applet application:

- The Superpave Mix Design window records
- The Sample Information window records

This document describes the procedures for entering data into the spreadsheet that will be stored into the Superpave Mix Design related records in SiteManager. (The Sample Information records loaded by this spreadsheet are described as part of the "Superpave (MIXPACK) Sample Information Field Handout for Applet" procedure.) All records loaded by this spreadsheet will be protected (i.e., the Mix Design will be Approved and the Sample will be Authorized).

NOTE: Any changes necessary to the data will need to be done by using the "replacement" function available with the Spreadsheet Applet. This capability will be available for this discipline.

This spreadsheet will load mix design approval related data into the Superpave related table records.

Refer to the MIXPACK End-User Procedure for the specific procedures required by the end-user to use this spreadsheet.

The following tables describe the fields loaded on the database, which are visible when viewing on the window, and the source, location, and procedures for each field from the KYTC perspective.

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DESCRIPTION FOLDER TAB (t_superpave)

Field Name	Description Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Mix ID (mix_id)	Mix Design ID for the Superpave mix design established on the Asphalt Mix (MIXPACK) Spreadsheet. This field is required and must be unique (even if the Contractor is using the same Mix Design on multiple contracts). This field is 15 characters long.	Free-form	KYTC Spreadsheet Approver	Mix Design ID established on the Spreadsheet. This field is required and must be unique. KYTC Central Office Mix Designs will use DDYYSSSS: DD is the District (Central Office is 00) YY is the Year SSSS is the Mix ID. < Design Data.MIX ID NUM.>
Design Type (dsn_t)	Identifies the type of mix design. This is automatically populated as Superpave.	Code Table	Auto-populated by Spreadsheet	This is a data check field; Design Type must exist. This field will be automatically populated on the Spreadsheet as SUP (Superpave).
Material Code (matl_cd)	The transportation agency-defined material code for the SUPERPAVE mix that is submitted with the Spreadsheet.	Free-form	End-User (Auto- populated by the spreadsheet based on the selection of TYPE OF MIX)	This field should be populated with the appropriate Mix Design Approval Material Code. This is a data check field; Material Code must exist and must be actively produced by the P/S. This field will be automatically populated on the Spreadsheet by the Contractor by selecting the TYPE OF MIX). < Design Data.MIX MAT. CODE>

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Producer Supplier Code (prodr_supp_ cd)	The transportation agency-defined Producer/Supplier (P/S) Code for a source/location of the Asphalt Plant that is going to produce the Mix Design.	Free-form	End-User	This is a data check field; P/S must exist and must be active. < Design Data.CNTR. PROD. #>
Designer Name (dsnr_nm)	The name of the designer responsible for the SUPERPAVE mix. This is the Contractor's Technician that submitted the sample.	Free-form	End-User	The contractor person who is submitting the mix design for approval. User must be an active Sampler (i.e., Material User). The Approver must have active "SUPERPAVE MIX DESIGN TECHNOLOGIST" Sampler qualification (and therefore have a SM User ID) for a Material Category of "ASPHALT-MIX DESIGN". <design by="" data.="" submitted=""></design>
AC Type (asph_cem_t)	Identifies the type of asphalt cement.	Code Table	End-User (Auto- populated by the spreadsheet based on the selection of TYPE OF MIX)	This is a data check field; AC Type must exist. This field will be automatically populated on the Spreadsheet by the Contractor by selecting the TYPE OF MIX). <design data.binder="" grade=""></design>
Mix Type (mix_dsn_txt_t)	This is the type of mix designed (e.g., A, D, etc.).	Code Table	End-User	This is a data check field; Type of Mix must exist. <design data.type="" mix="" of=""> (Actually <chart data."m48"=""></chart></design>

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Effective Date (effdt)	Effective date for the SUPERPAVE mix.	Date	KYTC Spreadsheet Approver	This will be the date the mix is released (i.e., approved) for use.
Termination	Date the SUPERPAVE mix is no longer available for	N/A	N/A	<design data.date="" rel.=""></design> Applet will not use this field for this discipline.
Date (term_dt)	use. KYTC will not use this field.	IN/A	N/A	Applet will not use this field for this discipline.
Approved Date (apprd_dt)	Authorization date of the SUPERPAVE mix.	Date	KYTC Spreadsheet Approver (Auto- populated by Spreadsheet based on entered Release Date)	This will be the date the mix is released (i.e., approved) for use. <design data.date="" rel.=""></design>
Approved By User ID (apprd_by_uid)	The person who approves the SUPERPAVE mix.	Free-form	KYTC Spreadsheet Approver	This is the KYTC person approving the Mix Design. User must be an active Security User. The Approver must have active "SUPERPAVE MIX DESIGN TECHNOLOGIST" Sampler qualification (and therefore have a SM User ID) for a Material Category of "ASPHALT-MIX DESIGN". <design by="" data.approved=""></design>

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PROPERTIES FOLDER TAB (t_superpave)

Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
N (Initial) (init_n_dnsty_ m)	The initial compaction gyrations of the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. <design data.gyration="" data.nini=""></design>
N (Max) (max_n_dnsty _m)	The maximum compaction gyrations of the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. <design data.gyration="" data.nmax=""></design>
N (Design) (dsn_n_dnsty _m)	The design compaction gyrations of the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. <design data.gyration="" data.ndes=""></design>
% Gmm @ N (Init) (init_n_gmm_ p)	The percent of solids by volume @ initial compaction gyrations of the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. <design @="" data.="" design="" gmm="" ninitial="" property.%=""></design>
% Gmm @ N (Max) (max_n_gmm _p)	The percent of solids by volume @ maximum compaction gyrations of the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. Calculated based on data entered by contractor. Calculated based on data entered by contractor.

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Equiv Single Axle Loads (esals_nbr)	The ESAL Class. Number of load axle equivalent weight repetitions that pavement can endure before damage occurs.	Free-form	End-User (Auto- populated by the spreadsheet based on the selection of TYPE OF MIX)	This field will be automatically populated on the Spreadsheet by the Contractor by selecting the TYPE OF MIX). The spreadsheet will assign "0" (i.e., zero) to the "N/A" or " " (i.e., blank) Classes. <design class="" data.="" esal=""></design>
Optimum AC % by Tot Weight (opt_ac_pct_t ot_wt)	The asphalt content that will be used to produce the specified bituminous mix in the field. This value will include virgin asphalt cement and any provided by the RAP, if applicable.	Free-form	End-User	Calculated based on data entered by contractor. <design ac="" data.="" design="" property.%=""></design>
Dust Proportion (dust_proprtn _p)	The percent of material passing 0.075-mm sieve to the effective asphalt binder content.	Free-form	End-User	Calculated based on data entered by contractor. Cesign Data.Design Property.D/A Ratio>
VMA % (vma_p)	The ratio of the percentage of voids in the mineral aggregate for the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. <design data.design="" property.%="" vma=""></design>
VFA % (vfa_p)	The percentage of VMA filled by the effective asphalt for the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. <design data.design="" property.%="" vfa=""></design>
Lottman TSR (lotmn_tsr_m)	The tensile strength ratio for the specified SUPERPAVE mixx.	Free-form	End-User	Calculated based on data entered by contractor. <design additive="" data.design="" property.%="" tsr="" without=""></design>

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Sand Equivalent (sand_equiv_t st)	The ratio of material passing the No. 30 sieve and retained on the No. 200 sieve to material passing the No. 8 sieve and retained on the No. 200 sieve.	Free-form	End-User	Calculated based on data entered by contractor. <design (%)<="" (se)="" content="" data.design="" property.clay="" td=""></design>
Maximum Specific Gravity (max_spc_gr)	The maximum specific gravity for the specified SUPERPAVE mix.	Free-form	End-User	Calculated based on data entered by contractor. <design data.design="" gravity="" property.maximum="" specific=""></design>
Bulk Specific Gravity (bulk_spc_gr_ m)	Bulk specific gravity of the SUPERPAVE mix design @ optimum AC %.	Free-form	End-User	Calculated based on data entered by contractor. (Unit Weight (lb/ft3) divided by 62.4.) Pesign Data.Design Property.Unit Weight (lb/ft3)>
Mixing Temperature (mix_temp)	The mixing temperature for the specified SUPERPAVE mix.	Free-form	End-User (Auto- populated by the spreadsheet based on the selection of TYPE OF MIX)	This field will be automatically populated on the Spreadsheet by the Contractor by selecting the TYPE OF MIX). This will be assigned by the spreadsheet as the first three characters (to the left of the "/") in the MIX/COMP TEMP field. <design comp="" data.mix="" temp=""></design>
Mixing Temperature Units Type mix_temp_unt)	The unit of measure for the associated mixing temperature value, degrees Fahrenheit.	Code Table	Auto-populated by Spreadsheet	This is a data check field; Must exist in TEMP code table.

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Compaction Temp (cmpct_temp)	The design compaction temperature for the specified SUPERPAVE mix.	Code Table	End-User (Auto- populated by the spreadsheet based on the selection of TYPE OF MIX)	This field will be automatically populated on the Spreadsheet by the Contractor by selecting the TYPE OF MIX). This will be assigned by the spreadsheet as the first three characters (to the right of the "/") in the MIX/COMP TEMP field.
Compaction Temperature Units Type (cmpct_temp_ unt)	The unit of measure for the associated design compaction temperature value, degrees Fahrenheit.	Code Table	Auto-populated by Spreadsheet	This is a data check field; Must exist in TEMP code table.
High Air Temperature (high_air_tem p)	Average high air temperatureKYTC will not use this field.	N/A	N/A	Applet will not use this field for this discipline.
High Air Temperature Units Type (high_air_tem p_unt)	Unit of measure for high air temperature. KYTC will not use this field.	N/A	N/A	Applet will not use this field for this discipline.
Remarks (rmrks_id)	Remarks. KYTC will not use this field.	N/A	N/A	Applet will not use this field for this discipline.
Last-Modified User ID (last_modfd_u id)	Last user to modify the record	Free-form	KYTC Spreadsheet Approver	This is the KYTC person approving the Mix Design. User must be an active Security User. <design by="" data.approved=""></design>

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Last-Modified Date (last_modfd_d t)	Date of the last modification made to the record.	Date	Auto-populated by Applet	System Date the sample was successfully imported into SiteManager.
Air Voids Percentage (air_voids_p)	N/A (Previously the percentage of air voids in the mix.) KYTC will not use this field.	N/A	N/A	Applet will not use this field for this discipline.

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MATERIALS FOLDER TAB (t_bit_conc_mixblnd)

There will be two different sources of the mix materials components: Multiple Aggregates and a single Binder. Binder source locations are listed first (when source if different) and the Aggregate source.

Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Mix ID (mix_id)	Mix Design ID for the Superpave mix design established on the Asphalt Mix (MIXPACK) Spreadsheet. This field is required and must be unique (even if the Contractor is using the same Mix Design on multiple contracts). This field is 15 characters long.	Free-form	KYTC Spreadsheet Approver	Mix Design ID established on the Spreadsheet. This field is required and must be unique. KYTC Central Office Mix Designs will use DDYYSSS: DD is the District (Central Office is 00) YY is the Year SSSS is the Mix ID.
				< Design Data.MIX ID NUM.>
Design Type (dsn_t)	Identifies the type of mix design. This is automatically populated as Superpave.	Code Table	Auto- populated by Spreadsheet	This is a data check field; Design Type must exist. This field will be automatically populated on the Spreadsheet as SUP (Superpave).
Material Code (matl_cd)	The transportation agency-defined material code for the SUPERPAVE mix that is submitted with the Spreadsheet.	Free-form	End-User	This is a data check field; Material Code must exist and must be actively produced by the P/S. Pesign Data. BINDER CODE> Codesign Data. "Aggregate".MAT. CODE>

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
P/S Code (prodr_supp_ cd)	The transportation agency-defined Producer/Supplier (P/S) Code for a source/location of the Asphalt Plant that is going to produce the Mix Design.	Free-form	End-User	This is a data check field; must exist and must be active P/S. <design bind.prod.#="" data.=""> <design "aggregate".agg.="" data.="" no.="" prod.=""></design></design>
Brand Name (brnd_nm)	This is a freeform text field where the brand name of the component material may be entered. KYTC will not use this field.	N/A	N/A	Applet will not use this field for this discipline.
Blend Percent (blnd_p)	The percentage of the component material contained within the SUPERPAVE mix.	Free-form	End-User	No edit. < <design ac="" data.design="" property.%=""> <design data."aggregate".%=""></design></design>
Specific Gravity (Bulk) (bulk_spc_gr_ m)	The bulk specific gravity of the component material contained within the SUPERPAVE mix. This is the number that is used for the Mix Design whether it is the data provided by KYTC testing or the Contractor.	Free-form	End-User (and possible override by KYTC Spreadsheet Approver)	This will initially be entered by the end-user. If the state determines this value must be verified, the same test will be run by the state. If the contractor's value is within the tolerance levels set by the state of the state run test results, the contractor's value will remain. Otherwise the KYTC Spreadsheet Approver will replace the contractor's value with the states. (NOTE: For each verification test run by the state, the "Results Used" indicator will be set by the KYTC Spreadsheet Approver as applicable.) <design data.g<sub="">b> <design "aggregate".g<sub="" data.="">sb></design></design>

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Gsb (Bulk) Source (aprnt_spc_gr _m)	This field indicates whether or not the testing values used in the Design come from the state or the Contractor. Enter an S if the Bulk Specific Gravity data used is provided by the State. Enter a C if the Bulk Specific Gravity data used is provided by the Contractor. This will need to be indicated on the Spreadsheet.	Code Table	KYTC Spreadsheet Approver	For each verification test run by the state, the "Results Used" indicator will be set by the KYTC Spreadsheet Approver as applicable. BINDER: N/A <design aggregate="" c="" data.mcl="" information.s="" verification=""></design>
Sample ID (smpl_id)	This is the SiteManager Sample ID for samples that are tested and recorded in SiteManager. Example: Aggregate tests.	Free-form	KYTC Spreadsheet Approver	For each verification test run by the state, the Sample ID used for the test will be entered by the KYTC Spreadsheet Approver. <design #="" (&="" additional)="" consensus="" data.mcl="" id="" information.sitemanager="" verification=""> (Always last row of six) <design #="" agg.="" aggregate="" data.="" id="" information.="" mcl="" sitemanager="" verification=""></design></design>
Last-Modified User ID (last_modfd_u id)	Last user to modify the record.	Free-form	KYTC Spreadsheet Approver	This is the KYTC person approving the Mix Design. User must be an active Security User. <design by="" data.approved=""></design>
Last-Modified Date (last_modfd_d t)	Date of the last modification made to the record.	Date	Auto- populated by Applet	System Date the sample was successfully imported into SiteManager.

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GRADATION FOLDER TAB (t_mix_dsn_grdn) - NOT USED BY THE APPLET

Because the gradations for each possible Superpave Mix Design "Material Code" can have a different set of sieves (each with their own unique set of Sieve Size Serial Numbers that could be a different number for the same actual sieve size), there was no way to achieve the mapping of this data from the spreadsheet to SiteManager. (NOTE: the spreadsheet has ALL available sieve sizes for all the material codes, and only expects the user to enter those that are applicable for the one being reported on.) This data will need to be stored on the Sample associated with the Mix Design itself.

Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Mix ID (mix_id)	Mix Design ID for the Superpave mix design established on the Asphalt Mix (MIXPACK) Spreadsheet. This field is required and must be unique (even if the Contractor is using the same Mix Design on multiple contracts).	N/A	N/A	Applet will not use this field for this discipline.
	This field is 15 characters long.			
Design Type (dsn_t)	Identifies the type of mix design. This is automatically populated as Superpave.	N/A	N/A	Applet will not use this field for this discipline.
Material Code (matl_cd)	The transportation agency-defined material code for the SUPERPAVE mix that is submitted with the Spreadsheet.	N/A	N/A	Applet will not use this field for this discipline.
Effective Date (matl_grdn_ef fdt)	The date the gradation specification becomes effective.	N/A	N/A	Applet will not use this field for this discipline.

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Status (N/A)	Identifies the current status of this sieve size record (e.g., active or inactive).	N/A	N/A	Applet will not use this field. This is not a database field; it is assigned programmatically by the SiteManager application.
Sieve Size (N/A)	AASHTO and ASTM standard sieve sizes (e.g., 1/2, No. 4, etc.).	N/A	N/A	Applet will not use this field. This is not a database field; it is assigned programmatically by the SiteManager application.
Material Gradation Sequence Number (matl_grdn_sn)	System generated key to hold the sieves in their proper order, since the sieve size field is character and will not sort in correct order.	N/A	N/A	Applet will not use this field for this discipline.
Sieve Value (sv_val)	The percentage of bituminous mix passing through the sieve screen.	N/A	N/A	Applet will not use this field for this discipline.
Minimum Range (N/A)	The beginning value for the gradation specification limit.	N/A	N/A	Applet will not use this field. This is not a database field; it is assigned programmatically by the SiteManager application.
Maximum Range (N/A)	The ending value for the gradation specification limit.	N/A	N/A	Applet will not use this field. This is not a database field; it is assigned programmatically by the SiteManager application.
Min Production Tolerance (min_prod_tol rnc)	The minimum production tolerance value specification. This field is required when the Sieve Value field is populated.	N/A	N/A	Applet will not use this field for this discipline.

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Field Name	Description	Spreadsheet Data Type	Source of Data	KYTC Spreadsheet Population Decision
Max Production Tolerance max_prod_tolr nc)	The maximum production tolerance value specification. This field is required when the Sieve Value field is populated.	N/A	N/A	Applet will not use this field for this discipline.
Last-Modified User ID (last_modfd_u id)	Last user to modify the record.	N/A	N/A	Applet will not use this field for this discipline.
Last-Modified Date (last_modfd_d t)	Date of the last modification made to the record.	N/A	N/A	Applet will not use this field for this discipline.

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