CONTRACTOR'S MASTER CERTIFICATION OF ASPHALT MIXING PLANTS AND RELATED EQUIPMENT

NOTE: To be valid, this form must be completed during an actual inspection of the plant by the foreman/superintendent or another person directly responsible for the plant operation.

Contractor _____Date _____

Plant Location _____

_____ Phone No. _____
(Name and Title of person making certification and inspection)

Make of plant _____capacity/rating _____or _____
(lbs/ batch) (tons/hour)

Ensure all plants have the manufacturer's plate attached to the plant listing the maximum rated capacity of the plant. (For drum mix plants list the rating at 5% moisture content of the aggregates).

1. Stockpile for plant operation

(a) Method of construction: 1) Truck _____ 2) Conveyor _____

3) Front end loader _____4) Bulldozer _____5) other _____

Construct stockpiles by such methods that will prevent segregation and maintain uniformity.
Provide front end-loader buckets that are not wider than the cold-feed bins being charged.

(b) Separate stockpiles sufficiently to prevent intermixing. Check method of separation:

1) Bulkhead _____2) Walkway between stockpiles _____3) other _____

2. Cold feeds for drier

Number of bins _____Total capacity _____tons

Type of feeders _____Design feeders for total and proportional control of aggregates for all types of mixes, and design controls so that they may be locked in any position.

Charge the bins so that the aggregates will not be intermixed by spilling over from one to the other.
Charge the bins by methods that will prevent the intermixing of different stockpile materials.
Provide scales for weighing cold-feed samples.

Is the plant configured for recycled asphalt capability? Yes _____No _____

If yes, attach a brief description of where and how recycled material is introduced into the system.

3. Asphalt Binder Tanks

Number of tanks _____

Capacity of each asphalt binder tank (gal.) 1_____2 _____3 _____4 _____

Jacket all lines. Type of heating system _____

Continuously circulate the asphalt binder during the entire operation period. Install the return-line discharge below the level of asphalt binder in the tank (preferably located in the opposite end of the storage tank from the circulating pump).

Are the asphalt binder storage tanks or the line from the pug mill equipped with sampling valves?

Yes _____No _____

Install a sampling valve on all new storage tanks.

Are the asphalt binder tanks equipped with agitators or a bypass for overnight circulation of modified asphalts (if needed)?

Agitators _____Bypass _____

Are the asphalt binder tanks or feed lines equipped with non-recording thermometers?

Feed lines _____Tank _____

Method used to measure amount of binder in storage.

_____

Location of the asphalt binder sampling valve:

_____

Are asphalt binder storage tanks insulated? Yes_____No_____

Are asphalt feed and return lines insulated? Yes_____No_____

Design the asphalt binder storage tanks so that the asphalt binder material being used in asphalt mixtures is free of contamination. Empty the asphalt binder tank before changing the types or grades of asphalt binder. Test any asphalt binder stored for more than 60 days from the approval date (last six digits of the lot number).

4. Drier

Make _____Size _____ft. x _____ft.
(Length) (Diameter)

Pitch _____in. /ft. Burner make _____

Automatic? Yes _____No _____Type of fuel _____

Type of coal (if used) _____

Type or shape of flights _____RPM of drum _____

Type of firewall in cone _____

Ensure the drier and related parts are in a good overall condition.

5. Dust collector

Type: Bag _____Washer _____Cone _____

Other _____Make _____

Does the plant have a primary dust collector? Yes _____No _____

Does the plant have a secondary dust collector? Yes _____No _____

If a primary collector is used, at what point is this dust returned to the mix?

_____

Method of returned dust control: Weight _____Volume _____

Does plant have a dust and/or mineral filler silo? Yes _____No _____

Dust run-around? Yes _____No _____Control all dust to the extent that no dust is returned to the asphalt mix other than that permitted by the **Standard Specifications**. Each dust-return system with a return to the base of the hot elevator must have an inspection door near the hot elevator. Does the dust-collector system meet the applicable pollution regulations? Yes _____No _____

Attach a diagram and brief explanation to this certification explaining how the dust system operates.

6. **Gradation unit (not applicable for drum mixer plants)**

Make _____Total area of the finest screen (all decks) _____ (sq. ft.)

Is the screening unit horizontal or inclined? _____

Number of coil springs _____Number of leaf springs _____
(All springs are to be free and in good working condition)

Number of hot bins, including the dust-return bin _____

Capacity of hot bins (tons): 1) _____2) _____3) _____4) _____

Silo_____ Dust _____

Does the plant have a hot bin for storing and introducing dust to the weigh hopper? Yes _____No _____

Type of low-bin device? Audible alarm _____Indicator light _____Cutoff _____

Is the plant fully automatic? Yes _____No _____

Equip each bin with a separate overflow pipe. Install a tailing pipe for the scalper screen**. Submit with this certification a screening unit diagram that indicates: the number of decks; screening arrangement; length, width, and size opening of each screen; state if screens are stainless steel**

(Maintain screening cloths in good state of repair during plant operation)

All types of plants are required to be fully automatic. Is the plant equipped with a printing system capable of printing the weight of each individual batch component, total weight of each batch, and total weight of all batches in each truckload? Yes _____No _____ **Attach an example of the printed ticket.**

Type/brand of system used to control the automatic batching and proportioning _____

7. **Inspection facilities - Furnish the facilities, equipment, personnel, and all other resources needed to comply with KM 64-426 and KM 64-435.**

Field Laboratory

Prior to initial approval of the asphalt mixing plant, the field laboratory must be inspected and qualified according to the Department's Quality Assurance Program for Materials Testing and Acceptance. Provide a field laboratory that meets the requirements of the **Standard Specifications**. Because of the numerous items, every requirement will not be repeated on this form. However**, by your signature at the end of this form, you are certifying that the field laboratory, furnishings, and equipment meet the requirements of the applicable Standard Specifications, Kentucky Methods and AASHTO Standards.**

The following comments are added for clarity and to provide additional information on certain items in the **Standard Specifications**. It is not intended to minimize other requirements that are not discussed.

a) Provide a laboratory for the exclusive use of the Department representative and qualified Superpave Plant Technologist to perform testing for acceptance and process control purposes.

b) Furnish a level surface (or table) of sufficient size to accommodate all types of acceptance and process-control testing.

c) If chosen as a means of asphalt content acceptance, provide a centrifuge extractor with a permanent mounting base that is sufficiently sturdy to prevent vibration of the laboratory scales. **Department personnel are not permitted to use solvent extraction as a means of verification testing.**

   1) Provide solvent for performing the extraction test by the contractor, and store it in an approved container. An enclosed container should be provided by the contractor to collect the waste solvent from the extractor and contain any toxic fumes. Provide containers that meet all applicable safety standards.

   2) Locate the extractor in an area away from the door so that personnel can safely exit the building in case of fire.

   3) Locate the fire extinguisher near the door so that it will be accessible during an exit from the building.

d) Make provisions for adequate cooling in hot weather and adequate heat in cold weather. **No open-flame heaters are allowed in the lab.**

e) Parking space near the field laboratory; provide spaces in the vicinity of the laboratory as required for Department personnel at each plant.

f) Security of laboratory: provide windows and doors that are capable of being securely locked. Maintain the laboratory walls, roof, and floor in a good state of repair at all times, and provide a laboratory of standard construction that is strong and durable.

g) Sampling platform: provide, near the plant, a sturdily constructed platform of suitable height to inspect and sample from **any size of truck.** Provide a platform having a sturdily constructed stairway with a handrail plus a safety rail around the landing of the platform. If the laboratory is not conveniently located near the plant, the contractor will be required to have a sampling platform at the plant and laboratory.

8. Related Miscellaneous Equipment -

a) Truck-bed solution and sprayer: All truck-bed solution must conform to KM 64-422. Ensure that each shipment of solution is accompanied by a certification of conformance. Apply the solution as recommended, in a fine mist in minimum quantities with a power sprayer.

b) Provide truck beds that do not leak mixture, free from dents, contamination such as dirt, rock, fuel oil, and motor oil; or material stuck in the bed from previous loads. Provide truck covers free of holes and tears and of sufficient size to completely cover the loaded material. Securely fasten all covers in place before the truck leaves the plant. Check for the truck requirements daily.

c) Construct and place a sign visible to all truck drivers before pulling under the plant with the following words in large letters:

"TRUCKS HAULING STATE MATERIAL WILL NOT BE LOADED WHEN BEDS CONTAIN CONTAMINATING MATERIAL AND MUST BE TARPED PRIOR TO LEAVING PLANT"

9. Safety

Cover electrical wiring and all gears, chains, sprockets, and other moving parts of the plant or machinery at the plant site, or install them in such a manner to eliminate the possibility of injury to all personnel. Provide stairways with handrails or guardrails.

10. Thermometer Equipment

Install a non-recording thermometer near the discharge of the aggregate bin and in the asphalt feed line between the storage tank and the charging valve. Ensure all such equipment is tested and calibrated prior to the beginning of each construction season and anytime thereafter when requested by the Department. **If a plant has an automatic burner control system , non-recording thermometers are not required near the discharge of aggregate bin. The automatic system must be capable of heating the aggregate and consistently maintaining the temperature of the mix within + or – 15° F. And when a non-recording thermometer is installed in the asphalt binder storage tank(s), the Dept. will not require a non-recording thermometer in the feed line.**

Furnish documentation with the date that the equipment was last tested and calibrated by the contractor.

(ITEMS NO. 11-14 ARE FOR BATCH PLANTS ONLY)

11. Aggregate Scales -

Scales make _____

Capacity of the scales _____

Least graduation of the scales _____

Scale display location: On plant _____Control house _____

Batching scales are required to be certified by a scale company as specified in Subsection 109.01.02 of the **Standard Specifications**.

Date certified _____Certifying Scale Co. _____

12. Measuring asphalt binder material

Method: Weight _____Volume _____

a) Make of the weight scales _____

(1) Capacity of the scales _____

(2) Graduation of the scales _____

(3) Scale display location: On plant _____Control house _____

Asphalt binder scales are required to be certified by a scale company as specified in Section 109.01.02 of the **Standard Specifications**.

Date certified _____Certifying Scale Co. _____

b) Provide a spray bar for the discharge of the asphalt binder that covers a minimum of three-fourths of the length of the pug mill. Ensure the feed lines are free from leaks.

13. Pug mill

Heated by: Electric _____Oil _____other (specify) _____

Pug mill size _____ft. x _____ft.
(Length) (Width)

No. of paddle arms on each shaft _____

Paddle tip clearance_____in. (maximum of 1.5 in.)

Ensure the liners, paddles, and arms are in good condition at all times during the plant operation. Provide pug mill gates that are free from leaks.

Angle of paddle tips _____degrees (approximate)

Rotation speed of the mixer shaft _____RPM

14. Control of mixing time

Mechanical _____Electrical _____

Equip the plant with time locks to control the dry and wet mixing time during the plant operation.

15. Asphalt mixture surge or storage system

Make: _____

Type of heat _____Surge _____Storage _____

If storage, has it been approved? Yes _____No _____Date approved _____

If approved, for how many hours? _____

Are there any restrictions or conditions on the approval? _____

_____

Is the approval (with any applicable conditions) posted in a conspicuous location in the laboratory?

Yes _____No _____

Identify the bin number and location if more than one storage bin is set up at the plant site.

_____

Surge or storage systems for asphalt mixtures may be used by the contractor for overnight storage, **provided that each system is approved by the Division of Materials prior to its use.** Approval of a surge or storage system will be dependent upon tests that indicate the system is capable of conveying, retaining, and delivering the asphalt mixture without (1) balling or hardening, (2) appreciable loss of mixing temperature, (3) segregation of the aggregates, or (4) excessive oxidation of the asphalt binder. Add an approved silicone additive to the asphalt binder for hot-mix asphalt to be stored beyond the day of mixing. Approval of a surge or storage system may be withdrawn when tests and/or inspections indicate the system is having a detrimental effect on the asphalt mixture. Insulate the bins intended for storage, and provide a working seal, top and bottom, to prevent the infiltration of outside air. When storing, completely fill the bins in order to maintain a non-oxidizing condition. Do not increase the temperature of the mixture being stored unnecessarily high as to accelerate hardening of the asphalt binder.

Any asphalt mixture that is damaged in any way, in the judgment of the Department, by use of a surge or storage system will be rejected. Completely empty the surge bins by the end of each working day. When the bin cannot be emptied, store the asphalt mixture(s) overnight in a manner that prevents damage. Obtain the Department's approval prior to placing material stored longer than overnight and up to 72 hrs. Material stored will be subject to the same requirements as specified for normal, unstored asphalt mixture.

(ITEMS NO. 16-28 ARE FOR DRUM PLANT ONLY)

16. Size of the scalping screens _____

Location of the scalping screen _____

17. Describe the means provided to control the aggregate flow from each aggregate bin and the proportion from each bin in relation to the total aggregate flow.

_____

_____

_____

18. List the belt scales or other devices that provide positive weight control of each individual cold feed and the total aggregate feed.

_____

Is the total aggregate flow automatically coupled with the asphalt proportioning device to maintain the required asphalt binder content in the mixture? Yes _____No _____

19. Is the plant equipped with a sound device or automatic shut-off that operates when the flow from any individual feeder is interrupted or when the flow of asphalt binder to the drum is interrupted?

Sound device _____Automatic shut-off _____

20. Is the aggregate weighing device capable of being adjusted (to the nearest 0.1 percent) to compensate for moisture in the aggregate and RAP material? Yes _____No _____

21. Is the plant equipped to use only a portion of the collected fines? Yes _____No _____

If so, how is the dry-aggregate weight adjusted?

_____

22. Is the asphalt feed line equipped with a non-recording thermometric instrument to monitor the asphalt binder temperature? Yes _____No _____

23. Is the plant equipped with a thermometric instrument for measuring and displaying the final mixture temperature at the discharge chute of the drum mixer? Yes _____No _____

24. What means have been provided to obtain samples of individual aggregates and/or combined aggregates from the belt feeders?

_____

25. Type/brand of system controls used for proportioning of aggregates, RAP and PG binder.

_____

_____

26. Is the plant equipped to produce Warm Mix Asphalt (WMA)? _____

27. Brand of Water Injection System for WMA? _____

28. Type/brand of system used to introduce manufactured additives?

_____

a) If used, where and how is the additive introduced into the mixing plant? _____

_____

Inspection List for Asphalt Mixing Plants

The following is a list of items which must be provided at the field laboratory and a list of conditions which must be met at the mixing plant. Indicate their presence and proper working conditions by checking on the line provided. **Note:** The Kentucky Testing Method (KM) and AASHTO standard defines the equipment required to perform a given test procedure.

Virgin Aggregate Stockpiles

________No intermixing or segregation

Method of stockpile construction: Truck _______Conveyor ________Loader ________Other_________

Stockpiles separated by: Walkway _______Driveway ________Bulkhead ________Other_________

RAP Stockpiles

Stockpile Identification Number________________________________

Gradation: Coarse Intermediate Fine

________No intermixing or segregation

Method of stockpile construction: Truck _______Conveyor ________Loader ________Other_________

Stockpiles separated by: Walkway _______Driveway ________Bulkhead ________Other_________

Stockpile Identification Number________________________________

Gradation: Coarse Intermediate Fine

________No intermixing or segregation

Method of stockpile construction: Truck _______Conveyor ________Loader ________Other_________

Stockpiles separated by: Walkway _______Driveway ________Bulkhead ________Other_________

Stockpile Identification Number________________________________

Gradation: Coarse Intermediate Fine

________No intermixing or segregation

Method of stockpile construction: Truck _______Conveyor ________Loader ________Other_________

Stockpiles separated by: Walkway _______Driveway ________Bulkhead ________Other_________

Plant

_____Batch _____Drum

_____One Internet access site per company for sending and receiving electronic mail

Email address: _____

_____Batching scales certified (Batch Plants); date _____

_____Truck scales certified; date _____

_____Load cells for PG binder calibration tank certified (asphalt metering pump); date _____

_____Manufacturer's plate listing maximum rated capacity of plant

Location of maximum capacity rating plate or documentation:

_____

_____Cold feeders, adjustments total and proportional

_____No flow paddles attached and working properly

_____Cold bins in good shape, properly divided

_____Each hot bin equipped with cutoff device for indication of low supply of material

_____Hot bin sampling device

_____Screens in place and free of holes and tears

_____Adequate and safe stairways to mixer platform

_____All gears, pulleys, chains, and other moving parts guarded

_____Automatic burner or recording thermometer and non-recording thermometer near discharge in aggregate bin

_____Two or more asphalt binder tanks, or one tank for each grade asphalt binder normally stored

_____Means provided for accurately measuring the volume of asphalt binder material in storage tank

_____Return discharge line in asphalt binder tank near bottom (preferably located at opposite end of tank from outlet to plant)

_____Sampling outlet in each asphalt binder tank or feed line to plant

_____Non-recording thermometer for asphalt binder feed line or storage tank

_____Drainage receptacle for flushing sampling outlet

_____Ten test weights of 50 lbs. (Batch Plants)

_____Scales for checking cold feeds

_____Clean truck bed signs. (See Standard Specifications 401.02.01, N)

_____Power Sprayer for truck bed solution

_____Sturdily constructed platform of suitable height for inspection and sampling the mixture from any size truck 7 to 7.5 feet tall at floor level

Laboratory

_____One computer installed with and utilizing a minimum system requirement: Microsoft Office 2003 Professional (Full Installation)
_____One printer utilized for printing test data
_____Sufficient parking space for state personnel, near the on-site laboratory
_____Floor space 250 sq. feet
_____Width, not less than 7 feet
_____Height of ceiling, no less than 7 feet high
_____One desk or table and two chairs
_____One workbench 2.5 ft. by 6 ft. min.
_____One permanent mounting base for solvent extractor located away from exit
_____One light over each table and workbench and at least one ceiling light
_____Electric wall outlets on each wall
_____A fume hood and exhaust which are adequate for removal of solvent fumes (for solvent extractors)
_____All contractor's equipment and supplies not pertaining to testing removed from the laboratory
_____A suitable table or area (1.2 sq. feet) for purposes of mixing and quartering of mixture samples

Laboratory Equipment

_____Laboratory accreditation documentation on file and updated as required
_____One Superpave gyratory compactor and specimen extruding system (KM64-435)
_____Four Superpave gyratory compactor molds (KM64-435)
_____One set of calibration equipment for the gyratory compactor (including access to internal angle measuring device)
_____One container meeting the requirements of KM64-411 (Pycnometer for Maximum Specific Gravity)
_____A mechanical agitator for the Maximum Specific Gravity container
_____A vacuum pump or water aspirator meeting the requirements of KM64-411 (capable of evacuating air from the vacuum container (pycnometer), to a residual pressure of 30.0 mm Hg or less)
_____A manometer or vacuum gauge permanently mounted in-line for measuring partial vacuum of 30.0 mm Hg or less
_____One oven capable of holding two 16 in. x 17 in. sample pans and 4 molds (capable of maintaining a constant temperature up to 360 ^{0} F)
_____Five aggregate sample buckets
_____Four sample pans (16 in. x 17 in.)
_____One set of laboratory scales capable of weighing 5,000 grams to an accuracy of 1.0 gram
_____All sieves necessary to perform gradation test
_____One long handled square end shovel
_____One 5 gallon storage can and sufficient solvent for extraction test (if applicable)
_____Two dial stem thermometers
_____One electric hot plate or oven with an adjustable temperature control capable of 1000 watts or greater, and accommodating a 16 in. x 17 in. sample pan
_____One fire extinguisher (mounted near door)
_____One first-aid kit
_____One outside sealable container for collection of waste solvent (if applicable)
_____Miscellaneous equipment (scoop, spatula, spoon, screen brush, gloves, rags, matches

General Certification Statement (all plants)

I certify that all the above items have been checked and worn or damaged parts have been replaced, and all items are on the plant site and are in good working condition. I understand that I will not be permitted to produce material for the Kentucky Department of Highways **if any one item is not available** as required or is not in satisfactory working condition.

Plant Supervisor _____ _____
(Signature) (Title)

For _____ _____
(Company Name) (Date)

Mailing Address _____
(PO Box, Street)

_____
(City)

_____ _____
(State) (Zip Code)

In the event that problems arise that are not suitable to be handled by the Qualified Superpave Plant Technologist or Superintendent, list below the name(s) of the person(s) who can be contacted.

_____ _____
(Name) (Name)

_____ _____
(Title) (Title)

_____ _____
(Phone) (Phone)