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## **LABORATORY QUALIFICATION PROGRAM**

The District Materials Office will qualify the other laboratories and maintain records of the qualification for three years. The District Staff will check the following prior to qualifying a laboratory:

1. Establish the type of laboratory (Aggregate, Hot Mix Asphalt, PC Concrete).
2. Check for current manuals and test procedures covering the qualified testing.
3. Check the certification of the testing personnel.
4. Document that proper equipment is available to perform qualified testing.
5. Check documentation system.

Scheduling of the qualification review will be discussed with the laboratories seeking qualification. The District Materials Engineer should be contacted for laboratories that have been qualified in other states. The District Materials Office may qualify a laboratory based on an acceptable qualification report and qualification program from another state transportation agency.

Table 1 and the pages following cover the list of items to be reviewed.

An oral close out on any deficiencies will be held with the testing personnel. Written notice will be sent within two weeks of the inspection. District personnel will re-inspect after correction of any deficiencies.

A form showing the laboratory type, the date qualified, and the expiration date will be issued by the District Materials Engineer.

The list of Qualified Laboratories will be maintained on a database accessible by authorized Materials Personnel.

### **NON-COMPLIANCE/DISPUTE RESOLUTION**

A laboratory that does not meet the requirements of the IM is subject to elimination from the qualification program.

The office responsible for the qualification will resolve disputes concerning calibration and correlation of equipment. For disputes that cannot be resolved at the District level, the Central Materials Laboratory will be the final authority.

**Table 1 - Laboratory Qualification Checklist**

	√	Calib./Verif. Interval	Calib./Verif. Procedure
Tester Qualifications-Proper Iowa DOT certifications			
Current Test Procedures			
Current Calibration Procedures & Records			
Documentation of correlation results and corrective actions taken for previous construction season.			
<b>Aggregate Laboratory</b>			
Balances		12 months	Iowa 917-B
Sieves- wear, tear, size, and opening size		12 months	Iowa 1506-A
Splitter- condition		12 months	(Visual)
Mechanical Shakers- condition (if used)		12 months	Iowa 1502-A
<b>HMA Laboratory</b>			
Balances- and water bath		12 months	Iowa 917-B
Sieves- wear, tear, size, and opening size		12 months	Iowa 1506-A
Splitter- condition		12 months	(Visual)
Mechanical Shakers- condition (if used)		12 months	Iowa 1502-A
Rice equipment- vacuum and flask		12 months	IM 350
Thermometers		12 months	Iowa 1607-A
Ovens- temperatures		12 months	Iowa 1501-A
Gyratory Compactor and molds		12 months	Iowa 1524-A
Marshall Hammer and molds		12 months	Correlation Checks
<b>PCC Laboratory</b>			
Balances		12 months	Iowa 917-B
Sieves- wear, tear, size, and opening size		12 months	Iowa 1506-A
Splitter- condition		12 months	(Visual)
Mechanical Shakers- condition (if used)		12 months	Iowa 1502-A
Air Meter		12 months	IM 318
Slump Cone and equipment-condition		12 months	
Beam Breaker		12 months	Central Lab

## **LABORATORY ITEMS**

The following list contains, as a minimum, what is required for a qualified asphalt laboratory. The test equipment to perform each of the required tests is contained in the respective IM.

- Field Lab and Office [Suggested size 8 ft. x 44 ft. (2.4 m x 13.41 m)]. Locate the Field Lab so it is convenient to the plant, but outside the influence of plant vibration.

Air-conditioned

Personal computer

Phone

Fax machine

Copy Machine

Sample storage

Work table

Bulletin board

Water available to perform necessary testing

Desk and chair

Incidental spoon, trowels, pans, pails

- The personal computer shall be capable of running Iowa DOT programs. It is recommended to have at least Windows 2000 or newer software on the computer. Iowa DOT programs have been checked and are capable of running on Windows 2000 and newer software.

3.5" high-density floppy disk drive (CD drive recommended)

Color monitor, VGA or better

Printer, ink jet recommended.

- Diamond saw for cutting core lifts.
- Diamond core drill (minimum 4" diameter core).





**Iowa Department of Transportation**

**AGGREGATE LABORATORY INSPECTION  
QUALITY CONTROL CHECKLIST**

Contractor/Producer: \_\_\_\_\_ Location: \_\_\_\_\_  
Certified Technician: \_\_\_\_\_ Certification No: \_\_\_\_\_

<b>Balances</b>	(Iowa Test Method 917-B)	<b>Yes</b>	<b>No</b>
	Updated balance calibration records available?	_____	_____
	Check balance using 500 gm & 1000 gm calibrated weights?	_____	_____
	Is balance accurate to 0.1%?	_____	_____
<b>Sieves</b>			
	Is there adequate correlation history to qualify?	_____	_____
	Were go/no-go gauges used to check accuracy?	_____	_____
	Are the sieves in good condition (no loose frames, holes, or tears)?	_____	_____
<b>Splitter</b>			
	Is the splitter in good condition? (i.e., missing shuts, cracked welds, or leaking seams)	_____	_____
<b>Shaker</b>			
	Is shaker apparatus secure and level?	_____	_____
<b>Scale</b>			
	Are the laboratory weights used for routine calibrations accurate? (Use 0.1% difference from our calibrated weights as standard.)	_____	_____

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

cc:Materials Engineer  
Contractor/Producer  
Ames  
File

**Inspected By:** \_\_\_\_\_  
**Date Inspected:** \_\_\_\_\_



Iowa Department of Transportation

HMA LABORATORY INSPECTION  
QUALITY CONTROL CHECKLIST

Contractor/Producer: \_\_\_\_\_ Location: \_\_\_\_\_

Certified Technician: \_\_\_\_\_ Certification No.: \_\_\_\_\_

<b>Thermometers</b>	(IM 321, IM 325, IM 325G, IM 350)	<b>Yes</b>	<b>No</b>
Thermometer Calibration and Documentation available?		_____	_____
Temperature of check:	_____ (25 deg C or 135 deg C)		
State reference thermometer	_____		
Contractor reference thermometer	_____		
<b>Difference</b>	_____		

<b>Rice Pycnometer</b>	(IM 350)		
Calibration chart and/or documentation available?		_____	_____
Equipment achieves between 25.5 and 30mm of mercury vacuum?		_____	_____
Mercury is free of bubbles?		_____	_____

<b>Gyratory/Marshall Compactor</b>	(IM 325/IM 325G)		
Calibration documentation available?		_____	_____
Is equipment generally clean?		_____	_____
Documentation of annual mold measurements?		_____	_____

<b>Ovens</b>	(IM 325/IM 325G)		
Documentation of temperature checks?		_____	_____
General condition satisfactory?		_____	_____
Do all parts work as intended?		_____	_____

**Water Bath** (IM 321)  
Temperature? \_\_\_\_\_

**Correlation**  
Correlation results available for previous year? \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTE: HMA labs must also qualify as an aggregate lab.

cc: Materials Engineer	<b>Inspected By:</b>	_____
Contractor/Producer		
Ames	<b>Date Inspected:</b>	_____
File		



Iowa Department of Transportation

**READY MIX/PCC PAVING LABS  
QUALITY CONTROL CHECKLIST**

Contractor/Producer: \_\_\_\_\_ Location: \_\_\_\_\_  
Certified Technician: \_\_\_\_\_ Certification No: \_\_\_\_\_

**Inspection Checklist Items:**

<b>Air Meter</b>	(IM 318)	<b>Yes</b>	<b>No</b>
Check meter using approved 5% pugs.		_____	_____
Is air meter clean?		_____	_____
Proper rod and mallet.		_____	_____
<b>Slump Cone</b>	(IM 317)		
Interior of cone free of dents or projections.		_____	_____
5/8" by 24" tamping rod.		_____	_____
Rigid, nonabsorbent base.		_____	_____
Equipment clean and free of hardened concrete.		_____	_____
<b>Beam Breaker</b>	(IM 316)		
Current annual calibration sheet		_____	_____
Equipment clean.		_____	_____
<b>Beam Molds</b>	(IM 328)		
Molds clean and free of dents		_____	_____
General condition of molds good.		_____	_____

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**NOTE:** PCC labs must also qualify as an aggregate lab.

cc: Materials Engineer  
Contractor/Producer  
Ames  
File

**Inspected By:** \_\_\_\_\_  
**Date Inspected:** \_\_\_\_\_