AASHTO MATERIALS REFERENCE LABORATORY
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
100 BUREAU DRIVE, STOP 8619
BUILDING 202, ROOM 211
GAITHERSBURG, MD 20899-8619

REPORT ON ASSESSMENT OF MATERIALS LABORATORY

Assessors Present	Assessor Roles (circle one)	Assessment #	
1.	Normal Training Combo Cross-Training	Start Date	
2.	Normal Training Combo Cross-Training	End Date	
3.	Normal Training Combo Cross-Training	Old Report #	
4.	Normal Training Combo Cross-Training	Old Re. Date	
		Lab AMRL #	

1. **Location of Laboratory:** Laboratory Telephone No. (_____) _____

Name of Laboratory: _____

Street: _____

City: _____ **State:** _____ **Zip Code:** _____

2. **Working Hours:** _____

3. **Distribution of Report:**

	Original	Copy
Name:	_____	_____
Title:	_____	_____
Address:	_____	_____
	_____	_____
	_____	_____

	Circle one:		
LAB ACCREDITED?	**Yes**	**Seeking**	**No**
Copy to FHWA (State DOTs only)?	**Yes**	**No**	
Out-of-Sequence Laboratory (OOS)?	**Yes**	**No**	**Supplemental**

Kit Letter _____	Offset at 20°C	Offset at 110°C	Uncertainty
Temp. Probe A			± 0.3°C
Temp. Probe B			± 0.3°C

AMRL LABORATORY ASSESSMENT OPENING MEETING

Date: _____

Assessor: *Upon arrival at the laboratory, arrange and conduct an opening meeting with the contact person and/or primary person in charge of the facility as well as any other key staff that may be involve in the assessment. Review each item from the checklist below with the laboratory:*

☐ **Purpose of Assessment and Accreditation Criteria**

The laboratory is being assessed to evaluate the competency to perform test methods in conformance to AASHTO and ASTM standards as requested by the laboratory. Laboratories seeking AASHTO accreditation will additionally be evaluated for conformance to the criteria specified in AASHTO R18, the AASHTO Accreditation Program Requirements Manual, and additional quality system standards (E329, D3666, C1077, D3740) as requested by the lab.

☐ **Scope of the Assessment**

Review the assessment request form and (1) verify that the laboratory is in agreement with the planned scope of testing, and (2) if accredited, that the scope requested is in agreement with current accreditation scope. Note any tests to be added or dropped on the appropriate Worksheet Index page of the worksheets.

☐ **Assessment Schedule**

Discuss/Review the following as it relates to the schedule:

- Length of Assessment
- Quality Manual/Records Review schedule
- Special Circumstances – preference of scope order, field testing requirements, staff requirements, etc.
- Approximate close-out meeting time

☐ **Confidentiality**

Explain that all information obtained during the assessment will be held in confidence and will not be shared with other parties.

–

Assessor Notes - *for additional ASTM quality standards, the following criteria apply:*

- **C1077** - demonstrate ASTM methods C40, C117, C127, C128, and C136 during the AMRL or CCRL on-site assessment.
- **D3666** - demonstrate at least one ASTM Hot Mix test method during the on-site assessment.
- **D3740** - demonstrate at least 5 ASTM Soil tests (**Note:** *any soil tests we assess for are acceptable, except for ASTM D2419*).
- **E329** - lab must meet the requirements of ASTM C1077, D3666, or D3740. (**Note:** *A laboratory may cover ASTM C1077 through CCRL. ASTM E329 is offered by AMRL only.*) Alternatively, they can become accredited for E329 for SFRM testing only, if SFRM testing is performed during the on-site assessment.

AMRL LABORATORY ASSESSMENT CLOSING MEETING

Date: _____

- ☐ Explain that this is a preliminary report and that things may change on the final report. Explain that findings must be resolved within 90 calendar days of the date of issuance of the final report.
- ☐ Explain Nonconformities, Observations, and Alerts as described on page 1 of the report.
- ☐ Distribute and review the preliminary report. Record names of all in attendance on assessment worksheets.
- ☐ Discuss the new AAP system for responding to findings – make sure you provide a copy of the tutorial with the preliminary report. Give an explanation of how to resolve deficiencies. (*Must present invoices, packing slips, revised QS documents, completed records, etc. Purchase orders will not suffice.*)
- ☐ Discuss the new specifier role (DOT's, FHWA, multiple branch labs, other specifiers) that allows laboratories to share accreditation information, access to assessment reports, PSP results, etc, with specifiers they choose.
- ☐ Remind laboratory personnel that they can provide feedback by visiting the "About Us" page on the website or by contacting our Quality and Information Manager.
- ☐ Mention the availability of AASHTO accreditation for ISO/IEC 17025, *General Requirements for the Competence of Calibration and Testing Laboratories.* An additional visit by an AMRL 17025 auditor is required.
- ☐ Mention that anyone can sign up to receive our newsletter by sending an email to subscribe@amrl.net. ★
- ☐ Explain that all information obtained during the assessment will be held in confidence and will not be shared with other parties.
- ☐ Thank the laboratory for participating in the AMRL program(s).

WORKSHEET & TEST METHOD SUGGESTIONS

Record any suggestions you have for changes to the worksheets in the table below. Suggestions for changes to the test methods can also be recorded here. (Example: Agg-11 | T85 | suggestion…) **Please discuss anything you write here with an APS.**

Set / p#	Test	Suggestions

PERSONNEL

Date: _____

1. Laboratory workers involved in the assessment:

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

2. Laboratory personnel involved in the review of the report:

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

Name: _____ **Position:** _____

AMRL Website Registration

Date: _____

Is the laboratory registered for the AMRL website? ....._____

Note: If a lab is registered, "Registered since xx/xx/xxxx" will appear on the website in the right-hand column of their laboratory page. Registering allows the lab to view their report online, update their laboratory information, schedule assessments, etc.

If the lab is not registered use the following procedure to register them:

NEW Laboratories and Labs NOT Currently Registered to the AMRL Website:

1. Visit the AMRL website at www.amrl.net
2. On the home page, underneath the search bar, select "Register your Laboratory."
3. Follow the on-line instructions (select Request Laboratory Registration or call back to the office @ 301.975.5450 directly for assistance. An administrative assistant will provide the access code and passkey, which will allow the laboratory to create a password for their account).

HOURS:

Note: Record the number of hours spent in the field. For combo labs record the total for all assessors involved. Do not record hours for trainees or cross-trainees.

	Gen	Asphalt	Emul	HMA	Soil	Agg	Metal	SFRM	Pipe
Hours Spent									

Total Report Writing Hours: _____ **Total Quality System Review Hours: _____**

Total Assessment Hours (all time spent in laboratory): _____

MECHANICAL SIEVING DEVICES *

Manufacturer	Lab ID #	Condition OK?

*** Only record devices that you have seen in operation**

OVENS

Manufacturer	Model No.	Serial No.	Temperature Range (°C)			110 ± 5°C (*230 ± 9°F*)?
			Min.	Max.	Ave.	

Note: If the average temperature is not within the allowable range specified in the method, and/or if the min/max temperature recorded is beyond the allowable limits specified in the method by more than 5°C, report the deficiency below. The temperature of the oven should be recorded for a minimum of 30 minutes.

COMMENTS:

LITERATURE

Date: _____

Soil

AASHTO books		ASTM books	
AASHTO	Date	ASTM	Date
T87-86		D421-85	
T88-10		D422-63	
T89-10		D4318-10	
T90-00		D4318-10	
T92-97		--------	--------
T99-10		D698-07	
T100-06		D854-10	
T134-05		D558-10	
T135-97		D559-03	
T136-97		D560-03	
T146-96		--------	--------
T176-08		D2419-09	
T180-10		D1557-09	
T190-09		D2844-07	
T191-02		D1556-07	
T193-10		D1883-07	
T208-10		D2166-06	
T215-70		D2434-68	
T216-07		D2435-04	
T217-02		D4944-04	
T236-08		D3080-04	
T265-93		D2216-10	
T267-86		D2974-07a	
T296-10		D2850-03a	
T297-94		D4767-04	
T310-10		D6938-10	
T311-00		--------	--------
--------	--------	D1140-00	
--------	--------	D2487-10	
--------	--------	D2488-09a	
--------	--------	D4546-08	
--------	--------	D4644-08	
--------	--------	D4829-08a	
--------	--------	D4943-08	
--------	--------	D4972-01	
--------	--------	D5084-10	
--------	--------	D5731-08	
--------	--------	D7012-10	

Aggregate

AASHTO books		ASTM books	
AASHTO	Date	ASTM	Date
T11-05		C117-04	
T19-09		C29-09	
T21-05		C40-04	
T27-06		C136-06	
T37-07		D546-05	
T84-10		C128-07a	
T85-10		C127-07	
T96-02		C131-06	
T104-99		C88-05	
T112-00		C142-10	
T113-06		C123-04	
T176-08		D2419-09	
T210-10		D3744-03	
T248-02		C702-98	
T255-00		C566-97	
T304-08		C1252-06	
T327-09		D6928-10	
--------	--------	C535-09	
--------	--------	D4791-10	
--------	--------	D5821-01	
--------	--------	D7172-06	
--------	--------	D7370-09	
--------	--------	D7428-08	

Quality Systems

AASHTO	Date	ASTM	Date
R18-10		C1077-11	
--------	--------	D3666-09a	
--------	--------	D3740-10	
--------	--------	E329-09	

Note: For each Test Method presented, look for the most current edition. In the case where a test method has been re-approved, the most current edition is the version that appears before the parentheses. If the method is current, place a check in the box. If the method is not current, mark an "x" in the box. If the test method was not demonstrated during the assessment, mark it with a line or NP.

COMMENTS:

LITERATURE

Date: _____

Hot Mix Asphalt

AASHTO books		ASTM books	
AASHTO	Date	ASTM	Date
R47-08		--------	--------
T30-10		D5444-08	
T110-03		D1461-85	
T164-10		D2172-05	
T166-10		D2726-10	
T167-10		D1074-09	
T170-00		D1856-09	
T209-10		D2041-03a	
T245-97		D6926-10	
T245-97		D6927-06	
T246-10		D1560-09a	
T247-10		D1561-92	
T269-97		D3203-05	
T275-07		D1188-07	
T283-07		D4867-09	
T287-06		D4125-10	
T308-10		D6307-05	
T312-09		D6925-09	
T324-04		--------	--------
T329-08		--------	--------
T331-10		D6752-09	
--------	--------	D1075-07	
--------	--------	D2950-10	
--------	--------	D4013-09	
--------	--------	D5404-03	
--------	--------	D6931-07	

Asphalt Cement

AASHTO books		ASTM books	
AASHTO	Date	ASTM	Date
R28-09		D6521-08	
R29-08		--------	--------
T44-03		D2042-09	
T48-06		D92-05a	
T49-07		D5-06	
T50-09		D139-07	
T51-09		D113-07	
T53-09		D36-09	
T55-02		D95-05	
T78-10		D402-08	
T79-96		D3143-08	
T179-05		D1754-09	
T201-10		D2170-10	
T202-10		D2171-10	
T228-09		D70-09	
T240-09		D2872-04	
T295-08		D3142-05	
T300-00		--------	--------
T301-08		D6084-06	
T313-10		D6648-08	
T314-07		D6723-02	
T315-10		D7175-08	
T316-10		D4402-06	
--------	--------	D243-08	
--------	--------	D3289-08	
--------	--------	D5801-95	
--------	--------	D7405-10a	

Emulsions

AASHTO books		ASTM books	
AASHTO	Date	ASTM	Date
T59-09		D6929-04	
T59-09		D6933-08	
T59-09		D6934-08	
T59-09		D6935-04	
T59-09		D6936-09	
T59-09		D6937-08	
T59-09		D6997-04	
T59-09		D6998-04	
T59-09		D7402-09	
T59-09		D7496-09	
--------	--------	D6930-04	
--------	--------	D7000-08	

Quality Systems

AASHTO	Date	ASTM	Date
R18-10		C1077-11	
--------	--------	D3666-09a	
--------	--------	D3740-10	
--------	--------	E329-09	

Sprayed Fire-Resistive Materials

--------	--------	E605-93	
--------	--------	E736-00	

COMMENTS:

METALS LITERATURE

Date: _____

Ensure the laboratory also has the **specification** in the shaded box above each section.

Test Name	AASHTO	Date	ASTM	Date
Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel	**M111-09**		**A123-09**	
• Thickness of Zinc Coating	T65-08		A90-09	
Steel Welded Wire, Plain	**M55-09**		**A185-07**	
Steel Welded Wire, Deformed	**M221-09**		**A497-07**	
• Bend Test	---	---	---	---
• Weld Shear	---	---	---	---
• Tensile Strength	T244-10		A370-10	
High-Strength Bolts for Structural Steel Joints	**none**		**A325-10**	
• Rotational Capacity	---	---	---	---
• Brinell Hardness	none	---	E10-10	
• Rockwell Hardness	none	---	E18-08b	
• Tensile Strength	T244-10		F606-10a	
• Proof Load Determination	T244-10		F606-10a	
Steel Strand, Uncoated 7-Wire	**M203-07**		**A416-10**	
• Tensile Strength	T244-10		A1061-09	
Gray Iron Castings	**M105-09**	---	**A48-03**	
• Tensile Strength	none	---	E8-09	
Steel Wire, Plain	**M32-09**		**A82-07**	
Steel Wire, Deformed	**M225-09**		**A496-07**	
• Bend Test	---	---	---	---
• Tensile Strength	T244-10		A370-10	
Deformed and Plain Billet-Steel Bars	**M31-10**		**A615-09b**	
Rail-Steel and Axle-Steel Deformed Bars	**M322-10**		**A996-09b**	
• Tensile Strength	T244-10		A370-10	
• Bend Test	T285-89		E290-09	
Structural Steel	**M270-10**		**A709-10**	
• Tension Test	none		A6-10a	
• Bend Test	none		A6-10a	
• Charpy V-Notch	T266-08*		E23-07a	
Zinc Coated Steel Wire Rope & Fittings for Guardrail	**M30-02**		**A741-98**	
• Ductility (Wrap Test) / Adherence of Coating	---	---	---	---
• Tensile Strength	T244-10		A370-10	
• Mass of Zinc Coating	T65-08		A90-09	
Epoxy Coated Reinforcing Bars	**M284-09***		**A775-07b**	
• Coating Flexibility (Bend Test)	---	---	---	---
• Film Thickness	---	---	G12-07	
• Continuity of Coating (Holidays)	---	---	G62-07	

*** = reprint of ASTM version except for small changes**

A6, A48, A82, A90, A123, A185, A325, A370, A416, A496, A497, A615, A709, A741, A775, A996, A1061, E8, E10, E18, E23, E290, F606, G12, G62. M30, M31, M32, M55, M105, M111, M203, M221, M225, M270, M284*, M322, T65, T244, T266*, T285.

Other standards we reference: D88, D2168, D2412, D2444, D2680, D3034, D4753, E1, E4, E11, E77, E100, F2306, F405, M92, M231, M320, PP57, R30, T72, T224, TP71

SAMPLE SIZE REDUCERS (T248/C702) Date: _____

1. Jones or Flat Riffle Samplers:

Manufacturer (Record)				
Chutes:				
(a) Coarse: 8 or more? (record number)				
Fine: 12 or more? (record number)				
(b) Equal size openings?				
(c) Minimum distance between dividers?				
(d) Adjacent chutes discharge oppositely?				
(d) Dividers in good condition?				
Miscellaneous:				
(a) Splitter level?				
(b) Number of splits per run is two?				
Feeder: (Only required for AASHTO)				
(a) Feeder width equal to or slightly less (1/4 in.) than total chute width?				
(b) Edge of feeder straight?				
Discharge Pans:				
(a) Length equals or exceeds total chute width?				
(b) Pans in good condition?				

2. Miscellaneous Splitters

Manufacturer	Type	Nom. Opening	Nom. Particle Size	Condition OK?

3. <u>Quartering Equipment</u>:

(a) (Optional) Quartering cloth, 6 x 8 ft. (2 x 2.5 m)? ....._____
(b) Straightedge scoop? ....._____
(c) Shovel or trowel? ....._____
(d) Brush or broom? ....._____

4. <u>Miniature Stockpile Sampling:</u>

(a) Sample thief, small scoop, or small spoon? ....._____

COMMENTS:

SIEVES (M92/ASTM E11)

Date: _____

Set		Metric (mm)	Size (in.) or Number	Min. opening size (mm)	Max. opening size (mm)	No. Inspected	No. OK	Remarks
		75	3	72.8	78.1			
	S	63	2 1/2	61.1	65.7			
1	S	50	2	48.5	52.3			
1	2 S	37.5	1 1/2	36.4	39.3			
	S	31.5	1 1/4	30.6	33.1			
1	S	25.0	1	24.2	26.4			
1	2 S	19.0	3/4	18.4	20.1			
	S	16.0	5/8	15.5	17.0			
	S	12.5	1/2	12.12	13.33			
1	2 S	9.5	3/8	9.21	10.18			
	S	8.0	5/16	7.75	8.60			
		6.3	1/4 (No. 3)	6.10	6.81			
1	2 S	4.75	No. 4	4.60	5.16			
	S	4.00	5	3.87	4.37			
	2 S	2.36	8	2.284	2.61			
1		2.00	10	1.935	2.23			
		1.7	12	1.644	1.90			
	2 S	1.18	16	1.140	1.34			
1		0.850	20	0.821	0.977			
	2 S	0.600	30	0.579	0.701			
1		0.425	40	0.410	0.506			
	2 S	0.300	50	0.289	0.365			
1		0.250	60	0.240	0.308			
	2 S	0.150	100	0.143	0.193			
1		0.106	140	0.101	0.141			
1	2	0.075	200	0.071	0.104			
					Totals:			
					Pans OK?		Covers OK?	

Note: Each sieve shall have a label marked with the following information: (1) U.S.A. Standard Testing Sieve; (2) ASTM E-11; (3) Standard sieve designation; (4) Name of manufacturer or distributor; (5) Alternative sieve designation (optional); and (6) a unique serial number permanently engraved or etched onto the sieve frame, skirt or nameplate.

Note: **1 – T88/D422 Hydrometer, sieve set 1** [*ASTM only: 1 1/2 in., 3/4 in., No. 20, No. 60, and No. 140 sieves are required.*]
2 – T88/D422 Hydrometer, sieve set 2
S – T104/C88 Sulfate Soundness sieve set

COMMENTS:

THERMOMETERS

Date: _____

General Condition of Thermometers (Reference ***ASTM E77 and E1***)

ASTM	IP	Range	Imm. Line T=total	Sub-divisions	# insp.	Serial Number(s)	# OK
7F		30 to 580°F	T	2°F			
7C	5C	-2 to 300°C	T	1°C			
8F		30 to 760°F	T	2°F			
8C	6C	-2 to 400°C	T	1°C			
9F	15F	20 to 230°F	57 mm	1°F			
9C	15C	-5 to 110°C	57 mm	0.5°C			
11F	28F	20 to 760°F	25 mm	5°F			
11C	28C	-6 to 400°C	25 mm	2°C			
12F	64F	-5 to 215°F	T	0.5°F			
12C	64C	-20 to 102°C	T	0.2°C			
13C	47C	155 to 170°C	T	0.5°C			
15F		30 to 180°F	T	0.5°F			
15C	60C	-2 to 80°C	T	0.2°C			
16F		85 to 392°F	T	1°F			
16C	61C	30 to 200°C	T	0.5°C			
17F		66 to 80°F	T	0.2°F			
17C		19 to 27°C	T	0.1°C			
19F		120 to 134°F	T	0.2°F			
19C		49 to 57°C	T	0.1°C			
20F		134 to 148°F	T	0.2°F			
20C		57 to 65°C	T	0.1°C			
47F	35F	137.5 to 142.5°F	T	0.1°F			
47C	35C	58.6 to 61.4°C	T	0.05°C			
62C		-38 to 2°C	T	0.1°C			
63F		18 to 89°F	T	0.2°F			
63C		-8 to 32°C	T	0.1°C			
64F		77 to 131°F	T	0.2°F			
64C		25 to 55°C	T	0.1°C			
110F		272.5 to 277.5°F	T	0.1°F			
110C	93C	133.6 to 136.4°C	T	0.05°C			
		°		°			
		°		°			
		°		°			
		°		°			
		°		°			
					Total		Total

Note to Assessors: Total immersion thermometers (T) must be submerged up to the top of the liquid (mercury, etc) column to get an accurate reading. Partial immersion thermometers must be submerged to the immersion line (ex: 25 mm).

COMMENTS:

GENERAL PURPOSE BALANCES (M231/**D4753**) Date: _____

Class	Readability / Sensitivity	Accuracy*
G1 *(ASTM: GP1)*	**0.01 g**	**0.02 g or 0.1 %**
G2 *(ASTM: GP2)*	**0.1 g**	**0.2 g or 0.1 %**
G5 *(ASTM: GP5)*	**1 g**	**2 g or 0.1 %**
G20 *(ASTM: GP10)*	**5 g**	**5 g or 0.1 %**
G100	**20 g**	**20 g or 0.1%**
ASTM GP100	**50 g**	**50 g or 0.1%**

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
Sensitivity OK?	**Accuracy OK?**	**1 kg**		**50 g**		**2 g**		**0.1 g**	

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
Sensitivity OK?	**Accuracy OK?**	**1 kg**		**50 g**		**2 g**		**0.1 g**	

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
Sensitivity OK?	**Accuracy OK?**	**1 kg**		**50 g**		**2 g**		**0.1 g**	

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
Sensitivity OK?	**Accuracy OK?**	**1 kg**		**50 g**		**2 g**		**0.1 g**	

***Accuracy equal to the mass stated or 0.1 percent of the test load, whichever is greater, throughout the range of use.**
***The accuracy requirements shall be met for application of a test load on any point on the pan.**
COMMENTS:

GENERAL PURPOSE BALANCES (M231/**D4753**) Date: _____

Class	Readability / Sensitivity	Accuracy*
G1 *(ASTM: GP1)*	**0.01 g**	**0.02 g or 0.1 %**
G2 *(ASTM: GP2)*	**0.1 g**	**0.2 g or 0.1 %**
G5 *(ASTM: GP5)*	**1 g**	**2 g or 0.1 %**
G20 *(ASTM: GP10)*	**5 g**	**5 g or 0.1 %**
G100	**20 g**	**20 g or 0.1%**
ASTM GP100	**50 g**	**50 g or 0.1%**

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
Sensitivity OK?	**Accuracy OK?**	**1 kg**		**50 g**		**2 g**		**0.1 g**	

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
Sensitivity OK?	**Accuracy OK?**	**1 kg**		**50 g**		**2 g**		**0.1 g**	

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
Sensitivity OK?	**Accuracy OK?**	**1 kg**		**50 g**		**2 g**		**0.1 g**	

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
Mfgr:	**Type:**	**2 kg**		**100 g**		**5 g**		**0.2 g**	
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G100	**20 g**	**20 g or 0.1%**
ASTM GP100	**50 g**	**50 g or 0.1%**

Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
Class:	**Capacity:**	**4 kg**		**200 g**		**10 g**		**0.5 g**	
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Serial #:		**5 kg**		**500 g**		**20 g**		**1 g**	
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