
R18- 2010 SUMMARY OF CHANGES

1. AASHTO T 314 and ASTM D 4829, D 6723, and D 7000 were added to the “Referenced Documents” section. Equipment for these tests was also added to the appropriate tables in Annex A1.
2. ASTM B 117, D 2240, D 4060, D 4541, and E 1349 were removed from the “Referenced Documents” section. Equipment for these tests was also deleted from the appropriate tables in Annex A1.
3. Definitions were added for “measurement standard” and “maintenance”. Any prior references to “reference standard” have been changed to “measurement standard”.
4. The requirement for a quality policy statement in Section 5.1.2 was removed.
5. The requirement to mark out-of-date standards to prevent unintended use in Section 5.2.2 was removed.
6. The positions and names of those within the organization have been added to the requirements for the organization chart in Section 5.3.3.
7. The wording in Section 5.5.2 was modified to require performance evaluations for *each test* that each technician performs.
8. The name of the evaluator and the test method evaluated were added to the requirements for documentation of competency evaluation in Section 5.5.3.
9. Section 5.7, Management Reviews, was deleted.
10. Section 5.8.2 was updated to include maintenance records.
11. Section 6.1.2.2 was updated to remove the requirement for defining the person who maintains the records.
12. References to “maintenance” were removed from Section 6.1.2 and a new section, 6.1.4, was added to explain maintenance requirements. This change does not add any new content – it just clarifies existing content.
13. Section 6.1.2.3 now requires equipment to be calibrated or standardized over *the range of use*.
14. Section 6.1.3.1 includes a requirement for a procedure in the QMS that explains how the laboratory ensures calibration of its measurement standards.
15. Table A1.1 was modified to eliminate tape measures and rulers and to change the intervals for checking sieves and standardizing thermometers from 6 months to 12 months.
16. Table A1.3 was modified to change the intervals for standardizing timers and checking penetrometer needles from 6 months to 12 months.
17. Table A1.4 was modified to change the interval for standardization of the gyratory compactor ram pressure, frequency of gyration, and LVDT from six months to 12 months. Also, the requirements for standardization of the internal angle and external angle per AASHTO T 312 and ASTM D 6925 were separated. Finally, the requirement for standardization of the internal and external angle was modified from six to 12-month intervals.
18. Table A1.5 was modified to add CBR penetration pistons back into the table.
19. The existing Table A1.9 was deleted to remove the requirements for structural steel coatings testing equipment.
20. A new Table A1.9 was added to provide required intervals for equipment maintenance.
21. Note 7 was updated to include maintenance.
22. Note 8 was updated to pluralize calibration and standardization and to include maintenance.

23. A statement was added in Appendix X1 that informs the reader that the figures are intended as examples only.
24. Figures X1.1, X1.2, and X1.16 were updated to appear as examples rather than requirements.
25. Figure X1.3 was updated to achieve consistency with Sections 5.6 and 5.7.
26. Figure X1.7 was modified for clarification.
27. Figure X1.8 was updated to include standardization and maintenance information. The sentence regarding distribution of records was deleted because it was removed from the body of R 18.
28. Figure X1.16 was updated to include an explanation of the individual responsible for maintaining the records.
29. An example of a maintenance schedule was added as Figure X1.17.
30. An example of a maintenance procedure and record was added as Figure X1.18.

Table A1.9—Equipment Maintenance

Equipment	Test Method (AASHTO/ASTM)	Max. Interval (months)
Performance-graded binder equipment	R 28, T 240, T 313, T 314, T 315/D 2872, D 6521, D 6648, D 6723, D 7175	12
Ductilometers	T 51, T 300, T 301/D 113, D 6084	12
Mechanical Marshall compactors	T 245	12
California kneading compactors	T 190, T 247/D 1561, D 2844	12
Gyratory compactors	T 312/D 6925	12
Mechanical compactors	T 99, T 180/D 698, D 1557	12
Compression machines	Where applicable	12
Mechanical shakers	Where applicable	12

Note 19—There may be more items added to the laboratory’s list of equipment that require maintenance. Maintenance activities will typically involve lubricating, tightening fittings, cleaning, replacing fluids, checking and replacing damaged or worn parts, etc. These activities will vary based on the type of equipment, how often the equipment is used, the manufacturer’s recommendations, etc.