Laboratory Assessment Preparation List

***General Assessment Guidance**: This document is intended to provide guidance for laboratories preparing for an AMRL On-Site Laboratory Assessment, specifically with regard to the preparation and availability of materials required for demonstration of the test method(s). Preparing for the assessment will improve the efficiency, productivity, and benefit of the assessment for the laboratory.*

This document does not address all of the apparatus and procedural requirements which may be evaluated during the assessment. Please consult the applicable AASHTO or ASTM standard for specific requirements. The laboratory may elect to demonstrate the AASHTO, ASTM, or both versions of the test method. The laboratory should be prepared to present required apparatus and to perform the test method in its entirety. Please contact AMRL at (240) 436-4900 if your laboratory has additional questions with regard to preparing for the On-Site Assessment.

AASHTO	ASTM	Soil Assessment Preparation
R58	**D421**	Have a dry soil sample. Prepare samples for each test applicable to the scope of further assessment testing at a minimum.
T88	**D422**	Hydrometer - Have a sample soaking in dispersion agent. All sample preparation data should be retained and the assessor will expect the technician to be able to demonstrate all prior steps taken to prepare the sample. Have a report showing all calculations and graphing available for review. Have composite correction data for the hydrometer available.
T89	**D4318**	Liquid Limit – Have a soil sample ready to be mixed that exhibits plasticity. Demonstrate either the One-Point method or the Multipoint method in its entirety. Have a report demonstrating all calculations and graphs to present for review.
T90	**D4318**	Plastic Limit – Have a soil sample ready to be mixed that exhibits plasticity or a portion of the liquid limit material may be used as applicable in the test methods. Be able to demonstrate the procedure in its entirety using either the hand rolling method or the plastic limit rolling device.
T92	**D4943**	Mercury use will be required for the AASHTO method, so proper planning and safety equipment should be available. For the ASTM method (wax method), the lab shall have the appropriate wax mixture prepared. For both methods have a dry soil pat available (for volume determination) as well as a moistened specimen for the demonstration.
T99 **T180**	**D698** **D1557**	Have a soil sample ready to demonstrate the procedure. The sample may be pre-mixed to a moisture content near optimum. The compaction of one or more points will be observed. The demonstration can be completed using mechanical or manual equipment with a standard or modified effort. Have a report demonstrating all calculations and graphs to present for review.
T100	**D854**	Have a soil sample ready to demonstrate the procedure. Provide pycnometer calibration data for both AASHTO and ASTM and demonstrate calibration procedures. If the laboratory desires accreditation for both AASHTO and ASTM, both methods will be required to be demonstrated.
T134	**D558**	Have a soil sample and cement ready to mix. All other expectations coincide with those listed in T99 / T180 and D698 / D1557.
T135	**D559**	Have two previously compacted samples advanced to the water bath stage and retain all test data.
T136	**D560**	Have two previously compacted samples advanced to the freezer stage and retain all test data.
T146		Have a dry sample ready to demonstrate the procedure.
T176	**D2419**	Have a sample processed and ready to demonstrate sampling. Be prepared to demonstrate sample selection, testing procedures, and complete the calculations after the test.
T190	**D2844**	Have a sample mixed to the desired water content for compaction. It is also recommended that a separate sample be compacted and ready for expansion - pressure testing. Prepare to demonstrate sample preparation, demonstrate compaction, and expansion - pressure testing.

next

T191	**D1556**	Have a suitable location to complete testing, the proper apparatus, and sand available. (It may be necessary to compact a sample in a controlled environment such as a bucket or wheel-barrow if conditions outside of the laboratory warrant). Be prepared to demonstrate cone calibration, container filling, field testing, moisture content determination, and all calculations associated with the test. In addition, be able to demonstrate the process of determining the sand density.
T193	**D1883**	CBR - Have a sample prepared and ready to demonstrate the compaction procedure and an additional sample soaking. Be able to demonstrate sample preparation, compaction, obtain moisture contents from the sample, and to complete the penetration testing. Have a report demonstrating all calculations. For the Limerock Bearing Ratio, see FM 5-515 below.
T208	**D2166**	Have a field sample ready to be extruded or material available for compaction. Be prepared to demonstrate extrusion, trimming, volume determination, and compressive strength testing. Have a report demonstrating all calculations and graphs to present for review.
T215	**D2434**	Have a dry granular soil available for testing. Be able to demonstrate sample preparation, apparatus setup, and testing. Have a report demonstrating all calculations to present for review.
T216	**D2435** **D4546**	Have a field sample ready to be extruded or material available for compaction. Be prepared to demonstrate extrusion, trimming, volume determination, and consolidation testing using either method A or B. Have a report demonstrating all calculations and graphs to present for review.
T217	**D4944**	Have a field sample containing moisture available for testing. Demonstrate the procedure using the appropriate calcium carbide reagent and have all calibration data available. Be able to complete all calculations at the conclusion of testing.
T224	**D4718**	Have results from a proctor test or field density test, preferably a sample containing at least 5% oversize material, available for calculation of the oversize correction. Have the results of a coarse specific gravity test of the oversize material available if applicable.
T236	**D3080**	Have a field sample ready to be extruded or material available for compaction. Be prepared to demonstrate extrusion, trimming, volume determination, consolidation, and shearing of the test sample. Have a test report demonstrating all calculations and graphs for review. Have equipment calibration records available.
T265	**D2216**	Have a sample containing moisture available for testing.
T267	**D2974**	Have a sample containing organics available for testing.
T288 **T289**		Have a dry soil sample. Demonstrate separation over the No.10 sieve and test procedure.
T296	**D2850**	Have a field sample ready to be extruded or material available for compaction. If possible, also have a specimen ready for the shearing portion of the test. Be prepared to demonstrate extrusion, trimming, volume determination, mounting the specimen, saturation, and shearing of the test sample. Have a report demonstrating all calculations and graphs to present for review.
T297	**D4767**	Have a field sample ready to be extruded or material available for compaction. If possible, also have a specimen ready for the shearing portion of the test. Be prepared to demonstrate extrusion, trimming, volume determination, mounting the specimen, saturation, consolidation, and shearing of the test sample. Have a report demonstrating all calculations and graphs to present for review.
T310	**D6938**	Have a nuclear gauge available for test demonstration on-site. The assessor will view the standard count determination, as well as backscatter and/or direct transmission demonstrations (as applicable). Ensure test site areas are prepared to demonstrate the procedure. If necessary, please coordinate the availability of a field technician to demonstrate the test prior to the assessment. Current gauge calibration records will be examined.

next

T311		Granular Soil Sieve - Have a dry sample of at least 7 kg. Be prepared to demonstrate each applicable step.
	D1140	Have a sample prepared and ready to wash. Be able to demonstrate sample preparation, either method A or B of the washing procedure, and the appropriate calculations.
	D2487 **D2488**	The laboratory will not be expected to have specific samples available for demonstration although a small sample for demonstrating individual soil property determinations may be necessary. The assessor will conduct the evaluation of these methods through a discussion of terminology and by giving example values to the technician for classification.
	D4643	Have a sample containing moisture available for testing.
	D4644	Slake Durability – Have a sample of shale fragments available for testing. Be prepared to demonstrate sample preparation, SDI testing, and the appropriate calculations.
	D4829	Have a sample mixed to the appropriate water content and allow it to sit for at least **16** hours.
	D4972	pH - Have a dry sample and a 0.01 M Calcium Chloride Solution prepared. In addition, have acid potassium phthalate and phosphate buffer solutions available if demonstrating the test using a pH meter.
	D5084	Have a field sample ready to be extruded or material available for compaction. If possible, also have a specimen ready for the permeability portion of the test. Be prepared to demonstrate extrusion, trimming, volume determination, mounting the specimen, saturation, consolidation, and permeation of the test sample. Have a report demonstrating all calculations and graphs to present for review.
	D5731	Have a suitable core specimen available for determining the point load strength.
	D6913	Have a sample ready to process. Be prepared to demonstrate each applicable step and discuss the method of determining which procedure to follow for a given sample.
	D7012	UCS – have a rock core suitable for demonstration of Method C (Uniaxial Compressive Strength of Intact Rock Core Specimens). Be prepared to demonstrate the procedure and calculations.

	Soil Assessment Preparation – Other Methods
FM 5-515	LBR - Have a sample prepared and ready to demonstrate the compaction procedure and an additional sample soaking. Be able to demonstrate sample preparation, compaction, obtain moisture contents from the sample, and to complete the penetration testing. Have a report demonstrating all calculations. For the California Bearing Ratio, see T193 / D1883 above.