

## Ask AASHTO re:source!

By [Tracy Barnhart](#), Quality Manager  
Posted: May 2016



### ***Why doesn't AASHTO re:source provide enough soil to properly perform ASTM D698 and D1557 on the proficiency samples? I don't want to reuse the material for each point!***

This is a question that arises frequently from our customers and I'm happy to answer it. To get the ball rolling on this, let's take a look at the instructions that accompany the AASHTO re:source Soil Classification and Compaction proficiency samples:

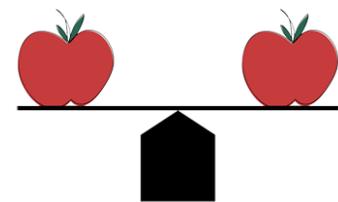
Moisture-Density of Soils (Standard Effort) Using a 2.5-kg (5.5-lb) Rammer T99-10, D698-12: Determine the moisture-density relations using a 101.6-mm (4-in.) diameter mold (AASHTO Method A or ASTM Method A). Report the optimum moisture content to the nearest 0.1 percent. Report the maximum dry density to the nearest 0.1 lb/ft<sup>3</sup>. (**Note: If performing D698, the material must be reused. There is not sufficient soil to prepare a separate sample at each trial moisture content.** After each compaction, take a moisture content specimen and thoroughly break up the remainder of the compacted soil into particles small enough to pass a 4.75-mm (No. 4) sieve as judged by eye and proceed by adding the next water increment. Mix each water increment thoroughly with the soil sample prior to compaction.)



As stated in the instructions, we are aware that sufficient material isn't provided to prepare separate samples for each point. It was a conscious decision on our part to provide the amount of material required for AASHTO T 99, Method A (standard effort), which is approximately 7 lbs, and to request that participants reuse the material. **The main reasons for this decision were efficiency and cost.** We try to make every effort to minimize costs to our customers. Providing additional material would significantly increase costs for production, packaging and shipping. We would have to pass these costs along to our customers.

Approximately 22 tons of material was needed to produce the most recent AASHTO re:source Soil Classification and Compaction samples (171/172). This resulted in 3,660 individual boxes of material being packaged for that sample round. To provide enough material to perform Method A of ASTM D698 without reusing the material, plus including enough additional material to perform the remaining tests, the total sample mass **per box** would have to be approximately 38 lbs. The current sample mass per box is only 12 lbs. That's a significant increase of 217%, and shipping two 38-lb boxes would cost over three times as much as it does now.

What if your laboratory only performs the ASTM version of this test and never the AASHTO version? Will that have a negative impact on your testing results? No worries! We understand that the values for optimum moisture content and maximum density are slightly different when the material is reused, as opposed to using separate samples for each point. We also understand that the specified testing procedure for proficiency testing is not in conformance with the ASTM test methods, and that the process of recompacting the material is foreign to some customers. **However, keep in mind that the purpose of our proficiency testing program is to compare results from one laboratory to another.** Variation in AASHTO testing is similar to that for ASTM testing, and all laboratories enrolled in the program are



reusing the material and performing the test in the same manner. Therefore, it levels the playing field for everyone and we are comparing apples to apples when the statistical analysis is performed.



### ***Why aren't extra proficiency samples (XPS) available for emulsified asphalt and paint?***

Great question...with a simple answer! The limited shelf life of emulsified asphalt and paint prevents us from providing those materials as extra proficiency samples. We are concerned that environmental factors such as light and temperature may adversely affect the quality and properties of those materials over time. Another thing to consider is loss of stability in the material. The last thing we want to do is ship you a paint or emulsion sample that has become separated.

Customers are welcome to purchase [extra proficiency samples](#) for all of the other materials included in the scope of the AASHTO re:source Proficiency Sample Program. These samples can be used for training and certifying technicians, verifying testing results and equipment, etc.

Please email me at [tbarnhart@ashtoresource.org](mailto:tbarnhart@ashtoresource.org) with anything else you are dying to know!

<http://ashtoresource.org/university/newsletters/newsletters/2016/08/05/ask-aashto-re-source-May-2016>