AMS 2431/1D & 2431/2D section 3.9.1 current wording

The size of shot, specified in 3.8, shall be determined by using a 100-gram (approximately) sample and screening as follows: The required standard testing sieves in accordance with ASTM E 11 shall be nested in ascending order with a pan on the bottom. The 100-gram sample shall be poured onto the top sieve and the nested sieves shall be placed in a rotating and tapping type of shaking machine. **The rotating speed shall be 275 to 295 rpm and the tapping speed shall be 145 to 160 taps per minute.** Shaking and tapping shall be continued for 5 minutes ± 5 seconds for sieves 30 mesh and coarser and 10 minutes ± 5 seconds for sieves finer than 30 mesh. After shaking, the percentage of shot on each screen shall be determined by weighing the shot retained on each screen.

Proposed wording

The size of shot, specified in 3.8, shall be determined by using a 100-gram (approximately) sample and screening as follows: The required standard testing sieves in accordance with ASTM E 11 shall be nested in ascending order with a pan on the bottom. The 100-gram sample shall be poured onto the top sieve and the nested sieves shall be placed in a rotating and tapping type of shaking machine. **The rotating speed shall be 270 to 300 rpm and the tapping speed shall be 140 to 160 taps per minute.** Shaking and tapping shall be continued for 5 minutes ± 5 seconds for sieves 30 mesh and coarser and 10 minutes ± 5 seconds for sieves finer than 30 mesh. After shaking, the percentage of shot on each screen shall be determined by weighing the shot retained on each screen.

Revise AMS 2431 section 3.3.4 to add:

The following items are **<u>required</u>** to produce an accurate sample for particle analysis. **See Table I for applicability.**

- 16-1 Sample Reducer (to reduce bulk material i.e. 50 pound bag to 3.125 pounds in a single pass)
- Sample Splitter or Jones type riffle (This is used to split the sample in half while maintaining the particle size distribution of the original sample)
- Sieve shaker (rotating and tapping type with digital timer with accuracy of +/-5 seconds
- Sieves set in accordance with ASTM E-11
- Digital Balance having a capacity of at least 150 g and a sensitivity of 0.01 g.
- Stereoscopic Microscope capable of at least 30x magnification
- Standard Micrometer

Equipment	16-1 Reducer	Sample Splitter	Sieve Shaker	Sieve Set	Digital Balance	Stereoscopic Microscope	Standard Micrometer
Specification							
AMS 2431/1	YES	YES	YES	YES	YES	YES	NO
AMS 2431/2	YES	YES	YES	YES	YES	YES	NO
AMS 2431/3	YES	YES	NO	NO	YES	YES	NO
AMS 2431/4	YES	YES	NO	NO	YES	YES	NO
AMS 2431/5	YES	YES	NO	NO	YES	NO	YES
AMS 2431/6	YES	YES	YES	YES	YES	YES	NO
AMS 2431/7	YES	YES	YES	YES	YES	YES	NO
AMS 2431/8	YES	YES	NO	NO	YES	YES	NO

TABLE I

AMS 2431 -1 and -2 proposed changes Walter Beach

Rational

AMS 2431B
Section 3.3.4 Size shall be in accordance with ASTM E 11 , ASTM B 214, and the applicable detail specification.

- ASTM B 214 calls for The rotating speed to be 270 to 300 rpm and the tapping speed to be 140 to 160 taps per minute.

By revising AMS 2431, /1 & /2 to be in accordance with ASTM B 214 we remove the duel dimensioning issue between the two. It also resolves the issue the Tyler Ro-Tap. Potentially resolves European issues regarding the differences in electrical current.

Specification	Section	RPM	Taps per Minute
ASTM B214-07	5.2	270-300	140-160
AMS 2431B	3.3.4 (ASTM B214)	270-300	140-160
AMS 2431/1D	3.9.1	275-295	145-160
AMS 2431/2D	3.9.1	275-295	145-160
SAE J444	3.1.1.1 / 3.1.1.2	275-295	145-160
AC7117	6.1.3 (SAE J444)	275-295	145-160
Tyler Ro-Tap		270-290	145-155

Table II

Table II shows that the base requirement is 270-300 RPM / TAPS per minute of 140-160 the industry standard sieve tester is the Ro-Tap which per the manufacture operates at 270-290 RPM and 145-155 Taps per minute.

SAE J444 and Nadcap AC7117 will also need to be revised.

AMS 2431B does not clearly identify the all necessary accessory equipment needed to produce and process an accurate sample of peening media.