

Cast Shot and Grit Size Specifications for Peening and Cleaning**RATIONALE**

Due to NADCAP audit findings on the all pass sieves in Figure 1 and 2 the group is requesting the Figure 1 and 2 all pass changed to 0% and the following be added to the reference section. ASTM E 29 Using Significant Digits in Test Data to Determine Conformance with Specification. Along with the following statement as recommend in E-29. The following applies to all specified limits in this standard: For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM Practice E 29.

This document has been reaffirmed to comply with the SAE 5-Year Review policy.

1. SCOPE

This SAE Recommended Practice pertains to blast cleaning and shot peening and provides for standard cast shot and grit size numbers. For shot, this number corresponds with the opening of the nominal test sieve, in ten thousandths of inches¹, preceded by an S. For grit, this number corresponds with the sieve designation of the nominal test sieve with the prefix G added. These sieves are in accordance with ASTM E 11.

The accompanying shot and grit classifications and size designations were formulated by representatives of shot and grit suppliers, equipment manufacturers, and automotive users.

2. REFERENCES**2.1 Applicable Publications**

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM E 29 Using Significant Digits in Test Data to Determine Conformance with Specification

ASTM E 11 Standard Specifications for Wire Cloth Sieves for Testing Purposes

¹ Example: S-550 indicates a cast steel shot identified by a nominal sieve opening of 0.0555 in.

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2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

- SAE J445 Metallic Shot and Grit Mechanical Testing
- SAE J827 High-Carbon Cast-Steel Shot
- SAE J1993 High-Carbon Cast Steel Grit
- SAE J2175 Specifications for Low Carbon Cast Steel Shot

3. TESTING PROCEDURE - SIEVE ANALYSIS

3.1 Equipment

3.1.1 A rotating and tapping type of testing machine shall be used.

3.1.1.1 The shaking speed shall be 270 to 300 rpm.

3.1.1.2 The taps per minute shall be 140 to 160 when tapping machines are used.

3.2 Sieves

3.2.1 The testing sieves shall be in accordance with ASTM E 11. They shall be of the 203 mm (8 in) diameter series, of either 25 mm (1 in) or 51 mm (2 in) height.

3.3 Procedure

3.3.1 A 100 g sample of the shot or grit shall be obtained from a representative quantity.

3.3.2 The sample shall be placed on the top sieve of a stack of three or four sieves, depending on media and size (Figures 1 and 2). Nest the selected sieves and fit a pan to the bottom sieve.

3.3.3 The sample shall be run in the testing machine for 5 min \pm 5 s for sizes using sieve designation 35 or coarser and 10 min \pm 5 s for sizes using sieve designation finer than 35.

3.3.4 The stack of sieves shall be removed from the testing machine and the percentage of total weight shall be recorded for the media remaining on each sieve.

3.4 Any alternate method agreed upon by the supplier and the user which gives equivalent results will be acceptable.

3.5 For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM E 29.

4. NOTES

4.1 Marginal Indicia

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