



SURFACE VEHICLE RECOMMENDED PRACTICE

J444™

JUN2023

Issued 1946-01
Reaffirmed 2017-10
Revised 2023-06

Superseding J444 OCT2017

Cast Shot and Grit Size Specifications for Cleaning and Peening

RATIONALE

Five-Year Review.

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 E11.

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 Documents

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 E11 Standard Specifications for Wire Cloth Sieves for Testing Purposes

ASTM E29 Using Significant Digits in Test Data to Determine Conformance with Specification

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

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2023 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
http://www.sae.org

For more information on this standard, visit
https://www.sae.org/standards/content/J444_202306

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 +1 724-776-4970 (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 E11. They shall be of the 203 mm (8 inch) diameter series, of either 25 mm (1 inch) or 51 mm (2 inches) 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 minutes $\pm$ 5 seconds for sizes using sieve designation 35 or coarser and 10 minutes $\pm$ 5 seconds 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 E29.

4. NOTES

4.1 Revision Indicator

A change bar (|) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

SAENORM.COM : Click to view the full PDF of J444_202306