AEROSPACE MATERIAL SPECIFICATION

AMS2430™	REV. U
Issued 1948-09 Revised 2018-04 Superseding AMS2430T	

Shot Peening

RATIONALE

AMS2430U results from a Five-Year Review and update of this specification that revises Ordering Information, 1.1 Purpose, 1.2 Application, 1.6 Legacy Provision, 1.7 Manual and Batch Peening, 3.1 Peening Processes, Table 2A, Table 2B, 3.6.1.1 Intensity, addition of Appendix A Manual Peening and the addition of Appendix Batch Peening.

NOTICE

ORDERING INFORMATION: The following information shall be provided to the peening processor by the purchaser.

- AMS2430U
- Purchase order number and revision level
- Part number and revision level
- Quantity of parts
- Part alloy and tensile strength and/or hardness
- Media type, hardness, size in accordance with AMS2431. (3.2.1)
- Test strip type. (3.3.2)
- Pre-shot peen cleaning method. (3.4.3.2)
- Intensity requirement. (3.6.1)
- Intensity verification locations. (3.6.1.1 and 3.6.1.2)
- Coverage requirement. (3.6.2)
- Coverage verification method and if use of fluorescent tracer or dye marker inks requires cognizant engineering organization approval. (3.6.2.1)
- Part locations to be shot peened, free from peening, or peening optional. (3.6.2.2 and 3.6.2.3)

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

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http://www.standards.sae.org/AMS2430U

- If externally applied forces are permitted on part during processing. (3.5.2)
- If purchaser requires approval of the processor's quality control system (3.8) and shot peening parameter sheet prior to production. (4.3.2 and 3.8)
- If purchaser allows the use of alternative intensity verification methods. (3.8.1.1)
- Post-shot peen cleaning method: include instruction and procedure to remove iron contamination, if applicable; and, if purchaser requires peening processor to perform this operation. (3.10.1)
- Part preservation/shipping method. (3.10.2 and Section 5.)
- Specific authorization for manual or batch peening. (1.7)

1. SCOPE

1.1 Purpose

This specification covers the requirements for shot peening of surfaces of parts by impingement of media, including metallic, glass, or ceramic shot.

1.2 Application

Shot peening is typically used to induce residual surface compressive stresses in metal parts to increase fatigue strength and resistance to stress-corrosion cracking for parts such as axles, springs (helical, torsional and leaf), gears, shafting, aircraft landing gear, structural parts, and similar items but usage is not limited to such applications.

1.3 Related peening processes, such as peen forming and straightening peening for prevention of intergranular corrosion, and peening to produce a surface texture, are beyond the scope of this specification.

1.4 Shot peening in accordance with AMS2432 meets or exceeds the requirements of AMS2430. Part certification in accordance with AMS2432 is acceptable in addition to AMS2430 (see 4.5).

1.5 Shot peening design guidance for the cognizant engineering organization is documented in ARP7488.

1.6 Legacy Provision

When AMS-S-13165 or MIL-S-13165 is specified and a peening procedure has been approved by or acceptable to the purchaser or cognizant engineering organization, the peening processor may continue to use the previously approved or accepted equipment, practices, and test methods to satisfy the specified requirements of AMS2430U, subject to approval by the purchaser.

1.7 Manual and Batch Peening

Unless otherwise specified (see ordering information), automatic peening shall be performed when AMS2430 is called out.

1.7.1 Manual peening processes and machinery shall only be used when specifically authorized (see Appendix A).

1.7.2 Batch peening processes, such as tumble or barrel peening, and machinery shall only be used when specifically authorized (see Appendix B).

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

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.

AMS2431 Peening Media, General Requirements

AMS2432 Shot Peening, Computer Monitored

ARP7488 Peening Design and Process Control Guidelines

SAE J442 Test Strip, Holder, and Gage for Shot Peening

SAE J443 Procedures for Using Standard Shot Peening Almen Strip

SAE J2277 Shot Peening Coverage Determination

2.2 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 B214 Standard Test Method for Sieve Analysis of Metal Powders

ASTM E11 Wire Cloth and Sieves for Testing Purposes

3. TECHNICAL REQUIREMENTS

3.1 Peening Processes

3.1.1 Manual and Batch Peening

Unless otherwise specified (see ordering information), automatic peening shall be performed when AMS2430U is called out.

3.1.1.1 Manual peening processes and machinery shall only be used when specifically authorized (see Appendix A).

3.1.1.2 Batch peening processes, such as tumble or barrel peening, and machinery shall only be used when specifically authorized (see Appendix B).

3.2 Peening Media

3.2.1 New Media

3.2.1.1 New media shall conform to the requirements of AMS2431.

3.2.1.2 If conditioned cut wire shot is permitted by the cognizant engineering organization, conditioned carbon steel cut wire shot in accordance with AMS2431/3 or AMS2431/8 or conditioned stainless-steel cut wire shot in accordance with AMS2431/4 and of the equivalent size corresponding to the specified cast steel shot in Table 1, may be used only when the shot hardness is the same or greater than the specified cast steel shot.

3.2.1.3 For steels heat treated above 200 ksi, hard media in accordance with AMS2431/2, /7, or /8 is required if media hardness is not specified on the part drawing or by the cognizant engineering organization.

3.2.2 In-Process Media

Media in use during the process shall be inspected and conform to the size and shape requirements in accordance with Tables 1, 2A, and 2B and Figures 1 and 2.