



AEROSPACE MATERIAL SPECIFICATION

AMS2757™**REV. C**

Issued	1998-10
Revised	2004-11
Reaffirmed	2010-05
Stabilized	2019-03

Superseding AMS2757B

Gaseous Nitrocarburizing

RATIONALE

AMS2757C stabilizes this document because equivalent technical requirements are contained in AMS2759/13.

STABILIZED NOTICE

AMS2757C has been declared "STABILIZED" by AMS Committee B Finishes, Processes and Fluids. This document will no longer be updated and may no longer represent standard industry practice. The last technical update of this document occurred in November, 2004. Users of this document should refer any certification issues (e.g., exceptions listed on the certification report) to the cognizant engineering organization for their disposition.

NOTE: In many cases, the purchaser may be a sub tier supplier and not the cognizant engineering organization.

AMS Committee B recommends that the following technically equivalent (e.g., properties, fit, form, function) specifications be used for future procurement. This listing does not constitute authority to substitute this specification for the "STABILIZED" specification.

AMS2759/13 Gaseous Nitrocarburizing

SAE Technical Standards Board 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 © 2019 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>

SAE WEB ADDRESS:

Full document details: [SAE AMS2757C](#)

SAE values your input. To provide feedback on this Technical Report, please visit <http://standards.sae.org/AMS2757C>

1. SCOPE:

1.1 Purpose:

This specification covers the engineering requirements for producing a continuous thin epsilon-iron-carbonitride compound layer on parts by means of a gaseous, low temperature process, and properties of the case.

1.2 Application:

This process has been used typically to increase wear resistance and fatigue and to improve corrosion resistance on ferrous metals, such as carbon, low-alloy, and tool steels, and cast irons, but usage is not limited to such applications. This process can be selectively applied to wear areas of the component.

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, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org.

AMS 2408	Plating, Tin
AMS 2418	Plating, Copper
AMS 2429	Masking, Bronze Plate, Nitriding Stop-Off, 90Cu - 10Sn
AMS 2750	Pyrometry
AMS 2759	Heat Treatment of Steel Parts, General Requirements
ARP1820	Chord Method of Evaluating Surface Microstructural Characteristics
SAE J423	Methods of Measuring Case Depth
SAE J864	Surface Hardness Testing With Files

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 or www.astm.org.

ASTM E 384 Microhardness of Materials

2.3 ASM Publications:

Available from ASM International, 9639 Kinsman Road, Materials Park, OH 44073-0002 or www.asm-intl.org.

ASM Handbook, 9th Edition, Metallography and Microstructure

3. TECHNICAL REQUIREMENTS:

3.1 Processing Equipment:

Parts to be nitrocarburized shall be processed in an integral quench, sealed retort, fluidized bed, or atmosphere-type furnace conforming to AMS 2759. Furnace temperature uniformity requirements shall be ± 15 °F (± 8 °C).

3.1.1 Atmosphere: The nitrocarburizing atmosphere shall consist of a mixture of ammonia and a carrier gas. Acceptable carrier gases are: endothermic, refined exothermic gas, and high purity nitrogen; a hydrocarbon gas and/or oxygen-bearing gas additions may be used for enrichment.

3.1.2 Furnace Controls: Shall conform to AMS 2750.

3.1.3 Thermocouples: When load thermocouples are required, they shall be sheath-protected to prevent deterioration due to furnace atmospheres.