



AEROSPACE MATERIAL SPECIFICATION

AMS7498™**REV. S**Issued 1955-03
Revised 2022-05

Superseding AMS7498R

Rings, Flash Welded
Titanium and Titanium Alloys

RATIONALE

AMS7498S results from a Five-Year Review and update of this specification. Changes have been made to update general agreement wording to prohibit unauthorized exceptions (3.5, 4.5, 4.5.1, 8.5), clarify wording related to proof testing of welds (sizing) (3.2.5.3), and tensile properties through welded area (3.3.1), update applicable documents (Section 2, 8.2), quality (3.4.2), acceptance tests (4.2.1), ordering information (8.6), and allow use of the immediate prior revision of this specification (8.4).

1. SCOPE

1.1 Form

This specification covers flash welded rings made of titanium and titanium alloys.

1.2 Application

These rings have been used typically for parts such as flanges, but usage is not limited to such applications.

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.

AMS2750 Pyrometry

AS7766 Terms Used in Aerospace Metals Specifications

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 E8/E8M Tension Testing of Metallic Materials

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 © 2022 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 AMS7498S

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS7498S/>

Documents

Document Sharing Hub

3. TECHNICAL REQUIREMENTS

3.1 Material

Shall be as specified on the part drawing.

3.2 Fabrication

3.2.1 Forming

Rings shall be formed from rolled, extruded, or forged shapes. Grain flow in the formed rings shall be substantially circumferential.

3.2.2 Preparation for Welding

3.2.2.1 Formed rings shall be clean and free from foreign materials in the area of electrode contact and at the surfaces to be welded.

3.2.2.2 Formed rings may be preheated, before welding, as agreed upon by purchaser and producer.

3.2.3 Welding

3.2.3.1 The ends of the formed rings shall be flash butt-welded together with only one weld per ring. Welding shall be performed on a machine provided with control of the following:

Feed of joint during flashing

Rate and distance of travel of the sections to be welded

Secondary voltage and current magnitude

Timing and current cut off

3.2.3.2 The flash shall be maintained during the flashing interval of the welding operation. The amount of manual flashing used for preheating shall be limited to 10% of the total flashing distance. The machine shall be capable of repeating the sequence of operations independently of the skill of the machine operator. A record of all machine settings and sequence of operations for each lot shall be maintained in accordance with purchaser's requirements.

3.2.4 Heat Treatment

Welded rings shall be annealed as in 3.2.4.1 or solution heat treated as in 3.2.4.2, as applicable.

3.2.4.1 Annealing

Rings, except as specified in 3.2.4.1.1 and 3.2.4.1.2, shall be annealed by heating to 1300 °F ± 25 °F (704 °C ± 14 °C), holding at heat for not less than 2 hours, and cooling in air to room temperature. Pyrometry shall be in accordance with AMS2750.

3.2.4.1.1 If the drawing or material specification specifies the annealing cycle, the rings shall be annealed as specified.

3.2.4.1.2 If neither the drawing nor the material specification specifies a required annealing cycle and the producer of the material reports use of an annealing temperature higher than 1300 °F (704 °C), rings may be annealed by heating to a temperature as high as the reported annealing temperature.

3.2.4.2 Solution Heat Treatment

The rings shall be solution heat treated when specified in the applicable material specification or drawing.