



AEROSPACE STANDARD

AS5528™**REV. F**Issued 2005-07
Revised 2023-01

Superseding AS5528E

Lubricant Application, Solid Film, Heat Cured, Corrosion Inhibiting

RATIONALE

Address 3.2.1 heading. Allow flexibility for pretreatments provided performance requirements are met.

1. SCOPE

This SAE Aerospace Standard (AS) establishes the surface pretreatment, temperature, and baking time required to cure AS5272 lubricant when it is applied over the surfaces of manufactured parts of various metals.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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.

AMS2488	Anodic Treatment - Titanium and Titanium Alloys Solution pH 13 or Higher
AS5272	Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting, Procurement Specification
AS8879	Screw Threads - UNJ Profile, Inch Controlled Radius Root with Increased Minor Diameter

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 D1125	Standard Test Methods for Electrical Conductivity and Resistivity of Water
ASTM D1193	Standard Specification for Reagent Water
ASTM D1732	Standard Practices for Preparation of Magnesium Alloy Surfaces for Painting
ASTM D2510	Standard Test Method for Adhesion of Solid Film Lubricants

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Full document details: SAE AS5528F

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Documents

Document Sharing Hub

ASTM D3330/D3330M Standard Test Method for Peel Adhesion of Pressure Sensitive Tape

ASTM D3735 Standard Specification for VMP Naphthas

ASTM F22 Standard Test Method for Hydrophobic Surface Films by the Water-Break Test

2.3 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

MIL-C-81302 Cleaning, Compound, Solvent, Trichlorotrifluoroethane

MIL-T-81533 Trichloroethane 1,1,1, (Methyl Chloroform) Inhibited, Vapor Degreasing

3. REQUIREMENTS

3.1 General Metal Preparation Instructions

Do not touch the pretreated surfaces with bare hands. Stir the lubricant until thoroughly mixed in accordance with manufacturer's recommendation. Any deionized water used shall have a resistivity not less than 1 MΩ·cm, when tested in accordance with ASTM D1125 or ASTM D1193. Ordinary tap water shall not be used. The grit blast machine and media shall be restricted to a single material application. Apply the lubricant by brushing, dipping, or spraying.

3.2 Application pretreatment and cure requirements, unless otherwise specified on the drawing:

3.2.1 Application on Aluminum and Aluminum Alloys, Copper, Steel and Stainless Steel Materials

Preclean the surfaces to be coated with Aliphatic Naphtha conforming to ASTM D3735 or any environmentally safe cleaner that sufficiently cleans surfaces to meet the requirements of ASTM F22 and does not harm the surface. Abrasive blast the surfaces with 180 to 220 grit clean aluminum oxide for copper, steel, and stainless steel materials. Other methods of surface preparation are acceptable as long as all end item performance requirements are met.

3.2.2 Application on Titanium and Titanium Alloys

Preclean the surfaces to be coated with Aliphatic Naphtha conforming to ASTM D3735 or any environmentally safe cleaner that sufficiently cleans surfaces to meet the requirements of ASTM F22 and does not harm the surface. Chlorinated solvents are not permitted. Unless otherwise specified, abrasive-blast the surface with 180 to 220 grit aluminum oxide or alkaline anodize per AMS2488, Type II.

3.2.3 Application on Cadmium Plated Substrate Metal

Film adhesion (see 3.5) is dependent on the active surface. Application of AS5272 should take place as soon as possible after plating.

3.2.4 Cure

Permit the coated parts to air dry for at least 30 minutes (or flash cure at 149 to 174 °F (65 to 79 °C) for 10 to 30 minutes). Bake the part so that the coated surface remains at 400 °F ± 27 °F (204 °C ± 15 °C) for at least 1 hour at temperature for AS5272 Types II and III, or 302 °F ± 27 °F (150 °C ± 15 °C) for at least 1 hour at temperature for AS5272 Type I, or 2 hours at temperature for AS5272 Type III, unless otherwise specified by the manufacturer in writing, but not to exceed 350 °F for types requiring the lower temperature cure. Alternate cure cycles cannot be used on temperature sensitive substrates that would be annealed or otherwise adversely affected by a higher temperature cure. The curing time shall be counted from the time the part reaches the cure temperature, not when the part is first subjected to heat.

3.3 Film Appearance

The bonded solid film lubricant, when examined as specified in 4.4, shall be uniform in color, smooth, free from any cracks, scratches, pinholes, blisters, bubbles, runs, sags, foreign matter, grit, or rough particles.