

Thermal Anti-Icing Equipment, Wing and Empennage

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FOREWORD

This document has been taken directly from U.S. Military Specification MIL-T-18607 and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, (b) the use of the existing government specification or standard format, and (c) the exclusion of any qualified product list (QPL) sections.

1. SCOPE:

1.1 Scope:

This specification covers the general requirements for the design, installation, and performance of thermal anti-icing equipment for the wings and empennage surfaces in aircraft.

1.2 Classification:

There shall be no restriction as to the type of thermal anti-icing equipment used. It is considered that either a system using the exhaust heat of the engine, or combustion heaters will be acceptable for use as the prime source of heat. For clarity, thermal anti-icing systems shall be designated as:

Exhaust Heat Exchanger Anti-Icing System
Combustion Heater Anti-Icing System
Compressor Bleed Air Anti-Icing System

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2. APPLICABLE DOCUMENTS:

- 2.1 The following specifications, standards, and publications of the issue in effect on date of invitation for bids, form a part of this specification.

SPECIFICATIONS

FEDERAL

L-T-101	Tape, Shielding and Identification; Pressure Sensitive
QQ-P-416	Plating, Cadmium (Electrodeposited)
WW-T-787	Tubing, Aluminum Alloy 52S, Round Seamless, Drawn

MILITARY

JAN-A-669	Compound; Anti-seize; White Lead Base, General Purpose (for Threaded Fittings)
MIL-C-5015	Connectors; Electrical, "AN" type
MIL-B-5087	Bonding; Electrical (for Aircraft)
MIL-W-5088	Wiring, Aircraft, Installation
MIL-E-5272	Environmental Testing, Aeronautical Equipment, General Specification
MIL-H-5484	Heaters; Aircraft, Combustion Type
MIL-F-5509	Fittings, Fluid Connection
MIL-E-5557	Enamel; Heat Resisting, Glycerol Phthalate, Black
MIL-F-5572	Fuel; Aircraft Reciprocating Engine Grades 80, 91/96, 100/130, 115/145
MIL-I-6051	Interference Limits and Methods of Measurement; Aircraft Radio and Electronic Installations
MIL-P-6889	Primer, Zinc Chromate, for Aircraft Use
MIL-E-7080	Electrical Equipment; Installation of Aircraft, General Specification
MIL-P-7105	Pipe Threads, Taper, Aeronautical National Form, Symbol ANTP
MIL-S-7742	Screw Threads, Standard, Aeronautical
MIL-A-8625 (ASG)	Anodic Coatings, for Aluminum and Aluminum Alloys
MIL-F-17874 (Aer)	Fuel Systems; Aircraft, Installation and Test of
MIL-C-18591 (Aer)	Carbon Monoxide Elimination; Requirement for
MIL-H-18609 (Aer)	Heating and Ventilating Equipment, Aircraft; Installation of
MIL-E-25109 (ASG)	Engines, Aircraft, Reciprocating, General Specification for

NAVY DEPARTMENT

General Specifications for Inspection of Material

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2.1 (Continued):

STANDARDS

AIR FORCE - NAVY AERONAUTICAL

AND-10375 Colors; Fluid Line Identification

PUBLICATIONS

AIR FORCE - NAVY AERONAUTICAL (BULLETIN)

ANA-143 Specifications and Standards, Use of

(When requesting specifications, standards, drawings, and publications refer to both title and number. Copies may be obtained upon application to the Commanding Officer, U.S. Naval Air Station, Johnsville, Pennsylvania, Attention Technical Records Division)

2.2 Other Publication:

The following document forms a part of this specification. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

NACA T.N. No. 1472 "The Calculation of the Heat Required for Wing Thermal Ice Prevention in Specified Icing Conditions."

Carr B. Neal, Jr., Norman R. Bergum, David Sukoff, and Bernard A. Schloff,
December 1947.

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington 25, D.C.)

3. REQUIREMENTS:

3.1 Surfaces to be protected:

The anti-icing system shall protect the surfaces of the aircraft against the accumulation of ice as outlined in the following paragraphs.

- 3.1.1 All portions of the wing(s) and stabilizing surfaces which are exposed to ice accumulations during flight under the conditions specified in 3.2, 3.3, 3.3.1, 3.3.2 and 3.3.3 shall be protected by the anti-icing system.