



METRIC AEROSPACE STANDARD

MA1565

REV. C

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Superseding MA1565B

Inserts, Screw Thread, Helical Coil Metric Series
Procurement Specification For

FSC 5340

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature. This standard has been stabilized.

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1. SCOPE

1.1 Scope

This SAE Metric Aerospace Standard defines the requirements for corrosion resistant steel helical coil metric series screw thread inserts made from formed wire, the inner surfaces of which, after assembly, provide internal threads of the diameter and pitch specified on the drawing.

1.2 Classification

Inserts shall be of the following types and shall conform to their applicable standards:

- a. Free Running
- b. Screw Locking (Self-Locking)

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 724-776-4970 (outside USA), www.sae.org.

AMS2400	Plating, Cadmium
AS1310	Fastener Torque for Threaded Applications, Definitions of
MA1370	Screw Threads - MJ Profile, Metric
MA1567	Insert, Screw Thread, Helical Coil Metric Series, Standard Assembly Dimensions for
MA3279	Insert, Screw Thread, Helical Coil, Metric Series, Free Running, CRES, Uncoated
MA3280	Insert, Screw Thread, Helical Coil, Metric Series, Free Running, CRES, Dry Film Lubricated
MA3281	Insert, Screw Thread, Helical Coil, Metric Series, Free Running, CRES, Cadmium Plated
MA3329	Insert, Screw Thread, Helical Coil, Metric Series, Screw Locking, CRES, Uncoated
MA3330	Insert, Screw Thread, Helical Coil, Metric Series, Screw Locking, CRES, Dry Film Lubricated
MA3331	Insert, Screw Thread, Helical Coil, Metric Series, Screw Locking, CRES, Cadmium Plated
AS7245	Inserts, Screw Thread, Helical Coil 19Cr-9.2Ni, Corrosion Resistant Steel, Procurement Specification For

2.2 ASME Publications

Available from American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-29000, Tel: 973-882-1170, www.asme.org.

ASME B1.13M	Metric Screw Threads - M Profile
ANSI/ASME B1.21M	Metric Screw Threads - MJ Profile

3. REQUIREMENTS

3.1 Material

3.1.1 Composition

The chemical composition of the wire shall conform to material composition requirements of AS7245.

3.1.2 Properties

3.1.2.1 Tensile Strength

Wire tensile strength shall be in accordance with AS7245.

3.1.2.2 Bending

Wire shall withstand, without cracking, bending when tested in accordance with AS7245.

3.2 Design

The insert shall conform to the requirements of the applicable drawing and of this document.



3.2.1 Removal Notch

The tang removal notch shall be located as shown on the drawing and shall be of such depth that the insert may be installed without failure of the tang and that the tang may be removed, after assembly, without affecting the function of the installed insert.

3.2.2 Threads

The inserts, when assembled in threaded holes conforming to MA1567, shall form threads conforming to ASME B1.13M, except for the locking feature of MA1565 Self-Locking inserts which shall conform to the applicable insert drawing. The assembled insert (both types) shall accept and function with parts externally threaded to MA1370, ASME B1.13M, and ANSI/ASME B1.21M.

3.3 Self-Locking Torque

MA1565 Self-Locking inserts, when assembled in threaded holes conforming to MA1567 and tested in accordance with 4.4.4, shall provide a frictional lock to retain the bolt within the torque limits specified in Table 1. For definitions of torque terms, see AS1310.

3.4 Workmanship

The formed wire shall be of uniform quality and temper; smooth, clean, free from kinks, waviness, splits, cracks, laps, seams, scale, segregation, and other defects which may impair the serviceability of the insert.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of inserts shall supply all samples and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.6. Purchaser reserves the right to perform such confirmatory testing as he/she deems necessary to ensure that the inserts conform to the requirements of this document.

4.2 Responsibility for Compliance

The manufacturer's system for parts production shall be based on preventing product defects, rather than detecting the defects at final inspection and then requiring corrective action to be invoked. An effective manufacturing in-process control system shall be established, subject to the approval of the purchaser, and used during production of parts.

4.3 Classification of Tests

The inspection and testing of inserts shall be classified as either qualification tests or acceptance tests.

4.3.1 Qualification Tests

Qualification tests shall be performed on inserts selected from the first lot of inserts of each size produced by a supplier and shall be repeated whenever a significant change is made in the manufacturing process. The qualification test shall consist of the tests and inspections defined in Table 2. The removal notch tests shall be performed on five samples each. All other qualification tests shall be conducted in accordance with acceptance test requirements. The acceptance number in all cases is ZERO.

4.3.2 Acceptance Tests

Acceptance tests shall consist of the tests and inspection defined in Table 2. Acceptance tests shall be performed on a sampling basis. Sampling shall be in accordance with 4.3.2.1 and 4.3.2.2. The acceptance number in all cases is ZERO.