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MILITARY STANDARD

FASTENER TEST METHODS

METHOD 25,

DRIVING RECESS TORQUE QUALITY CONFORMANCE TEST



FSC 53GP

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DEPARTMENT OF DEFENSE
WASHINGTON, DC 20301

Fastener Test Methods, Method 25, Driving Recess Torque Quality Conformance
Test

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FOREWORD

This standard sets forth a standard test procedure to determine the torque capability of a fastener's driving recess.

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1. SCOPE

1.1 Applicability. This method describes standard test procedures for verification of the torque capability of driving recesses. It is intended to be used as a test procedure for quality conformance testing of fasteners with driving recesses.

2. REFERENCED DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. Unless otherwise specified, the following specifications, standards and handbooks of the issue listed in the current Department of Defense Index of Specifications and Standards (DoDISS) and the supplement thereto (if applicable), form a part of this standard to the extent specified herein.

SPECIFICATIONS

FEDERAL

GGG-W-686 Wrench, Torque

MILITARY

MIL-B-9946 Bits, Screwdriver, General Specification for

(Copies of specifications, standards, handbooks, drawings and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

3. DEFINITIONS

Not applicable.

4. GENERAL REQUIREMENTS

4.1 Test apparatus.

4.1.1 Fixture. The test fixture shall be capable of maintaining alignment with the fastener axis, ensuring nonrotation of the fastener, applying a specified end load and applying torque in both clockwise and counterclockwise directions. The fixture shall not resist any tendency of the driver bit to cam out of the recess during the test.

4.1.2 Torque wrench. Hand torque wrenches shall conform to the accuracy requirements of GGG-W-686.

4.1.3 Torsion machine. Torsion machines or other power tools shall conform to applicable requirements.

4.1.4 Driver bit. The driver bits shall be appropriate for the recess being tested as defined in the applicable Military Standards, Industry Standards or manufacturer's data. Unless otherwise specified, the driver bit shall be in accordance with the requirements of MIL-B-9946 or Industry Standards.

4.2 Test specimens. The shank of the fastener may be modified to ensure nonrotation during testing. The clamp or nonrotation device shall be located within two diameters of the head to shank juncture.

5. DETAIL REQUIREMENTS

5.1 Test procedures.

5.1.1 Test torque verification.

- a. Measure flatness of surface at the recess periphery and record flatness.
- b. Place fastener in the test fixture.
- c. Mate the driver bit with the recess of the fastener, ensuring that the bit is free to move in or out of the recess but that the bit axis is constrained within 1° of angular alignment with the fastener axis.
- d. Apply an end load as specified in the fastener procurement document or other applicable document. If none is specified, apply an end load of 20 ± 0.5 pounds (89 ± 2.2 Newtons). The total end load shall be effective at bit/fastener juncture.
- e. With the bit mated to the recess and the end load applied (but no torque applied), zero the torque measuring device.
- f. Apply the torque slowly in the installation direction at a smooth, continuous rate until the minimum torque, as specified in the applicable fastener procurement specification, has been reached.
- g. Record the applied torque and mode of failure, if any.
- h. Disengage the fastener and driver.
- i. Visually examine recess in accordance with the applicable procurement specification and record condition of recess. Measure and record flatness of surface at recess periphery.

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- j. Repeat a thru i, applying torque in the removal direction, using the same driver bit and fastener.

6. NOTES

6.1 Test report. Unless otherwise specified when the procurement specification cites this method, certification of conformance shall consist of a statement to the effect that the fasteners have passed or failed.

This statement shall appear on the vendor test report or product certification for the fasteners tested.

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