

FED. SUPPLY CLASS

53GP

FOREWORD

This standard sets forth a standard test method for determining the capability of externally threaded fasteners to withstand the accelerated vibration conditions on any fastener system capable of providing a clamp-up load.

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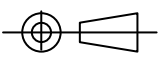
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FIGURE

Figure 1 – Vibration Fixture	4
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THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MIL-STD-1312-7A.
DESIGNATION FOR THIS TEST METHOD REMAINS MIL-STD-1312-7.

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1. SCOPE

1.1 Applicability

This method establishes a standard procedure for conducting accelerated vibration tests on any fastener system capable of providing a clamp-up load. This method is intended to define the test required to determine the life and compare fasteners under vibratory conditions.

2. REFERENCED DOCUMENTS

Not applicable.

3. DEFINITIONS

Not applicable.

4. GENERAL REQUIREMENTS

4.1 Test apparatus

4.1.1 Testing machine

The testing machine shall be capable of vibrating the fixture, as shown on Figure 1, with an essentially sinusoidal waveform at a frequency of 1,750 to 1,800 cycles per minute with an amplitude of .450 ±.015 inches (peak to peak). The machine shall be provided with a means to verify the proper amplitude is present, such as an optical wedge gage.

4.1.2 Test fixture

Unless otherwise specified, the test fixture shall conform to Figure 1. The fixture is intended for the testing of threaded fasteners and is satisfactory for testing supplementary locking means such as cotter pins.

4.1.2.1 Other fixtures

Other fixtures may be used, provided the following criteria are met (see Figure 1 for B, C and D):

- a. The cross-section area of the cylinder shall be at least 1.5 times the areas of the cylinder ID.

$$\frac{\pi}{4}(D^2 - C^2) \geq \frac{1.5\pi C^2}{4}$$

$$D^2 \geq 2.5C^2$$

- b. The slot clearance shall be equal to .745 inch

$$B - D = .745 \text{ inch}$$

- c. Sufficient clearance shall be provided between the cylinder and fixture so that the cylinder moves freely in the slot.
- d. The mass of the cylinder assembly with test parts in place shall be distributed so that the cylinder axis stays substantially perpendicular to the applied vibratory forces during the test. This is normally accomplished by adding washers.

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