

FED. SUPPLY CLASS

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FOREWORD:

This standard sets forth a standard test method to determine shank expansion characteristics of deformable solid and blind rivet fasteners.

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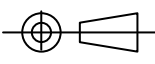
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THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MIL-STD-1312-29.
DESIGNATION FOR THIS TEST METHOD REMAINS MIL-STD-1312-29.

THIRD ANGLE PROJECTION		CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 1
PROCUREMENT SPECIFICATION NONE		TITLE FASTENER TEST METHODS, METHOD 29 MEASUREMENT TECHNIQUES FOR DETERMINING SHANK EXPANDING CHARACTERISTICS OF DEFORMABLE FASTENERS	CLASSIFICATION STANDARD PRACTICE NAS 1312-29

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1. SCOPE

- 1.1 Applicability. This test method covers a procedure for measuring shank expansion characteristics of deformable solid and blind rivet fasteners.

2. REFERENCED DOCUMENTS

Not applicable.

3. DEFINITIONS

- 3.1 Test grip. For installed fasteners, the cylindrical portion of the fastener between the installation formed or upset head and the radius under the manufactured head shall be used to define the levels of measurement in accordance with Figure 4.

4. GENERAL REQUIREMENTS

4.1 Test conditions

- 4.1.1 All fasteners shall be tested at the manufacturer's maximum specified grip in the 1x"ØD", 2x"ØD" and 3x"ØD" grip conditions when using the test blocks. "ØD" = nominal fastener diameter.
- 4.1.2 The mounting hole shall be the maximum mounting hole diameter +.0005, -.0000 as specified by the applicable documents of the fastener manufacturer or by the procurement document or user's standard practice (for solid rivets).
- 4.1.3 Test blocks shall be in accordance with Figure 1 or Figure 2 as applicable. Thickness "T" shall be in accordance with 4.2.1.
- 4.1.4 An alternate test panel is shown in Figure 3. Maximum nominal diameter of the fastener for the panel is Ø5/16 (Ø.313) inches. Test panel thickness is optional. However, fasteners of the appropriate grip length (maximum specified grip suggested) shall be used.
- 4.1.5 The fasteners shall be measured before and after testing in accordance with Figure 4.
- 4.1.6 Installation assembly discrepancies such as distortion or buckling of the test plates (Figure 3) or installations that would normally be rejected by the user (failure to meet manufacturer's acceptance criteria) shall be cause for rejection.
- 4.1.7 Installed conditions or dimensions (i.e., blind end diameter, upset diameter) that do not conform to product specifications shall be cause for rejection.

5. DETAIL REQUIREMENTS

5.1 Test procedures

- 5.1.1 The test blocks in Figures 1 and 2 can be reused. When the mounting hole exceeds tolerances specified in 4.1.1, the blocks must then be reworked or discarded. The test panels shown in Figure 3 shall be used only once.
- 5.1.2 The proper test block (Figures 1 or 2) for the fastener to be tested shall be clamped in a vise or similar device so that there is no separation before or during the test. The fastener shall then be installed according to the fastener manufacturer's instructions or according to the user's shop procedures.

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- 5.1.3 After installation, the test blocks (Figures 1 and 2) shall be unclamped and carefully separated. The fastener may be measured in the test block or removed from the test block for measurement.
- 5.1.4 All measurements of fastener shank expansion shall be in accordance with Figure 4.
- 5.1.5 The test panel (see Figure 3) should be carefully cut from each side to the fastener shank. This will allow the fastener to be removed. Fasteners shall be measured normal to the cut line.
- 5.1.6 A tool capable of .0001 inch accuracy (such as a toolmaker's microscope) shall be used for measuring all dimensions. Hole diameters and fastener diameters should be recorded to the nearest .0005 inches.

6. NOTES

6.1 Test report. The test report shall contain the following data:

- Name of company performing test.
- Fastener description including part number, size, head style, strength level, fastener manufacturer, manufacturer's lot number, material and finish.
- Test panel material, finish, and thickness (Figure 3 only).
- Measured diameter of fastener before installation (Figure 4).
- Actual hole measurement (maximum and minimum diameters).
- Description of installation equipment and method used.
- Measurements of installed fastener (Figure 4), also to include height and diameter of the bucked tail for solid rivets.
- Observations during test.
- Method of measurement (i.e., if the fastener was left in the test block or removed from the test block).

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