



## Standard Test Methods for Nails<sup>1</sup>

This standard is issued under the fixed designation F 680; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 These test methods cover procedures for the testing of nails. The test or tests selected, and the requirements for compliance, will be as specified in the applicable product standard. Performance tests for nail withdrawal and lateral load capability are not included as they are covered by Test Methods D 1761.

1.2 The tests described are as follows:

	Section
Dimensional tests	5
Tension test	6
Conventional bend test	7
Impact bend test	8
Rockwell hardness test	9
Coating weight test	10
Coating adherence test for zinc-coated nails	11

1.3 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.4 The values stated in inch-pound units are to be regarded as the standard. The values in parentheses are provided for information purposes only.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- A 90 Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles<sup>2</sup>
- A 370 Test Methods and Definitions for Mechanical Testing of Steel Products<sup>3</sup>
- A 428 Test Method for Weight of Coating on Aluminum-Coated Iron or Steel Articles<sup>2</sup>
- D 1761 Test Methods for Mechanical Fasteners in Wood<sup>4</sup>
- E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials<sup>5</sup>
- F 547 Terminology of Nails for Use with Wood and Wood-Base Materials<sup>6</sup>

<sup>1</sup> These test methods are under the jurisdiction of ASTM Committee F-16 on Fasteners and are the direct responsibilities of Subcommittee F16.05 on Driven and Other Fasteners.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 01.06.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 01.03.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 04.09.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 03.01.

<sup>6</sup> *Annual Book of ASTM Standards*, Vol 01.08.

F 592 Terminology of Collated and Cohered Fasteners and Their Application Tools<sup>6</sup>

### 3. Terminology

3.1 Definitions—For definitions of terms used in this test method, refer to Terminology F 547 and F 592.

### 4. Significance and Use

4.1 When specified, the tests selected for application shall be performed to assure conformance with requirements stipulated in the product specification.

### 5. Dimensional Tests

5.1 Dimensions to be evaluated include, but shall not be limited to length, stock diameter, diameter or major dimensions of head, straightness, head concentricity to shank, and length of point. For mechanically deformed nails, angle, depth, and configuration of deformations shall be measured as specified. Other dimensional characteristics shall be measured when required. Any suitable measuring means may be applied.

### 6. Tension Test

6.1 Nails are not subject to tension testing. However, wire used to make the nails may be tested as required by prior agreement or to affect mill product control. The testing of wire is covered in the general section of Test Methods A 370 and Supplement IV, Round Wire Products.

### 7. Conventional Bend Test

7.1 This test is used as a means of testing the ductility of certain types of nails or of the wires used in the manufacture of nails. The angle of bend and the mandrel diameter will be specified in the product specification. The cold bending shall be performed by any hand or power device that will deform the sample closely about a mandrel of specified diameter through the required angle without causing damage to the nail surface. The sample shall be considered to have failed if fracture occurs prior to attainment of the required minimum bend angle. Unless otherwise specified, the conventional bend test shall not be applied to annularly threaded nails or to the region of a nail exhibiting gripper marks.

### 8. Impact Bend Test

8.1 The impact test is primarily applicable to the testing of pallet nails to assess their suitability for that application. The testing device is shown in Fig. 1 and its operation is described