



## Standard Specification for Pole Vault Landing Pits<sup>1</sup>

This standard is issued under the fixed designation F 1162; 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 This specification covers minimum requirements of size, physical characteristics of materials, standard testing procedures, labeling and identification of pole vault landing pits.

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

1.3 The following safety hazards caveat pertains only to the test methods portion, Section 8, of this specification: *This standard does not purport to address all of the safety concerns, 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.*

### 2. Terminology

2.1 *landing pit*—a device used to decelerate a free-falling human body from a maximum 23 ft (7 m) above the landing surface.

2.1.1 *Discussion*—A one-component landing pit consists of one continuous landing surface.

2.1.2 *Discussion*—A multi-component landing pit consists of several components held together with a binder so that a continuous landing surface is provided.

2.2 *landing surface*—the top surface and designated initial landing point.

### 3. Dimensions

3.1 Overall dimensions must be based on the kinematics of the human body and the shock-absorbing quality of the material.

3.2 If the human body impacts with a 100 % vertical force, the dimension must exceed the length and width of the body.

3.3 If the human body impacts with the horizontal component, the length and width of the landing surface must be derived mathematically based upon the kinematic variables involved in the performance.

NOTE 1—Several studies of pole vaulters indicate the following as—

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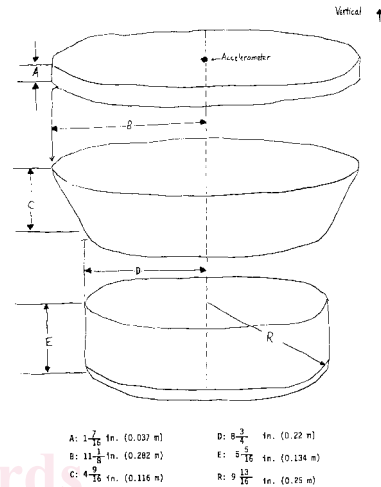


FIG. 1 Impacting Missile

A: $1\frac{1}{16}$ in. (0.031 m)	D: $8\frac{1}{4}$ in. (0.22 m)
B: $11\frac{1}{8}$ in. (0.282 m)	E: $5\frac{1}{16}$ in. (0.134 m)
C: $4\frac{9}{16}$ in. (0.116 m)	R: $9\frac{11}{16}$ in. (0.25 m)

sumptions which were used to determine the pit dimensions. A vaulter reaching 20 ft (6 m) would have a push off horizontal velocity of 4 ft/s (1.2 m/s). This velocity plus the length of the body would not exceed the 12-ft (3.6-m) pit length. Less skilled vaulters reaching 10 ft (3 m) may have a push off horizontal velocity of 8 ft/s (2.4 m/s). This velocity plus the length of the body would not exceed the 12-ft pit length.

3.3.1 *Pole Vault Landing Pit*—The size and design will be as follows:

3.3.1.1 The minimum size and design are designated to be: 16 ft by 12 ft (4.8 m by 3.66 m) behind the vertical plane of the stop board with a uniformly high landing surface with a minimum height of 28 in. (0.71 m). The front portion of the pit that surrounds the planting box will also be 16 ft (4.88 m) wide and extend 6 ft (1.83 m) forward from the main landing pad, giving an overall pit size of 16 ft by 18 ft (4.88 m by 5.49 m). The height of the front unit may taper down to 18 in. (0.45 m), at the front in order to give the vaulter a clearer approach to the vaulting box.

3.3.1.2 The front unit shall be designed to have no contact with the pole during vaulting action when the pit is placed within 8 in. (0.20 m) of the vertical plane of the stop board. The area around the pit to a perimeter of 6 ft (1.83 m) and a perimeter of 15 ft (4.57 m) in front shall be an obstacle-free surface bordering the landing pit. This area is not to be included in the overall landing pit area and is not intended as a landing surface.