



# Standard Specification for Air Soft Gun Barrel Blocking Devices<sup>1</sup>

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## INTRODUCTION

This standard is intended to outline basic performance requirements for barrel blocking devices. A barrel blocking device is a critical piece of safety equipment used in the sport of air soft.

Air Soft tactical games are an activity that, like all sports, has intrinsic hazards. These hazards include being hit by air soft projectiles. Protective equipment cannot eliminate all injuries but will substantially reduce their severity and frequency. A barrel blocking device is an additional safety device that, when meeting this standard and properly used, can substantially reduce the severity and frequency of injuries. Air Soft gun barrels are not all the same inside diameter, thus necessitating performance specifications for barrel blocking devices that match the barrel blocking device to a barrel diameter. This specification is written within the current state-of-the-art of air soft gun barrel and air soft barrel blocking device technology. The intent is to revise this specification whenever substantive information becomes available which justifies revising existing requirements or adding new requirements.

## 1. Scope

1.1 This specification covers air soft gun barrel blocking devices that may be inserted or otherwise function to prevent an airsoft projectile from leaving the muzzle or the confines of the barrel blocking device.

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

1.3 *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. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

[F2654 Specification for Low Energy Air Gun \(LEAG\) Warnings](#)

[F2679 Specification for 6 mm Projectiles Used with Low Energy Air Guns](#)

[F2748 Specification for Low Energy Air Guns \(Less Than 1 Joule\)](#)

## 3. Terminology

3.1 *Definitions of Terms Specific to This Standard—Air Soft Gun Terms:*

3.1.1 *air soft gun, n*—a device specifically designed to discharge air soft projectiles conforming to Specifications [F2654](#) and [F2748](#).

3.1.1.1 *Discussion*—These devices may operate in a combination of discharge modes depending on the design.

3.1.2 *air soft projectile, n*—a spherical ball, commonly with a diameter of approximately 6 mm made of a molded polymer and designed to be expelled from an air soft gun and conforming to Specification [F2679](#).

3.1.3 *barrel, n*—that portion of an air soft gun through which the 6 mm projectile is discharged.

3.1.4 *barrel blocking device, n*—a safety device that prevents an air soft from being accidentally discharged from the muzzle of the air soft gun or leaving the confines of the barrel blocking device.

3.1.5 *clearing rod, n*—a device used to assist in freeing air soft projectiles jammed or trapped inside an air soft gun barrel.

3.1.6 *discharge mode, n*—a mode that controls the number of air soft projectiles discharged per trigger cycle.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.1.7 *fully-automatic air soft gun, n*—an air soft gun that discharges when the triggering device is actuated and continues to discharge until the trigger returns to its reset or recycle position.

3.1.8 *muzzle, n*—the end of the barrel at which the air soft projectile exits the barrel.

3.1.9 *muzzle diameter, n*—the inside barrel diameter as measured at the muzzle.

3.1.10 *semi-automatic air soft gun, n*—a semi-automatic air soft gun discharges one time with each trigger cycle.

3.1.11 *single shot air soft gun, n*—an air soft gun that requires the operator to manually cock or engage the sear of the air soft gun before each shot by a means of a pump, bolt, lever, cocking handle, or similar device.

3.1.12 *standard ambient temperature (SAT), n*—used to describe a substance at a temperature of  $25 \pm 2^\circ\text{C}$  ( $77 \pm 4^\circ\text{F}$ ).

#### 4. Significance and Use

4.1 This specification establishes performance requirements and test methods to provide a reasonable degree of safety in the normal use of barrel blocking devices in air soft guns.

#### 5. Conformance

5.1 Barrel blocking devices shall not, either by label or other means, indicate conformance with this specification unless they conform to all applicable requirements contained herein.

#### 6. General Requirements

6.1 *Performance*—Upon any discharge of an air soft projectile from an air soft gun with an appropriate barrel blocking device properly installed according to the manufacturer's instructions, the barrel blocking device must remain inserted or over the muzzle and prevent an air soft projectile from exiting the muzzle or the confines of the muzzle blocking device. Tests shall be conducted in accordance with 7.2.

6.2 All barrel blocking devices shall completely cover or block the exit orifice of the barrel. Some barrel blocking devices make use of a vent port that allows the release of excess pressure in the barrel of the air soft gun. The total calculated area of all ports of this type in any barrel blocking device must less than  $2.5 \text{ mm}^2$ .

#### 7. Test Methods

7.1 No precision statement on any of the following test methods is available at this time.

##### 7.2 Barrel Blocking Device Retention Test:

7.2.1 *Significance*—This method is performed to ensure that the barrel blocking device will remain in or over the barrel and prevent an air soft projectile from exiting the muzzle or the confines of the barrel blocking device.

7.2.1.1 Any barrel blocking device designed to be used or included with a specific air soft gun shall be tested with that device.

7.2.1.2 Any barrel blocking device not designed or sold for use with a specific air soft gun shall be tested with an air soft gun capable of firing an air soft projectile weighting 0.25 g at a speed of  $152.4 \pm 9 \text{ m/s}$  ( $500 \pm 30 \text{ f/s}$ ).

##### 7.2.2 Apparatus:

7.2.2.1 *Air Soft Gun*, capable of hurling air soft projectiles per Specification F2748.

7.2.2.2 *Air Soft Projectiles*—The projectile used in this test will be the heaviest gram weight recommended by the manufacturer for use in the subject air soft gun as discussed in Specification F2654 or as defined in 7.2.1.2. All projectiles will meet the requirements listed in Specification F2679. The weight of the projectile used in the test shall be recorded.

7.2.2.3 *Barrel Blocking Device*.

7.2.2.4 *Appropriate Backstop*.

7.2.2.5 Equipment employed to measure the speed of the test air soft projectiles shall be used in accordance with the manufacturer's instructions to measure the velocity of the air soft projectiles and shall be accurate to within  $\pm 0.5 \text{ m/s}$  ( $\pm 1.6 \text{ ft/s}$ ) muzzle velocity.

##### 7.2.3 Conditioning:

7.2.3.1 All testing shall be done using air soft projectiles manufactured according to Specification F2679.

7.2.3.2 Air Soft projectiles storage and the non-test handling shall be done at a relative humidity below 65 % and at SAT.

7.2.3.3 Air Soft Projectiles shall be conditioned in their original sealed container for at least 4 h at the humidity and temperature specified in 7.2.3.2.

7.2.3.4 The air soft gun shall be conditioned for at least 4 h at SAT.

7.2.3.5 The testing shall be conducted at the temperatures specified in 7.2.3.2 and shall be completed within 10 min after removal of the air soft projectile from the sealed container. The air soft projectile container shall be resealed immediately after each group of air soft projectiles is removed.

7.2.3.6 The barrel blocking device to be tested will be conditioned for at least 4 h at SAT.

7.2.4 *Test Specimen*—The test specimen shall consist of a barrel blocking device properly installed into or over the muzzle.

##### 7.2.5 Retention Test Procedure:

7.2.5.1 Conduct the test at SAT.

7.2.5.2 The air soft gun is to be operated in accordance with the air soft gun manufacturer's instructions.

7.2.5.3 The discharge velocity of the air soft gun shall be measured prior to as well as after completing the test, shall be checked within 1 m (3.3 ft) of the muzzle and shall be recorded.

7.2.5.4 Install a new unused barrel blocking device according to manufacturer's instructions.

7.2.5.5 Placing the end of the barrel and blocking device into a clean container that is devoid of any air soft projectiles discharge air soft projectiles into the barrel blocking device, firing a volley of three air soft projectiles, repeating this two times for a total of 6 air soft projectiles fired, with no more than 5 s between volleys.

(1) In the case of fully automatic air soft guns the unit is to be fired in full auto mode.

(2) In the case of semi-automatic air soft guns the unit is to be fired with no break between individual shots.

(3) In the case of single shot air soft guns the unit is to be fired as fast as it can be cocked by the tester between shots.

(4) In order to confirm the firing of all test shots it may be necessary for the tester to use a clearing rod to remove air soft projectiles from the air soft gun barrel after completing the test.

7.2.5.6 Observe the test container for signs of any air soft projectiles breaching the barrel blocking device. Inspect the barrel blocking device for signs of damage or physical failure. Any signs of either will result in a failure for this test.

## 8. Identification of Manufacturer

8.1 *Significance*—Every barrel blocking device shall contain a permanent, printed indicia, identifying the manufacturer (or distributor).

8.1.1 This indicia shall be printed in English, in a minimum 8 point, font.

8.1.2 This indicia shall be printed in a conspicuous location on the barrel blocking device.

## 9. Inclusion of Instruction Manual

9.1 *Significance*—Barrel blocking devices come in many designs, with most designs requiring a certain amount of adjustment/fitment to each air soft gun in order for the device to function effectively. It is recommended that every barrel blocking device being sold individually to the end user include a user's manual outlining the proper installation and usage of the device as detailed below.

### 9.2 *User's Manual Specifications:*

9.2.1 The user's manual may be included in various formats such as permanently printed directly onto the device itself, an accompanying pamphlet, an instruction sheet, or included on the product packaging.

9.2.2 The user's manual shall identify the manufacturer (or distributor), and including contact information.

9.2.3 Instructions must be printed in a minimum 8 point font.

9.2.4 The maximum suggested velocity and air soft projectile weight with which the barrel blocking device is to be used will be clearly indicated.

9.2.5 The minimum instructions included with a barrel blocking device will be: how to properly install and use the device.

9.2.6 At the manufacturer's discretion additional information may be included with the barrel blocking device including but not limited to adjustment of the barrel blocking device, how to inspect the device for wear or damage, proper cleaning and storage of the barrel blocking device.

## 10. Keywords

10.1 air soft; air soft gun; air soft gun barrel blocking devices; air soft tactical game

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