

TACTICALTECH, LLC

PepperBall® Parts, Air Equipment, Armorer Supplies & Launchers

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PepperBall® Velocity Testing: Frequently Asked Questions

Q: Why should an agency test the velocity setting of its PepperBall launchers on a regular basis?

A: All air-powered PepperBall launchers have a manufacturer-specified velocity setting of 300-350 feet per second (fps). Unlike most conventional firearms used in law enforcement, the speed of the PepperBall projectile is based on the velocity settings of the weapon and is not determined by the amount of powder charge as is found in typical burn-fire munitions. PepperBall projectiles do not use a powder charge, but are launched from the air-powered launcher using High Pressure Air (HPA). As with anything that flies through the air, PepperBall projectiles have a ballistic envelope that has been scientifically determined by the manufacturer to ensure the best accuracy and flight characteristics when launched at 300-350 fps.

Q: What are some of the liability issues involved for agencies that do not conduct velocity testing?

A: Obviously, the greatest liability arises if the PepperBall projectiles are not fired at the proper velocity. Velocities less than 300 fps can prevent the rounds from breaking on a suspect, thus preventing any possible chemical agent effects as well as reducing the kinetic, pain-compliance effects. Velocities more than 350 fps can cause the projectiles to become inaccurate in flight and may cause a curveball-like flight characteristic that could cause the projectile to hit in a no-target zone (face, throat, eyes, spine) or possibly hit an innocent bystander.

Q: How does an agency check the velocity settings of its PepperBall launchers?

A: The only way to check the velocity settings of an individual launcher is to test it using a radar chronograph that is specifically designed to measure the velocity of a paintball-type launcher.

Q: How often should a PepperBall launcher be velocity tested?

A: Whenever performing maintenance or at least once annually. Velocity testing prior to performing maintenance procedures can give a department's armorer insight into what, if anything, may be wrong with a launcher. Testing the velocity after any repair or maintenance ensures that the launcher will fire projectiles at the specified manufacturer velocity of 300-350 feet per second.

Q: What type of maintenance records should be kept on a PepperBall launcher?

A: At a minimum, each PepperBall launcher should have a maintenance record card that indicates its serial number, date of purchase, dates of periodic and annual maintenance performed, reason for repair, type and number of parts replaced, and the velocity setting before and after each service or repair.

Q: What chronograph should an agency use?

A: We recommend both the Blue and X chronographs, which have been used by law enforcement for years as they are reliable, accurate and easy to operate. The Blue version is a tabletop model and the less expensive, handheld XChrono are both very accurate and make velocity testing simple and easy to perform.

Q: What does the manufacturer's official PepperBall Instructor manual say about velocity testing?

A: *"At a minimum you should check the velocity of the projectiles coming out of your launcher annually or whenever you disassemble your launcher. Check after any major use or if you feel like the projectiles are slowing down. The velocity should range from 300 to 350 feet per second. Check your manual for adjustment procedures. Keep a record of all readings and adjustments made. These records may help in litigation or complaints resulting from the use of the launcher and PepperBall Projectiles."*