

ASA Accelerated Barrel Break-In Procedure 11-11-08

The accelerated break-in procedure is meant to demonstrate how a composite bat will perform after use in the field, or after ABI by players. It has been developed to assist manufacturers in their understanding of how their products behave in the field. This test procedure in no way amends or alters any existing agreements between ASA and the bat manufacturers but is intended to give notice that this procedure will be used in the certification and policing of composite bats.

Procedure:

1) BBS scan

Measure the ASA BBS according to ASTM F2219.
Use a minimum of three impact locations.
Stop test if visible damage is observed.
Mark the end cap to indicate circumferential impact location.

2) Measure barrel stiffness (BS_0)

Follow the attached barrel stiffness procedure.

3) Roll the barrel

Follow the attached rolling procedure.
Stop test if visible damage is observed.

4) Measure barrel stiffness (BS_i)

Follow the attached barrel stiffness procedure.
Compute the percent change in barrel stiffness according to

$$\left(\frac{BS_0 - BS_i}{BS_0} \right) 100$$

5) Repeat steps 3 and 4 (Increase rolling depth by increments of 0.05 inches) until a barrel stiffness change of at least 10% is achieved

6) BBS scan

Measure the ASA BBS according to ASTM F2219.
Use a minimum of three impact locations.
Impact the bat at the same location circumferentially from step 1.
Stop test if visible damage is observed.

7) Compliance check

Repeat steps 2 through 6 until bat shows visible damage or exceeds 98 mph BBS (fail).

If the bat is damaged during the rolling process, the bat passes.

If the bat is damaged during the BBS test, and has two or more valid impacts at any location, the average BBS at all locations must be less than 98 mph to pass.

If the bat is damaged during the BBS test and has less than two valid impacts at all locations, it passes.

Notes:

1. This procedure is not exclusive and is subject to change at anytime.
2. Manufacturer may recommend initial rolling depth. Certification requires at least one complete BBS test prior to bat failure.
3. For purposes of this method, a composite bat is a fiber reinforced polymer (or similar material whose properties may change with impact) used in the barrel portion of the bat.
4. A bat is determined to be broken when a visible crack appears (excluding cracks in the paint or clear coat) or a dent causing a maximum diameter to exceed 2.3 inches (i.e. fail the ring test).

Barrel Rolling Procedure

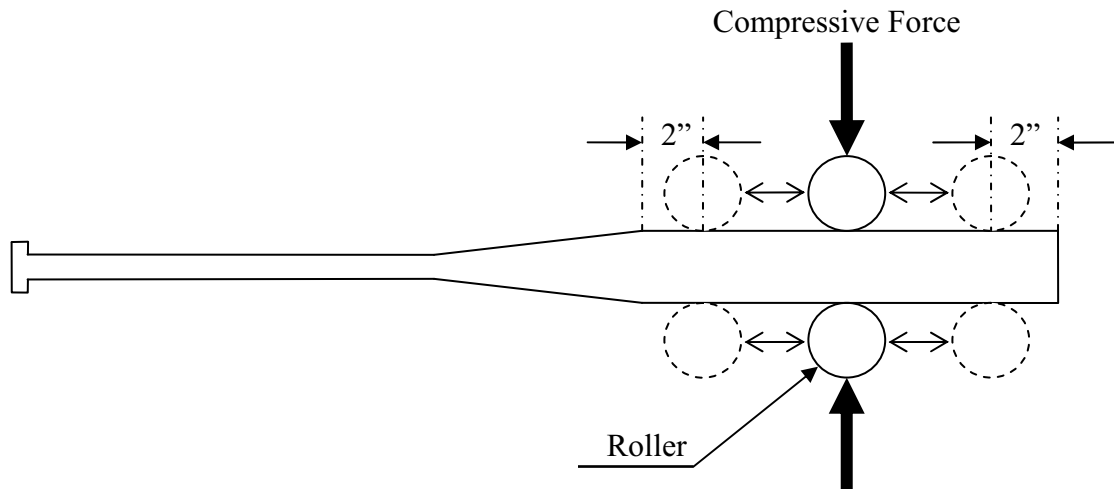
Purpose: To accelerate break-in of composite bats

Apparatus

Two nylon wheels, 3.75 inches long by 2.5 inches in diameter
Fixture to press wheels into barrel in 0.05 inch increments
Device to roll barrel

Procedure:

- 1) Place the barrel of the bat in the fixture with the rollers contacting the bat at 6 inches from the endcap. Mark circumferential location.
- 2) Bring roller in contact with the barrel. Displace the rollers 0.2 inches.
- 3) Roll the barrel to within 2 inches of endcap and to within 2 inches from the beginning the taper. Roll the bat a least 10 times in each direction. Popping and cracking sounds during this process are normal. Continue rolling until cracking or popping sounds cease.
- 4) Uncompress the bat
- 5) Rotate the bat 90° from initial location and repeat steps 1-4
- 6) Rotate the bat 45° from initial location and repeat steps 1-4.
- 7) Rotate the bat -45° from initial location and repeat steps 1-4.
- 8) For rolling beyond 0.2 inches increase displacement by increments of 0.05 inches.



Barrel Compression Procedure

Purpose: Measure the barrel stiffness.

Apparatus:

- Universal load frame
- Steel cylinders 3.86 inches in diameter by 4 inches long
- Means of measuring load and displacement
- Means of controlling displacement rate to 1 in/min

Procedure:

- 1) Set the force gage to zero
- 2) Place the bat in the fixture at 6 inches from the endcap.
- 3) Activate the fixture until the upper cylindrical is in contact with the barrel of the bat.
- 4) Compress the bat to 5 to 15 pounds of force.
- 5) Record the initial displacement and load values.
- 6) Compress the barrel 0.02 inches. Record load and displacement (L_1, D_1).
- 7) Compress the barrel 0.07 inches. Record load and displacement (L_2, D_2).
- 8) Release the load
- 9) Rotate the bat 90°. Repeat steps 2 through 8 above.
- 10) Compute the barrel stiffness, BS, from the average of each axis by:

$$BS = \frac{1}{2} \left\{ \left(\frac{L_2 - L_1}{D_1 - D_2} \right)_0 + \left(\frac{L_2 - L_1}{D_1 - D_2} \right)_{90} \right\}$$

