

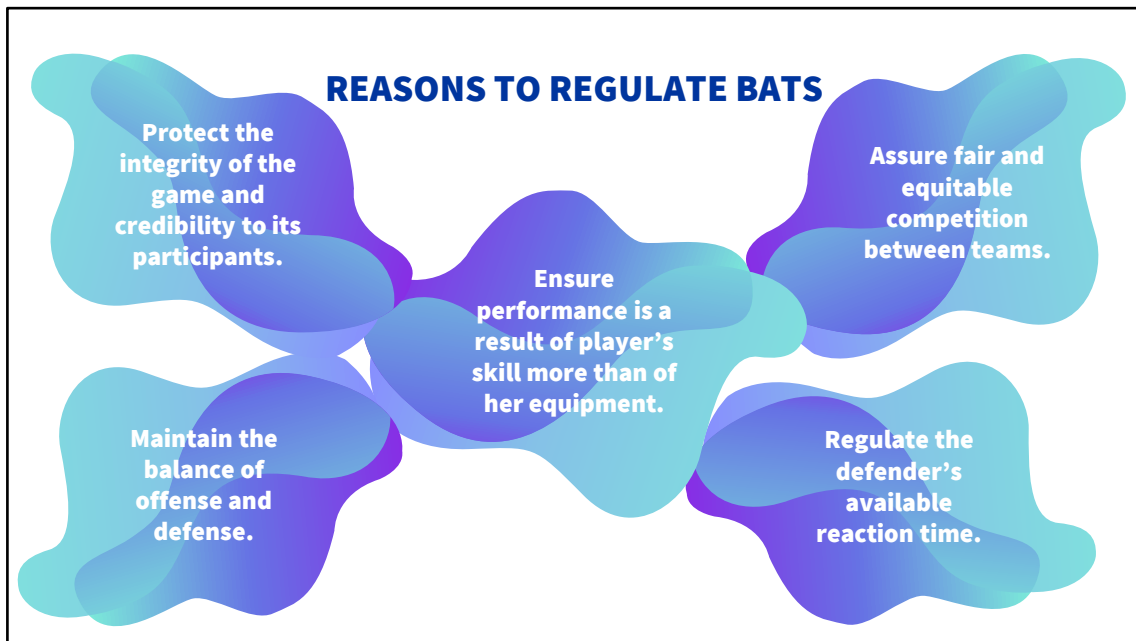
NCAA SOFTBALL BCT TUTORIAL POWERPOINT

**Fall 2021
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Welcome to a brief presentation on the NCAA Softball Bat Compliance Program with an emphasis on the barrel compression testing...referred to as BCT.

Before we dive into the details on how to perform BCT, let me quickly explain the goals of the entire compliance program and where barrel compression testing fits into the big picture.



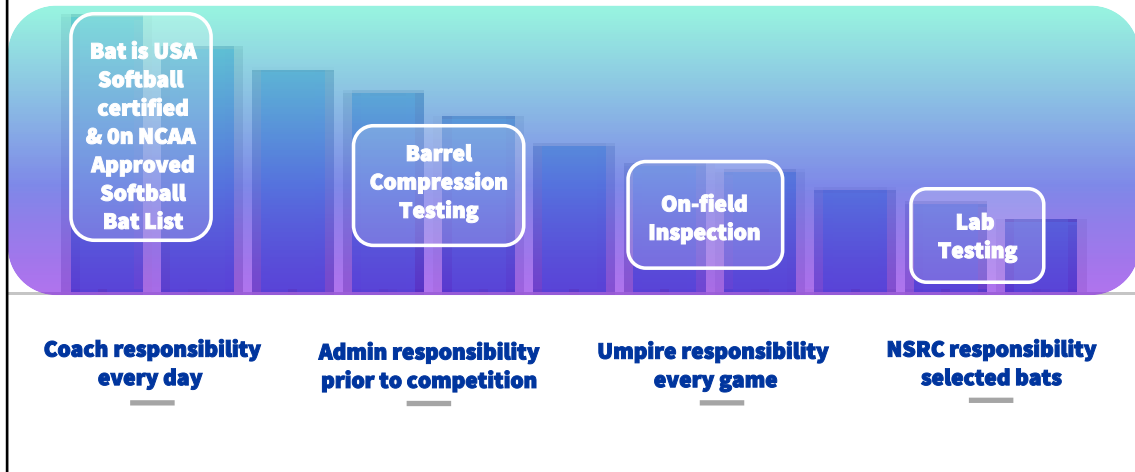
On behalf of the NCAA Softball Rules Committee, I want to thank you for your diligence in helping monitor the appropriateness of bats used in the collegiate game. Several years ago, there was significant concern about the impact various bat models were having on our game and thus the NCAA Softball Bat Compliance Program was created.

The five goals listed here are the foundation of that program.

- 1) To protect the integrity of the game and the credibility to its participants;**
- 2) To assure fair and equitable competition between teams;**
- 3) To maintain the delicate balance of offense and defense;**
- 4) To regulate the defender's available reaction time and therefore minimize injury risk; and**
- 5) To ensure a player's performance is a result of the player's skill more than of her equipment by eliminating rogue bats.**

OVERVIEW OF THE NCAA SOFTBALL

BAT COMPLIANCE PROGRAM



To address those goals, a **five-prong approach** was created.

The first and second are the responsibility of the coach. The first is the requirement that bats used in NCAA competition must be USA Softball certified.

And the second is the model must be included on the current NCAA Approved Softball Bat List.

The third is the one we are going to concentrate on today -that is, Barrel Compression Testing which is done PRIOR to games, tournaments and every tier of the NCAA post season.

The fourth is to provide a safety net for the opposing team by having umpires perform a pre-game inspection of bats for BCT verification (i.e. the appropriate sticker) and their suitability (that is, not damaged) prior to every game.

The fifth is post-competition compliance testing done in a lab on bats that both pass and fail BCT to confirm the test's validity as a predictor of compliance with the batted ball speed standard.

The generic term "bat testing" could refer to either of these last two prongs but remember BCT is done locally and PRIOR to competition and lab testing is done at the Sport Science lab POST COMPETITION.

**PRIOR TO THE START OF THE SEASON,
HOST ADMINISTRATIONS MUST SECURE
A BCT FIXTURE AND HAVE PLANS FOR
EVERY COMPETITION OTHER THAN THOSE
USING NCAA ASSIGNED BAT TESTING MANAGERS**

**Individual conferences
and tournaments must
establish protocols to
include, at a
minimum...**

**source of
distinctive stickers
to indicate bats
have passed BCT;**

**the disposition of
bats surrendered
following BCT
failure;**

**and when, where
and by whom BCT
will be performed.**

Prior to the season, host administrations must secure a BCT fixture and have the following plans for every competition with the exception of those using an NCAA assigned bat testing manager.

First, prior to the start of the season, each institution is responsible for acquiring the appropriate number of distinctive stickers to be used on bats that pass barrel compression testing for individual competitions.

Second, prior to competition, the disposition of bats that are surrendered following BCT failure, needs to be established and communicated.

Finally, the time, location, and bat testing manager for BCT should be communicated to both coaches in a timely manner but no later than 48 hours before game time.



STICKER PLANS

Stickers for single-opponent competitions are typically provided by each team as each team places its stickers on the passed bats of their opponent.

Tournament hosts should provide stickers distinctive to the event and secure them from all teams. Alternatively, they may inform competing teams they will be responsible for providing stickers for their opponents.

Coaches must acquire enough stickers to accommodate use on every passed bat for either their opponents or for all events they host.

Stickers need not be the same event to event but must be distinctive each day of a multiday event if BCT occurs daily.

In tournament settings, the host may provide distinctive stickers for all teams in the event.

Alternatively, stickers may be used from teams competing in their first game. This process can also be used in a tournament as long as teams are notified as to the number of teams requiring their stickers.

THE BASICS OF

BARREL COMPRESSION TESTING

Barrel compression testing is a simple predictor of bat performance.

In general, a reading of 1550 pounds per square inch (psi) is the minimum standard because it correlates to the maximum allowable batted ball speed of 98mph.

However there are approved lower minimums for “backstop style” models as noted on the NCAA Approved Softball Bat List.

The basics of barrel compression testing is that it is a simple, reasonably accurate predictor of bat performance. A portable fixture is used to apply pressure to the bat barrel to measure barrel stiffness in specific locations.

In general, there’s a linear correlation between the softness of the bat barrel and the exit speed of a batted ball.

Meaning if the barrel is stiff, the batted ball speed is likely slower than the 98mph standard and if it is soft, the batted ball speed is likely faster.

So a reading of 1550 pounds per square inch (psi) is the minimum standard of stiffness, as measured with this testing unit.

However, due to unique construction of “backstop style” models, there is a process for manufacturers to be granted a lower psi minimum as noted on the NCAA Approved Softball Bat List. Note-this is a number exception NOT an exception to being tested.

PREP BY COACHES

PRESENT EVERY BAT

Bats without the appropriate sticker will not be allowed in team areas.

ANNOTATED BAT LIST

Highlight the models presented and indicate the number of each that will be tested.

LINE UP BATS

Arrange the bats in the order in which they appear on the NCAA Approved Softball Bat List.

G
E
T
T
I
N
G
S
T
A
R
T
E
D

PREP BY TESTERS

LOCATE ALL TESTING MATERIALS

Case with fixture, cylinder, stop stick plus tape and pen to identify failures and stickers.
If applicable- postseason notebook with log sheets.

CALIBRATION TRIAL

Insert and compress cylinder to confirm reading matches the load printed on it.

STOP STICK

Insert stop stick from preferred side until it is flush with far side then tighten set screw.

So let's talk about getting started in barrel compression testing. Prior to testing, coaches must gather all the bats they wish to have available for use. At the designated time, coaches must present their annotated bat list and should arrange the bats in the order in which they appear.

Note- coaches need not present the entire NCAA Approved Softball Bat List...only the first page and all pages containing bats presented.

If testing is done daily, there is flexibility to present different bats daily but if testing is for an entire series or tournament, there is only one opportunity to present bats for testing.

Also prior to testing, the bat testing manager must ensure that all the necessary materials are present, test the fixture to ensure it is calibrated correctly and secure the stop stick to the BCT fixture for ease in testing the approximate sweet spot of the bat.

THE PROCESS



VERIFY BAT MODELS

Model numbers on the bat must exactly match those on the list.



DISQUALIFY OBVIOUS DAMAGE

Don't waste your time testing obviously damaged bats.



COMPRESSION TEST

Test until the bat passes or fails twice, whichever happens first.



FOLLOW-UP

Sticker bats that pass; retain failures and delete them from bat list.

Let's briefly talk about the process of barrel compression testing. There are four distinct parts:

The first is the bat testing manager must verify the model number on each bat EXACTLY MATCHES the model numbers on the annotated NCAA Approved Softball Bat List before continuing.

The second is to disqualify any bat with significant damage such as cracks and damaged end caps since it will not pass testing.

Next, compression test all bats that survive until each one has two passes or two fails, which ever happens first.

Finally, follow-up the test by applying a sticker to each bat that passes and retain possession of failed bats while amending the provided bat list to reflect those failures.

Let's go into detail on each part...

VERIFY BAT MODELS

Using the coach-provided NCAA Approved Softball Bat List, the model numbers on the bats must exactly match.

Disqualify those bats that do not match the list or are illegible.

The number of bats of each model are totaled and the list initialed by the tester.



Returning to the first step...

Although by rule, coaches are responsible for legally equipping their teams, verification is the responsibility of the bat testing manager.

It is essential that testing only occurs on bats with legible model numbers and letters that exactly match models on the current NCAA Approved Softball Bat List. If the model number on the bat is illegible, it is excluded.

Finally, check to ensure the most current list is provided and that it appropriately documents what is presented for testing before totaling the team's bats and initialing the list.

DISQUALIFY DAMAGED BATS

even though umpires will check each bat for suitability prior to each game.



Damage like the examples shown here, disqualifies the bat from testing. There's simply no need to waste time since these bats are obviously inappropriate.

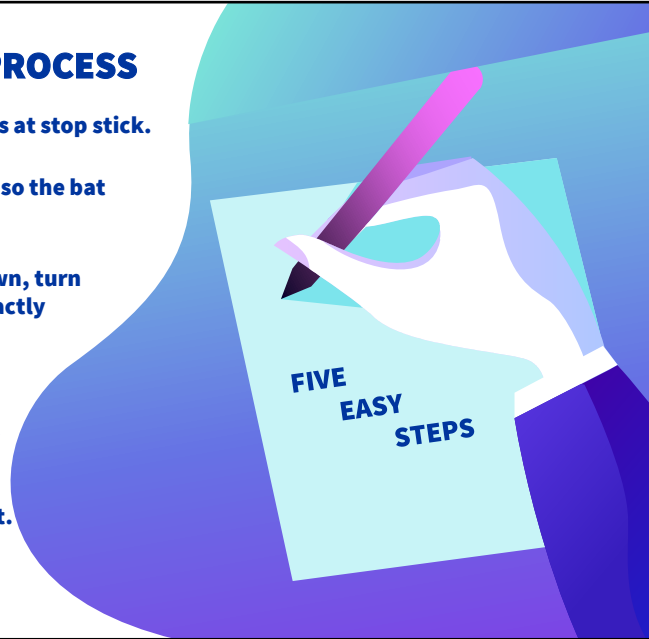
Once a damaged bat is disqualified, amend the provided NCAA Approved Softball Bat List and return the bat to the team at this time.

Note- because bats can sustain damage at any time and will be used for batting practice and warm-ups between BCT and the game or games for which the round of testing is done, the umpire crew will continue to check every bat for damage immediately prior to each game.

The bat testing manager's role in this process is only to disqualify the obviously damaged bat that need not be tested.

COMPRESSION TEST PROCESS

- Insert bat into chamber until it stops at stop stick.
- Place the cylinder under the handle so the bat remains level.
- Making sure the lever is pointed down, turn the pressure gauge until it reads exactly 500 psi (called preload).
- Lift the handle and make a mental note of the reading before releasing the lever. Release the pressure.
- Rotate the bat 90 degrees and retest. If a third test is needed, rotate the bat 45 degrees for the final test.



So now to the test itself...finally!

The first step is to insert the bat until stopped by the stop stick. This will position the bat for testing at the approximate sweet spot.

Next, level the bat by placing the cylinder under the handle. *Tip- place something under or around the cylinder to prevent it from rolling away between bats.*

With the fixture handle pointing downward, rotate the pressure gauge until it preloads to 500psi.

Then lift the fixture handle to obtain the first reading.

Drop the handle and loosen the pressure gauge in order to turn the bat 90 degrees to retest.

If the results are the same, that is, both pass or both fail, that's the final result. If they differ, a third test result becomes final.

**BACKSTOP STYLE BATS HAVE
SPECIFIC PSI MINIMUMS NOTED ON THE
APPROPRIATE PAGES AND
SUMMARIZED ON THE
FIRST PAGE OF THE CURRENT
NCAA APPROVED SOFTBALL
BAT LIST...**

**DeMarini
Prism models**

**Rawlings
Mantra models**

**Easton
Ghost models**

**Mizuno
PWR CRBN
models**

**Louisville
Slugger
Xeno, LXT, RXT,
Meta models**

As noted earlier, most bat models must register at least 1550 pounds of pressure on the pressure gauge to pass.

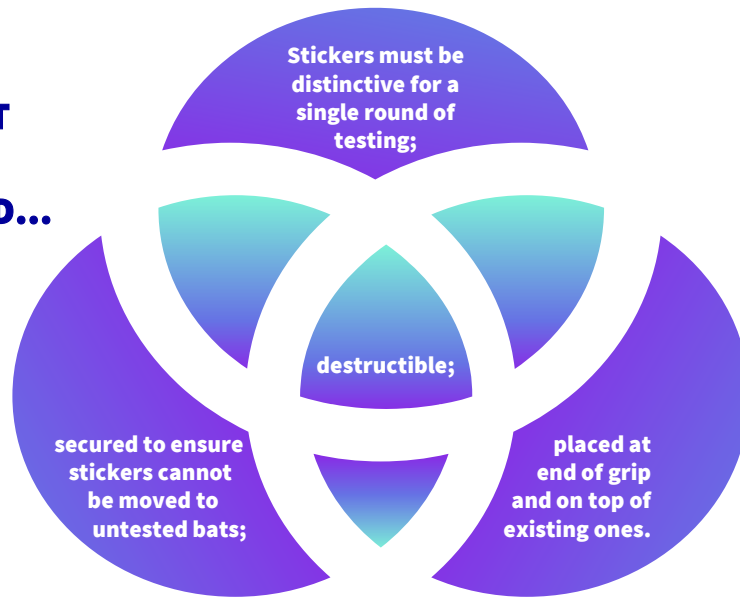
However, there are documented exceptions referred to as “backstop style” bats. Collectively, they are listed on the first page of the NCAA Approved Softball Bat List for the bat testing manager’s convenience.

The exact applicable psi minimum is also individually noted on the line of each appropriate model on the bat list .

There are two schools of thought on dealing with backstop style bats with lower BCT minimums. One is to keep the list of exceptions at the fixture while testing and check it as each bat is inserted. The other is to test the bat and if the reading is less than 1550psi, then consult the list to verify the model’s approved exception.

Either way, if the gauge registers less than the required psi for that model, it is a failed test.

BATS THAT PASS ARE STICKERED...



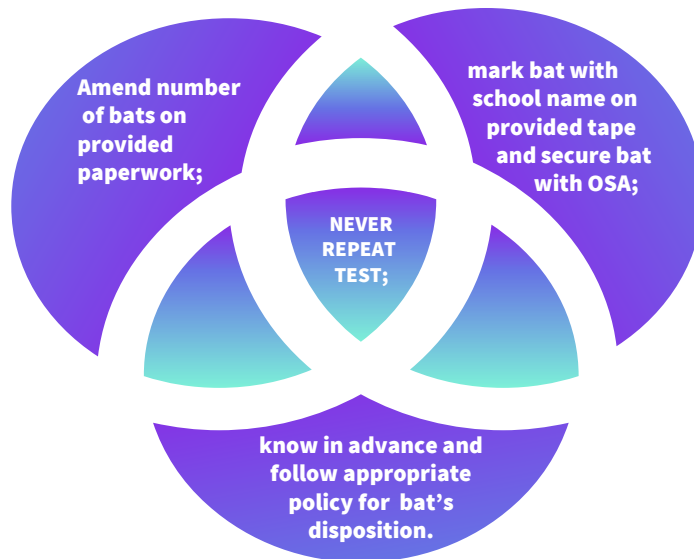
Bats that are sufficiently stiff and therefore pass are then stickered.

Note that stickers are destructible and cannot be repositioned nor reapplied.

If there are already stickers on the bat, placing them on top of old ones is preferred and if there are no stickers at the time of testing, the sticker should be placed at the bottom of the grip whenever possible.

If the handle has a rough finish, the sticker may need to be placed on the bottom of the grip to stick.

BATS THAT FAIL ARE DISQUALIFIED...



Failed bats should be identified with the school that owns it using athletic tape and then secured by administration. The exact disposition of the bat is determined by the testing group during the season... sometimes a conference, sometimes a tournament or the NCAA.

In the post season, the NCAA protocol is the bat is sent for further evaluation-NEVER returned to the team on site.

The team's NCAA Approved Softball Bat List or log sheet is appropriately modified to reflect the number of bats passed.

One quick additional comment on failed bats- if, as the bat testing manager, you want to demonstrate the failed score to the team representative, it should be done on every lever pull that results in a failed number. Never take the bat out of the fixture and later reinsert it to demonstrate the failed score.

Unless the bat is reinserted exactly in the same position, there's a possibility of getting a slightly different reading which may lead to a conflicting result.

FINAL TIPS:

Because BCT has occurred prior to the pre-game inspection, umpires need only match the total number of bats annotated on the NCAA Approved Softball Bat List with the number of stickered bats.

If the numbers do not match, a traditional reconciliation of the individual models on the NCAA Approved Softball Bat List with the actual bats is required.

In addition to verifying the correct number of appropriate bats, umpires are responsible for checking all bats for damage .

Noncompliant/Inappropriate Bat Reports are required for all bats disqualified for damage at each pre-game inspection and for those failing in-season barrel compression testing. In the post season, bats failing BCT need only be noted on the log sheet.

A few final thoughts-

First, because BCT has occurred, the pregame inspection of bats by umpires is shortened to confirming the number of stickered bats matches the number of bats on the team's NCAA Approved Softball Bat List and checking for damage. If the numbers do not match, the umpires must revert back to their traditional matching of each bat model to the NCAA Approved Softball Bat List. In all cases, umpires shall correct the paperwork.

I can't stress enough how important the bat testing manager is in this process of only testing appropriate bats.

Second, noncompliant/inappropriate bat reports from the SUP.Arbitersports website must be completed for all bats failing in-season BCT or that are removed by umpires for damage. They are not necessary for bats disqualified by failed BCT in the postseason as those failures are noted on the log sheets returned at the end of the tier.



Once again, on behalf of all those who compete in or enjoy college softball, thank you for your time and efforts in this important undertaking.

Feel free to print this tutorial and place it in your team’s BCT case for quick access.

For questions regarding the BCT fixture or the NCAA Bat Testing Program or Process, use the contact information noted here.

For more detailed information on NCAA Softball Bat Testing, the document titled “NCAA Softball Bat COMPLIANCE and Testing INFORMATION” posted in the “NCAA Bat” section of the center column of Home Plate on sup.Arbitersports.com is available.