

The Science



Science behind a composite bat

Composite bats are made out of a carbon, graphite-fiber and other composite materials which are held together by laminate glues. They are stronger and lighter than aluminum bats.

The lighter construction allows for a larger barrel and sweet spot within the designated drop ratio. The larger sweet spots will give more forgiveness for the imperfect swing. Balls really jump off of a composite bat.

Composite bats have been used and accepted in softball for the last ten years. They have now become popular in baseball and will undoubtedly dominate the bat industry moving forward.

Breaking in Period

Those that have played softball or baseball know that a composite bat is not as hot "out of the wrapper" as it is when it has collected hundreds of hits. Composite bats have a much longer break-in period than aluminum bats do. You need these hundreds of hits on the bat to get maximum performance and distance from the bat.

Studies have been done by Washington State University and others which document the results of rolled bats vs. unrolled composite bats.

Bat Rolling

Rolling a composite bat has some real advantages and is here to stay.

1. It adds 20 to 50 feet to the distance a ball is hit when you connect with the sweet spot. This is because the fibers have been loosened and the bat now has a trampoline effect. 2. It helps protect the bat from cracking (when rolled correctly) this is because of the increased flex at the sweet spot of the bat. 3. It can increase the life of the bat because of the prevention of cracking. 4. The biggest advantage though is to the hitter as he or she is now getting maximum performance from the new bat throughout the life of the bat.

Bat rolling is a process using a machine with rollers to apply pressure to a baseball bat. It breaks the composite fibers and resin type glues that different manufacturers use; to let the composite fibers expand and work in a trampoline effect, projecting the ball further and faster than a metal type bat. Bat rolling was started in the "Composite Era" late 1999 to early 2000. It really expanded after 2002 throughout the world. Bat rolling is not illegal. The bat eventually breaks in by its own: rolling a bat simply speeds the "breaking in process". Players in softball or baseball choose to do this to get the most out of the bat, right out of the wrapper. Before the player over grows the bat or the bat is simply worn out, this process is done. It is said that it was started in Southern California. In Oxnard to be exact by a 17 year old with English wheel machine. That led to further improvements in a machine alike the English wheel by different manufacturers. It has bigger nylon rollers to roll the bat parallel or perpendicular, without damaging the barrel.

Disclaimer: While this article states that rolling bats is not illegal, Kamloopssoftball.com makes no claims one way or the other to the legality of rolling bats. You need to check with your organization before using a rolled bat.

Test Results

Studies have been done on the performance of rolled composite bats vs. unrolled composite bats. The graph below demonstrates the results of these studies. It shows the improvement in the ball speed coming off of a rolled bat compared to the ball speed coming off of an unrolled bat.

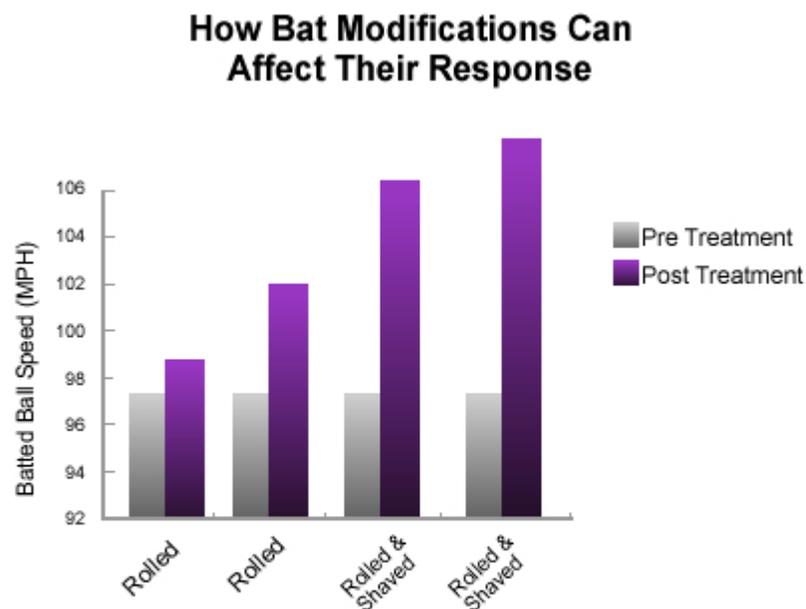


Fig 5 The change in performance of bats from accelerated break in processes.

Disclaimer:

The bar graph shows statistics on unrolled, rolled, and rolled and shaved bats. You should always check with your organization before using a rolled bat. It is highly recommended that you do not shave bats. This type of modification will shorten the life of a composite bat.