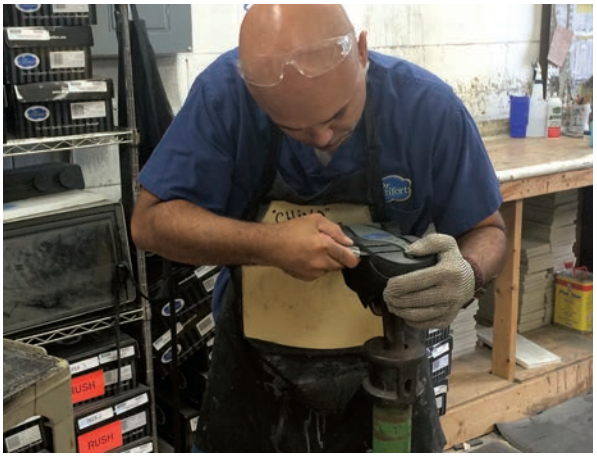
The Science Behind a Shoe Modification Lab

By Brian Lane, CPed, director of education/customer service at Dr. Comfort



While the need for custom shoe modifications remains high, the number of experienced technicians is few and far between. Shoe modification isn't something that can be learned overnight. ation lab employees boast more than 50 years of experience. That qualified experience has been passed on using a lot of hands-on training, which is apparent from the minute you walk into the lab.

To get an inside look at what happens from the beginning to end of the shoe modification process, I spent some time shadowing Luis "Chino" Sanchez, one of the lead cobblers in the Dr. Comfort Laboratory.

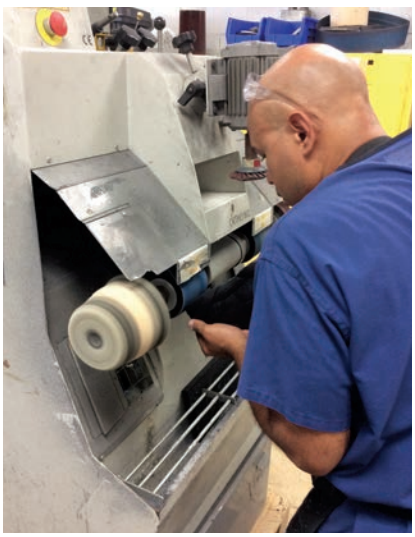
Standing in Dr. Comfort's shoe modification room I feel as though I have gone back in time to a traditional cobbler shop, only this shop has more modern day equipment. Chino takes a look at his first shoe modification request; a 3/4" lift in a pair of Dr. Comfort's 'Winner' athletic shoes. After reviewing the specifications, the first step is to write the specifications on a label and stick it inside the shoe. This guarantees that regardless of which lab employee works on the shoe, the specifications are always there with the shoe minimizing the chance for error.

The company believes a well-crafted shoe is one that does not draw attention, but instead blends in with regular footwear, allowing patients to feel comfortable in their own shoes.

While some may cut corners in order to save time or money, Dr. Comfort does things differently. The company believes a well-crafted shoe is one that does not draw attention, but instead blends in with regular footwear, allowing patients to feel comfortable in their own shoes. To accomplish this look, Dr. Comfort removes the sole of the shoe temporarily in order to add the lift material to the middle of the shoe, before reattaching the sole to the shoe's bottom. With the lift material in the middle, it's significantly less obvious that a shoe modification has been made.

To begin on the 'Winner' shoe lift, Chino places the shoe on a stand and uses a razor to carefully cut the sole of the shoe off right at the seam. He comments that the sole removal is one of the most critical parts of the entire process. As the sole starts to separate from the shoe, Chino sets the razor down and gently pulls the rest of it off. He then smooths the bottom of the shoe using the grinding machine's belt sander. With feet as sensitive as they are, this step is essential to guarantee that the patient doesn't later feel any imperfections in the shoe.

Chino picks up a sheet of black EVA (ethylene vinyl acetate), a plastic foam material used as filler in shoe lifts. Although light in weight, EVA is a strong, durable material, making it the ideal candidate for filler material. Chino places the EVA on the belt sander, which works to open the pores in the EVA, making it easier to bond to other material. The last piece to be grinded is the removed sole.

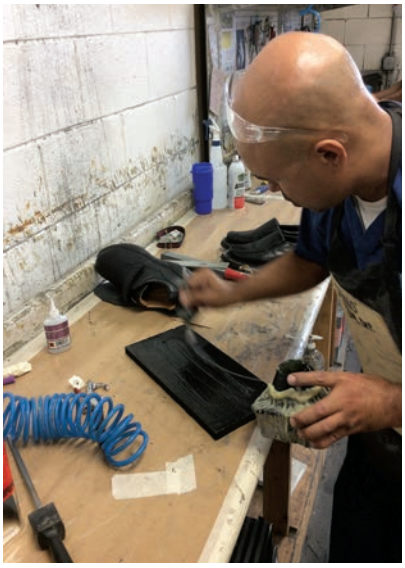


Super glue is then applied to the bottom of the shoe. Using a small piece of foam, Chino spreads the super glue evenly across the surface. The shoe is then set aside to dry for approximately 10 minutes. Chino is careful to keep the sole near the bottom of the drying shoe, to prevent it from getting lost in the vast array of shoes being modified in the lab.

Chino then brushes lower strength glue all over the EVA material. This also has to dry for about 10 minutes.

Once the glue on both the shoe and the EVA has dried, they are placed in the lab's oven. The heat allows the material to become more flexible and easier to work

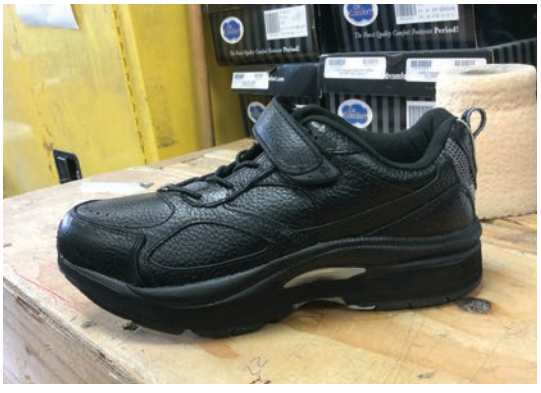
Shoe Modification Lab *(continued)*



with. This is especially important when bonding two materials, such as the shoe and the EVA in this case, as these different materials adhere best when heated. Chino takes the shoe and EVA out of the oven and glues them together.

Then it's back to the grinding machine, only this time Chino uses finer grit sandpaper. The bottom of the EVA is grinded to open its pores back up.

At a different grinding machine, this one uses a coarser grade of sandpaper, the edges of the EVA are grinded. Small pieces of black dust from the EVA fly off the machine. Every lab employee dons safety goggles earplugs to block out some of the grinding machine noise, long pants and closed toed shoes.



Chino takes out a ruler to measure the EVA, marking a few spots around the shoe where the EVA needs to be grinded off in order to meet the 3/4" specification. He uses these marks to draw a line around the entire outside of the shoe and then measures again to double check his work. Returning to the grinding machine, the bottom and sides of the EVA are sanded down to meet the doctor's specifications for the patient. More bits of black EVA dust fly off the machine. Chino measures the shoe again to ensure that the EVA measures in at 3/4"; he's spot on. He also places the shoe on a flat countertop surface and pushes on the toe front; this is to make sure the shoe maintains it's original curvature.

The top of the shoe sole is grinded to make sure it is a flat, smooth surface before being reattached to the shoe bottom.

The top of the shoe sole is then grinded to make sure it is a flat, smooth surface before being reattached to the shoe bottom. Chino places the sole onto the shoe a few times to test it, grinding it just right in between checks.

Luis "Chino" Sanchez takes the few extra steps to color match the paint to the shoe. This is another important step Dr. Comfort requires to ensure modified shoes blend in with their original design.

When the sole and shoe match perfectly, it's time to glue.

He brushes glue onto the EVA at the bottom of the shoe and carefully applies super glue to the outside edge of the shoe's sole. Chino again grabs a small piece of foam to smooth out the super glue, and then lets everything set for 10 minutes before attaching the sole onto the shoe.

Although the shoe is mostly black, there is a bit of silver detail on the sides. Chino covers these silver areas with painter's tape before spray painting the modified portion of the shoe. Looking at the shoe, one might think that the black EVA blends in well enough with the shoe, but Chino knows that it could be better. He takes the few extra steps to color match the paint to the shoe. This is another important step Dr. Comfort requires to ensure modified shoes blend in with their original design.

Once the painting is done, the tape is removed. Like a proud artist at their exhibition, Chino shows me the finished modified shoe—ready for the patient in need of that 3/4 " lift.

Not only does Dr. Comfort's lab make modifications to its own shoes, it also modifies brands outside of its own. Dr. Comfort serves as a one-stop shop for the podiatry market. Along with therapeutic shoes, the company provides custom inserts, functional inserts, support socks and compression hosiery, all made to meet the same high quality craftsmanship that is put into its shoe modifications. To Chino and the employees at Dr. Comfort, they aren't just working with another pair of shoes; they are providing footwear that can change one's quality of life.

For more information call 877-728-3450, visit www.drcomfort.com, or *click here.*