

Disc Care and Maintenance

by Jim Albrecht, Lakeside Shuffleboard Club

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Disc Preparation

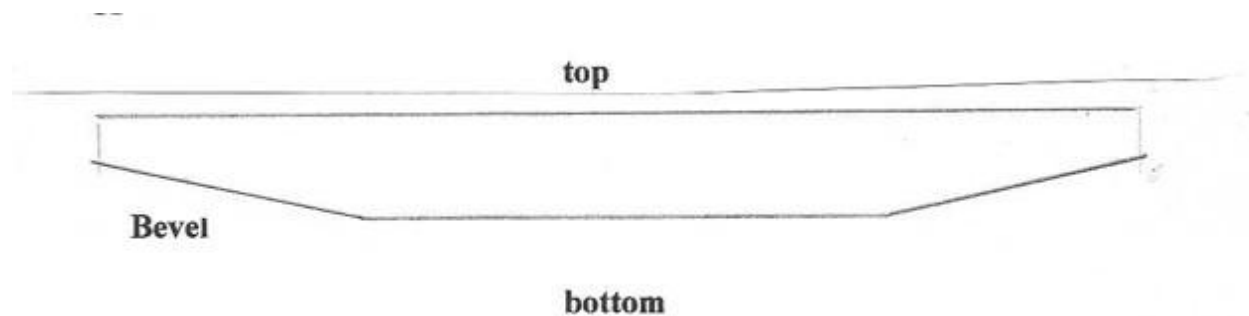
This disc preparation instruction explains how I prepare a disc for tournament play. Ideas were contributed with the help of Marvin McConnell. Both Marvin and I have science backgrounds and that led us to an empirical model. We experimented with concave, convex, and flat discs of different sizes.

Tools Needed:

- Spinner
- Microfiber cloths (3 different colors)
- Collinite 476s Super Doublecoat car wax
- Sandpapers: 40, 60, 80, 100, 120, 150, 180, 220, 320, 400, 600, 1000, 1500, 2000, 2500
- Straight Edge
- Feeler Gauge
- Rafter Square
- Large and small sanding blocks
- Fan

Shaping

As discs are made new or when the disc is examined with a very good straight edge pointed to a bright light or the sky the surface will appear flat or concave or convex. The disc I would "shape" can be new or used. To start, the bottom can be flat, convex, or concave. Some discs are easier to shape than others, but the ultimate goal is to produce a convex shape in which there is a three-inch centered flat and a beveled outer 1.5 inches wide with material removed so that the outer edge is 0.32 inches less than the center flat. Of course, the diameter of six inches is measured as $1.5 + 3 + 1.5$ inches across. An exaggerated side view would look like this:



To begin shaping I use our "spinner" (purchased from Marvin) and place the disc on the spinner bottom up. Turn fan on to blow dust away. I suggest sanding outdoors since the dust goes everywhere. Lightly hold the disc in place when turning the power on so the disc doesn't fly off.

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I use a handheld sanding block with grit #40 and move the block forward and back across the disc with medium pressure. It may take hundreds of passes to remove all scratches and shape the disc. If the disc is new this will remove a hardened molding disc bottom surface. Because the outside of the discs moves faster than the inside, the disc acquires a somewhat beveled outer edge as more material is removed compared to the center. Once the scratches have been removed, stop the spinner and place the straight edge across the bottom surface. Use the feeler gauge to 0.036 inches and see if the bevel is that or greater. The feeler gauge is used with a flat triangular square (i.e. rafter square) across the disc bottom then sliding the feeler at the edge to see if it will fit under. If not, sand and remove more material in the outer 1.5 inches. The feeler should be between 0.032 and 0.036.

We use #3 beads at Lakeside which are 0.0234 up to 0.0331 inches. The amount of the bevel should be large enough that the disc rides up and over the beads and slides without "snow plowing" the beads off the court. If the bevel is not large enough for the sand, adjust the outer 1.5 inches until the bevel is great enough.

After the bevel reaches the amount needed continue next with a #60 in a block about 50 passes; then #80 in a block; then the successively higher numbers. Once #80 is done, set that disc aside until all 8 discs are done. The discs change their shape with heat so let the discs cool off to do the remaining sanding/smoothing. At #120 drop the remaining passes to 30 each grit. After #120 I often just use hand sanding and 20 passes. The higher number sandpapers don't change the shape much, but they remove the scratches from the previous papers. The earlier sandpapers remove scratches and shape while the higher numbers remove earlier grit scratches. The grades range from fast removal of surface to less and less. The goal is to remove scratches then shape then reduce grit scratches to extreme smoothness. Smoother discs go faster/further. In between grits use a microfiber cloth to remove dust.

Sanding Blocks for Disc Shaping and Smoothing:

- #40 – 100-200+ passes to remove all scratches and shape.
- #60 – 50 passes.
- #80 – 50 passes. To allow disc to cool, continue with #40, 60 & 80 until all 8 discs done.
- #100 – 50 passes.
- #120 – 30 passes.
- #150, 180, 220, 320, 400, 600, 1000, 1500, 2000, 2500 – 20 passes by hand.

Waxing

Collinite 476s Super Doublecoat is a very hard car wax (available on Amazon, Walmart or Ebay for about \$20). It is what we use after trying 10 or 20 other waxes. If you find a better one let me know. The purpose of the wax is to make the discs go faster and to protect the shape of the bottom of the disc by preventing scratches. Next step after the sandpaper, waxing (also follow

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these steps for re-waxing after each tournament). Spinner "on"; then use a cloth of one color to remove dust and dirt; then use a pad applicator to apply a very thin coat of wax; then another color cloth to remove most of the wax for no more than five to ten seconds; then a last different color to buff for five to ten seconds maximum. The three colors of microfiber cloth are for separating the steps. When finished, the bottom should be mirror-like. The manufacturer recommends a 24-hour "rest" after application. Set the discs aside for play until the next day.

And ... all steps are done using a "spinner". Don't let the wax sit for long or it becomes hard too buff out. More coats seem not to have any additional benefit. We used to use the white "bar" wax but found when the heat of the afternoon sun came the discs became slower and sticky. We also ask shufflers to move the discs under our shaded court ends at the end of their match.

Normal waxing takes four to five minutes for a set of eight (about 1.5 hours after the tournament for all sets). I try to wax at the end of each tournament day even though wax has lasted 10 to 15 hours of use when we have social play.

Refinishing

This disc refinishing instruction explains how I revive a disc for tournament play. Even with player care not to abuse the discs they will get scratched. Scratches slowly accumulate, and I would say every three years I would like to revive them. Every third year I have "refinished" the entire set of 20 discs (not perfectly but much improved). I am not wanting to completely return them to perfection like when I first shape them, but to remove most of the scratches, not to remove them all. Most of the discs will fall within a range of 15.0 down to 13.5 ounces each. A dramatic (all scratches) removal would reduce the weight about 0.2 ounces. Repeated revival will eventually ruin a disc or a disc set. The removal should be limited to 0.1 ounces for them to last 30 years.

To revive them I would use all the sanding grits I suggested for shaping discs. That means 40, 60, 80, 100, 120, 150, 180, 220, 320, 400, 600, 1000, 1500, 2000, and 2500. There will not be as many passes on the spinner compared to shaping. What I have done is the following passes:

Sanding Blocks for Disc Refinishing:

- #40 – 100 passes to remove all scratches.
- #60 – 50 passes.
- #80 – 30 passes. To allow disc to cool, continue with #40, 60 & 80 until all 8 discs done.
- #100 – 20 passes.
- #120 – 20 passes.
- #150, 180, 220, 320, 400, 600, 1000, 1500, 2000, 2500 – 20 passes by hand.

Then wax. Refinishing and waxing takes about 20 minutes for a set of eight.

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I Believe In Marriage

Sounds like a sermon. In two weeks my wife and I reach our 58th. But I am really talking about discs.

I have a twin disc device Lary Faris made to launch two discs at the same time. I used it in an experiment with two discs when they were pushed to roughly number eight on the scoring triangle. By trying many discs, I found two that after many trials were extremely similar (same push resulting in same distance). So the experiment was based on the question, "Does weight matter?"

On one of the discs I taped a U.S. silver dollar having a value of about 0.943 ounces (roughly an ounce). That would be like 14.0-ounce discs in a set, with one 15.0-ounce disc. The heavier disc averaged 22 inches further over multiple trials. Now that 22 inches would be in an 8 scoring area of 36 inches. Bottom line, weight matters.

So for a matter of consistency we would like all discs in each color to be about the same. So how did I make married sets? I started with 320 discs and weighed all of them. The 4 heaviest reds and the 4 heaviest blacks made a set. The next heaviest red and the next heaviest blacks made set 2 and so on. In a set of 4, I made number 1 was the lightest, the second lightest became disc 2, the third lightest became disc 3, and the heaviest became disc 4. Then blacks in the same way.

The disc numbers are marked with small colored circles. Disc 1 has one circle etc., but number 4 has no colored circles. The extra black circle is for disc set owners to identify their set, perhaps with an initial. For the tournament sets, a number is the court number assignment. Formerly discs were numbered or marked by shufflers with chalk. During the warmups, players judged disc speed and marked them and/or exchanged information with their partner if doubles. The colored circles of my tournament sets may not be correctly marked, so it is up to the shuffler to still determine relative speeds. I have made my best attempt to have all sets "married" for everyone's consistency.



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Buying Discs

New Dimco #4 discs are no longer available for purchase. They rarely appear even on eBay. If you find an old Dimco #4 disc set it will cost about \$60 with shipping. Dimco #10 are much smaller for table-top shuffling; nice paper weights but NO. Old Dimcos are sometimes available from clubs as they replaced them with Arcos after the asbestos rumor. Sometimes for free! I have sent Dimco sandings to two different labs who responded “None Detected” for asbestos.

They will be chipped. I have repaired chips successfully with tape retainer and epoxy. Let the epoxy set for a few days then sand the epoxy to match the rest of the disc. Then paint with Rustoleum: Regal Red or John Deere Yellow, and Gloss Black. Dimco sets came in Red or Yellow, and Black.

When buying sets of Dimcos I found it useful to ask the seller to measure the height exactly and tell me how high all 8 discs would measure. If the 8 discs are stacked, they should be 6 inches or more. Ask. I then consult my chart (below) to help with the decision to buy or not. My usual hope is to buy those sets 6 inches or higher. The chart shows the average weight for each disc of stack heights I have measured.

Height of 8 Disc Set Stacked	Average Weight of Each Disc	
4.75 in	12.3 oz	
5 7/16 in	12.56 oz	
5 8/16 in	12.38 oz	
5 9/16 in	12.89 oz	
5 10/16 in		
5 11/16 in	12.95 oz	
5 12/16 in	13.44 oz	
5 13/16 in	13.6 oz	

5 7/8 in	13.8 oz	
5 15/16 in	13.84 oz	
6 in		
6 1/16 in	14.0 oz	
6 1/8 in	15.53 oz	Sunlife
6.25 in	14.7 oz	Freeglides
6 5/16 in	14.8 oz 14.58 oz	14.675 Freeglides
6 3/8 in	14.8 oz	
6 7/16 in	14.9	Freeglides

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Testing of Dimco Discs for Asbestos (None Detected)

Dear Tracy Foster - within the double sealed plastic bag is about a teaspoon of dust from the sanding of a plastic shuffleboard disc. I would like it analyzed for the presence of asbestos. I would like the sample titled "Dimco Disc Sanding Dust". There may be small amounts of epoxy and paint with the sample. Also enclosed is a check to ERI for \$45. Thank you for your service.

James W. Albrecht

ASH 190861

ERI A.S. No. 190861


ERI ANALYTICAL

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TESTING NVLAP LAB CODE 101232-0

LABORATORY ANALYSIS REPORT
NIST/NVLAP Bulk Asbestos Analysis Lab Accreditation Code No. 101232-0
TEXAS ASBESTOS LABORATORY LICENSE NO. 30-0007

TO: James W. Albrecht
[Redacted]

Report Date: 8/5/19
Sample Rec'd: 8/5/19
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LOCATION: Dimco Disc Sanding Dust.
COLLECTED BY: Customer

METHOD: Polarized Light Microscopy (PLM) analysis for asbestos in building materials by Interim Method for the Determination of Asbestos in Bulk Insulation samples, 40 CFR Part 763, Subpart E, Appendix E, and in accordance with ISO/IEC 17025:2017 standards. Quantification is by visual estimation. In accordance with the EPA revisions pertaining to friable materials, if the asbestos content is estimated to be less than 10 percent by visual estimation, the determination may be repeated upon request, using the point counting technique. Asbestos fibers may occur in particle size below the resolution limit of this analysis technique; TEM analysis is recommended on samples of floor tile determined to be <1% or none detected by this method. The percentage of asbestos reported refers to the overall percentage for the material provided, unless otherwise indicated. Samples determined to be <1% by visual estimation are automatically repeated using the point count technique. Samples are analyzed by layer but results may be combined if no regulated fibers were observed.

RESTRICTIONS: This report relates only to the items actually tested, and must not be used to claim product endorsement by NVLAP, or any agency of the United States government. Reproductions must include the entire report. Results apply to sample and information as received from the customer.

RESULTS: The percentage of asbestos reported is by visual estimation. Point Counting results, when appropriate, are reported in parenthesis after these results in the Sample Description.

Customer		ERI AS#	Results (ND=None Detected) (PC=Point Counting)	
I.D.	Dimco Disc Sanding Dust	190861	% Asbestos	Sample description
		A	ND	Homogeneous, black dust material containing <1% cellulose fibers, particulate and binder.



Analyst

Respectfully submitted,


Tracy E. Foster
Laboratory Technical Director

Note: "ND" = none detected.