Roll-on®
FLOOR SYSTEMS, LLC

50TH ANNIVERSARY

1969 - 2019

MORE GOLD MEDALS ARE WON ON ROLL-ON COATINGS THAN ANY OTHER.

THE GOLD STANDARD FOR HIGH PERFORMANCE COATINGS

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Dear skate center owner, operator,

My dad, Joe Nazzaro, with the help of some sharp chemists in Minneapolis, came up with the finished product, Roll-on®, by 1968. By 1972, my brother, John, was tasked with understanding the consequences of other coating types as they were tried and failed around the country. John entered an educational trial by fire while fixing them. In 1978, I re-entered the family business and was immediately launched into the field with floor sanders, squeegees, epoxies and urethanes. The information my brother gained to that time was imparted to me. Since then, I have continued to be a depository of the processes of creating and maintaining skate floors of all types. And I have never left the family - of Roll-on®.

In this booklet, I have tried to create a complete and easy to read understanding of roller skate floors: their different types, their different characteristics, their special maintenance needs as well as long and short term problems and fixes.

I've also structured each topic with a casual reading-time of 5 minutes or less in mind and laid the booklet out in such a way that you might easily locate topics and articles that are of specific interest to you.

This booklet is laid out in four sections:

- Section One: HOW WE GOT HERE. A history of skate floors, mechanical improvements on grip and later chemical coatings from 1930 through today and short summaries of available Roll-on coatings.
- Section Two: ALL ABOUT SUBSTRATES. What makes a skate floor a skate floor? Review of flooring best suited as skate floors.
- Section Three: THE ROLL-ON FAMILY OF COATINGS TODAY. A closer look at developing coating decisions today and tomorrow - includes costs of application of Roll-on products.
- Section Four: MAINTAINING AND PRESERVING SKATE FLOORS: Includes maintenance disciplines and tips that apply to all floor types and all floor coatings. The body of this section contains reprints of detailed articles written for Rinksider and Roller Skating Business industry trade publications.

It is my sincere hope that this booklet becomes your resource for time and money saving understandings of the flooring and surface upon which your livelihood depends.

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From 1939 through 1965, the grip of a hardwood skate floor was improved by periodic "Brush Cut Sanding" and spreading Plaster of Paris based "Powder" on it daily. Joe Nazzaro Sr. of San Mateo California, however, owned a maple floor that couldn't tolerate another Brush Cut. Costs of replacement threatened his livelihood. Through trials and errors, by 1969, his Roll-on® had set the standards for **grip, durability and ease of application** in urethane skate floor coatings.

In 1970, the Roller Skating Rink Operator's of America learned that "Powder" may be a health hazard. Hearing of Roll-on's success, and satisfied by testimony of its performance, Roll-on® was chosen as the coating for the annual National Roller Skating Championships from 1972 until 2016 when Traction® took over for their event.

Roll-on® products have been unequaled - successfully combining and balancing the three performance requirements of **sustained grip, longevity and ease of application** like Roll-on®. Many coatings can achieve one quality while sacrificing another other: greater grip causes greater abrasion and shorter life-spans; greater durability and wear resistance often sacrifices grip over time. It's a difficult balance. .

In 2009, ***State Agencies*** phased in Air Quality standards tougher than the Federal Clean Air Standards Act of 1970 which we answered by grafting compliant dryers on to our existing Roll-on® renaming it ***Roll-on® 340***. We met the requirements of the 30 or more states enforcing them while meeting our commitment of **sustained grip, longevity and ease of applicaltion.**

The ongoing adoption of local guidelines now has us monitoring changes in ***3,141 Counties, Boroughs, Parishes and Districts in the US***! Except in one California county, we offer a skate floor coating compliant everywhere in the US and as many other countries.

Only water based coatings can keep in step with these advancing and random changes. Facing this fact, we duplicated Roll-on® in an environmentally friendly water based system that has now been proven - both in the field and through 3rd party lab testing - to outlast and outperform our the Gold Standard of Roll-on® in **sustained grip, longevity and ease of application.** We call it ***Traction®.***

EVOLUTION OF RINK FLOOR SURFACES

IMPROVING SKATE WHEEL GRIP

1930 - 1965

Hardwood rink floors were "brush-cut" to open the grain of the wood surfaces so that the wood wheels (which were also lightly sanded on occasion) could better grip roughened surface. The thought behind the procedure was that by creating a rougher surface, increased friction would improve increased grip. The wood surfaces were becoming "work-hardened" from the constant presssures on the surface of the floors which caused slippery conditions. The sanding was repeated - usually every three or four years, depending on the volume of traffic the floor endured.

RESULTS — ***Destructive*** **- Removed the flooring over time.**

1940 - 1970-72

A powdered concoction proved effective in improving grip and postponed "brush-cuts." Skater's hair was filled with it by the end of a session, but the wheels gripped better.

RESULTS — ***Terminated*** **- OSHA deemed it unhealthy.**

1966 - 1975

URETHANE WHEELS AND FLOOR COATINGS DEVELOPED AMIDST SEVERAL CHANGING TECHNOLOGIES IN RINKS

Old wood and "plastic" compound wheels were replaced by better gripping Urethane wheels and floor coatings. Floors got tighter, colors introduced, sessions got larger, wheel noise was quieter, sound systems more dynamic and the rinks were dustless and fresher with the use of solvent based urethane technologies that eliminated wear of the wood sub-strates.

COATINGS FOR SKATING CENTERS

- **TWO PART URETHANES**
- **TWO PART EPOXIES**

LONG LASTING, REDUCED GRIP OVER TIME

1969

ONE PART URETHANES

Roll-on

COPIED — **Powdered - short lived**

Relabeled Gym Finishes — **Powdered, slick, short lived**

2000

WATER BASED Development begins

1998

Roll-on 2000

Roll-on

340 g/L

2010

Air Quality Standards Met in 49 States!

ULTRA-CLEAR

2012

Insufficient grip

2014

TRACTION™

We have always been the ones to beat. And our performance has remained consistent without compromise for over fifty years. Our coatings are made ONLY for roller skating centers, and and have sustained our Gold Standard.

SUMMARY OF COATINGS AND RE-COATINGS QUANTITIES AND SCHEDULES

Before moving into the text of this work, there are some basics that apply to all coatings on selected substrates (floors). Below is a summary review of basic coating application, dry times and spread rates of coatings we produce. This information will be expanded elsewhere in this booklet.

COATING NEW OR FRESHLY SANDED MAPLE:

Roll-on®

Step 1: 1st Coat - squeegee or roll at 200 sq. ft. gal.
Step 2: 2nd Coat - Recoat in 12 hours - Roll at 300 - 350 sq. ft. gal..
Step 3: 3rd Coat - Screen, add lines and markings - Recoat in 4 - 7 days - 350 - 400 sq. ft. gal.
Step 4: 4th Coat - Recoat 1 week - screen - achieves full gloss 450 sq. ft. gal. Skate in 24 hours.

- **Total application and dry time: 10 to 14 days or more**
- **Total gallons used on 12,000 sq. ft: 155 gallons**
- **Total cost estimate on 12,000 sq. ft: $10,000 (83¢ per sq. ft.)**

Traction®

Step 1: 1st Coat - apply seal coat - 400 sq. ft. gal.
Step 2: 2nd Coat - Recoat in 2 hours - apply seal coat - 600 sq. ft. gal.
Step 3: 3rd Coat - Screen add lines and markings - coat Traction® same day 800 sq. ft. gal.
Step 4: 4th Coat - Recoat Traction® in 2 hours - 900 sq. ft. gal - Skate in 24 hours.

- **Total application and dry time: 2 - 3 days**
- **Total gallons used on 12,000 sq. ft: 90 gallons**
- **Total cost estimate on 12,000 sq. ft: $5,800 (50¢ per sq. ft.)**

COATING BARE CONCRETE OR NEW HIGH DENSITY PARTICLE BOARD:

Blue Roll-on® with Super Base

Step 1: 1st Coat - Super Base - apply by airless spray 200 sq. ft. gal.
Step 2: 2nd Coat - Sand after 12 hours - recoat in 18 hours - 200 sq. ft. gal.
Step 3: 3rd Coat - Sand after 12 hours - Coat Roll-on® in 18 hours - 450 sq. ft. gal. Skate 24 hrs.

- **Total application and dry time: 5 days**
- **Total gallons used on 12,000 sq. ft: 150 gallons**
- **Total cost estimate on 12,000 sq. ft: $14,500 ($1.21 per sq. ft.)**

Traction® Color Options with Super Base

Step 1: 1st Coat - Super Base - apply by airless spray 200 sq. ft. gal.
Step 2: 2nd Coat - Sand after 12 hours - recoat in 18 hours - 200 sq. ft. gal.
Step 3: 3rd Coat - HideOut - custom color of choice - 600 sq. ft. gal.
Step 4: 4th Coat - Recoat HideOut - 2 hours - 700 sq. ft. gal.
Step 5: 5th Coat - Add Lines and markings, 12 hours - Coat Traction - 2 hours 800 sq., ft. gal
Step 6: 6th Coat - Recoat Traction 2 hours - 800 sq. ft. gal. - Skate in 24 hours.

- **Total application and dry time: 5 days**
- **Total gallons used on 12,000 sq. ft: 190 gallons**
- **Total cost estimate on 12,000 sq. ft: $18,000 ($1.55 per sq. ft.)**

RE-COATING PREVIOUSLY COATED SURFACES

When preparing to re-coat your floor, regardless of the coating you may select for your skate floor, always verify the maker and the identity of the previous coating before proceeding. When changing to a different coating, be sure the maker of your next coating understands the details and composition of the previous one. Was it a two part epoxy or urethane? Was it a solvent based coating made for roller skating? Was it a water-based coating normally used in gymnasiums?

RE-COATING ROLL-ON® OVER ROLL-ON® OR OTHER SOLVENT BASED SKATE FLOOR COATINGS - ON MAPLE, PARTICLE BOARD OR CONCRETE

Step 1: Preparation includes removal of gum and contaminants, abrading is required. The type of abrading suggested by the maker of the coating should be followed during preparations.

Step 2: Follow the "Tacking" or "Towel Dragging" instructions and the cleaning pattern recommended by the maker. Do not trust an automatic scrubber to accomplish the final cleaning - towel tacking is the most trusted method to remove all remaining contaminants after abrasion.

Step 3: Apply with the recommended application tools at 450 sq. ft. gal. - Skate in 24 hours.

- **Total preparation, application and dry time: 36 hours**
- **Total gallons used on 12,000 sq. ft: 25 - 30 gallons**
- **Total cost estimate on 12,000 sq. ft: $1,600 - 2,200 (14¢ to 18¢ per sq. ft.)**

COATING TRACTION® OVER ROLL-ON® OR OTHER SOLVENT BASED URETHANE SKATE FLOOR COATINGS

Step 1: Preparation includes removal of gum and contaminants, abrading is required. The type of abrading suggested by the maker of the coating should be followed during preparations.

Step 2: Follow the "Tacking" or "Towel Dragging" instructions and the cleaning pattern recommended by the maker. Do not trust an automatic scrubber to accomplish the final cleaning - towel tacking is simply the most trusted method to remove all remaining contaminants after abrasion.

Step 3: 1st Coat - Crimp Coat using the recommended application tools at 1,200 sq. ft. gal

Step 4: 2nd Coat - Traction in 2 hours - 800 sq. ft. gal.

Step 5: 3rd Coat - Traction in 2 hours - 900 sq. ft. gal. - skate in 24 hours.

- **Total preparation, application and dry time: 30 hours**
- **Total gallons used on 12,000 sq. ft: 35 gallons**
- **Total cost estimate on 12,000 sq. ft: $4,000 (34¢ per sq. ft.)**

There is no going back! Once converting a previous oil-based coating to a new water based coating, an oil based coating may not be applied to a water based coating until the existing water based coatings are completely removed.

RE-COATING TRACTION® OVER TRACTION® WATER BASED COATING

Step 1: Preparation includes removal of gum and contaminants, screening (100 grit) is usually advised when more than a year has passed between. Otherwise a thorough scrubbing with Traction Non-residue cleaner and abrasive scrub pad is sufficient preparation. Towel tacking recommending to detail.

Step 2: 1st Coat - Crimp Coat using the recommended application tools at 1,200 sq. ft. gal

Step 3: 2nd Coat - Traction in 2 hours - 800 sq. ft. gal.

Step 4: 3rd Coat - Traction in 2 hours - 900 sq. ft. gal. - skate in 24 hours.

- **Total preparation, application and dry time: 10 hours**
- **Total gallons used on 12,000 sq. ft: 35 gallons**
- **Total cost estimate on 12,000 sq. ft: $4,000 (34¢ per sq. ft.)**

WHEN IS THE BEST TIME TO SWITCH TO *TRACTION*® LOW ODOR, NON-YELLOWING *WATER-BASED* SKATE FLOOR COATING?

On Hardwood

• When the floor is newly installed or Switch when sanding all the way back to original virgin maple. Traction® costs are far less than Roll-on® when applied to new or freshly sanded hardwood. Your maple floor will not darken with age. Patches or Repairs will not be so visible. Traction® saves time and money.

• Switch when the odor of oil based recoating is interfering with customer relations. The public is more critical of stronger solvent odors (such as Roll-on®). Traction® is a low order skate floor coating.

Re-coating Color-Coated Skate Floors

Even though material costs of Traction® are higher than Roll-on®, when recoating, Traction® cuts application and down times offsetting the costs. Compare re-coating a 12,000 sq. ft floor (per published instructions - includes automatic scrubber).

ROLL-ON® RECOAT - Clear

Abrade: 2 people 4 hours = 8 hrs labor
Clean/Tack: 3 people 2 hours = 6 hrs labor
Coat: 4 people 1.5 hours = 6 hrs labor
Prep and clean tools 2 hours = 2 hrs labor
TOTAL MAN HOURS = 22 hrs labor
Allocated down time: 3 days

ROLL-ON® RECOAT - Blue
Usually Particle board or Concrete

ADDITIONAL WORK TO RESET LINES:
Add two persons - 6-8 hours labor
tape and lines =16 hrs labor
TOTAL MAN HOURS = 30 hrs labor
Allocated down time: 5 days

TRACTION® RECOAT - Clear

Abrade: 1 PERSON 2 hours = 2 hrs labor
Clean/Tack: - prep dust free = 0 hrs
Coat: 2 people 6 hours = 6 hrs labor
Prep and clean tools 2 hours = 1 hr labor
TOTAL MAN HOURS = 9 hrs labor
Allocated down time: 2 days

TRACTION® RECOAT - Any Color
Usually Particle board or Concrete

Traction is Crystal Clear over all Colors
Lines are preserved in Recoats.
No addition time for tape and lines
TOTAL MAN HOURS = 9 hrs labor

CUSTOM COLORS become an attractive option in the operation of the skating center regardless of the existing flooring substrate. You compliment or contrast your floor color with your existing or changing color scheme!

YOU CAN'T GO BACK. New technology is allowing us to bond a water based coating to a previously applied oil or two-part coating. However, the reverse cannot yet be done successfully. Water based coatings must be completely removed before the an oil-based coating can be re-applied.

SECTION TWO - SUBSTRATES

Before moving into coatings and maintenance, a review of substrates (the material of an "ideal" skate floor) would be appropriate here. Yes, there are only four "ideal" skate floor substrates. What is an ideal substrate? What is the "best" flooring material criteria?

- It can be leveled to within ¼ inch deviation within any 20 foot radius.
- It can offer a highly slip resistant surface to urethane skate wheels.
- It can resist long term (over 10 years) consequences of climate variations.
- It can be repaired if damaged.
- It can tolerate long-term stresses (like "side-thrust") caused by the work-hardening phenomenon of pressures from continuous skating; the speeds and compression from the wheels and the impact of damaging hardware.

What are substrates that have been tried and found lacking?

- Oak: It splinters
- 2" concrete cap on an undesirable substrate: It breaks up over time.
- Pecan: It harbors undetectable eggs of wood-boring insects
- Masonite: Too thin, responds to moisture, resists coatings.
- Plywood: Delaminates and breaks down over time.
- OSB: Flake board, delaminates, breaks down over time, resists coating.
- Asphalt: Risky - reacts to subsurface moisture - oxidizes - "pot holes".
- Parquet: Skates great when installed right - much too expensive today.
- Southern Maple: 25% softer grain and lower density than Northern Maple

**It should be noted that some rinks may be operating well with the above substrates and others that are not on the "ideal" list. They still operate today, skate safely and serve their communities.*

What are "ideal" substrates?

- **CONCRETE** - Meets all criteria - an inexpensive option and became a choice with advent of coatings in the 70s.
- **HIGH DENSITY PARTICLE BOARD** - meets all criteria above 45 lbs per square inch density and became a choice with advent of coatings in the 70s.
- **INTERLOCKING TILES** designed for skating use - meets all criteria, some stretching from "side-thrust" possible but replaces easily. Also is the only portable option when leasing a location for short terms. These systems are relatively new arrivals in our industry with differing reviews.
- **NORTHERN HARDROCK MAPLE**: most aesthetic, traditional, meeting all criteria.

Misunderstandings of substrates other than maple often start with the notion that maple has more cushion or is somehow more "bouncy" and that other substrates are "harder" - especially concrete slabs - which may contribute to increased injuries. As of this writing, and reflecting across the past fifty years of field reports, there is no evidence that any of these substrates has led to increased injuries of skaters when comparing one to another. It should be noted that outside the US, 90% of the public skate on surfaces that are concrete.

APPEARANCES MATTER - Conditioned Audiences must be considered

The selection of substrates has historically been based on what the skating public in that specific community expects to see when coming through the door, how the center is marketed and weighing budgets against the preferences and often strong opinions of the owner. If a majority of the public in a community has been skating on hardwood since the turn of both centuries, it may be up to the operator who selects concrete or high density particle board for the skate floor to educate the public and prepare them to accept the different look. Concrete, High Density Particle Board and Maple all skate the same since it is actually the coatings that are being skated on. The grip and feel of the floors are identical. All that has changed is the visible straight lines of the boards and grain in the wood as well as the pattern at the turns on the floor. The other two choices have no grain, but solid colors and graphic designs and the interlocking tiles can render geometric patterns. Operators deciding to create a new center featuring colors on the skate floors within markets accustomed to tradition hardwood in rinks, should add to their work-list, the need to acknowledge and promote the difference favorably.

SIZE MATTERS

When planning a floor size, 60' x 160' - in the 9,500 square foot range - should be considered the SKATER'S minimum regardless of the known population and demographics. The skaters need the 60 foot width to comfortably navigate the radius of the turn, a narrower width is not only uncomfortable for the skaters, but the skaters become fatigued sooner on the floor.

The straight away is viewed the same way - the skater needs to return to an upright position after leaning into the radius. Ideally, the skater gets in at least 6 strokes upright before leaning into the turn again. Skaters actually rest and re-center their body while stroking in the upright position and, just as happens in a tighter turn, the fatigue sets in sooner if the skater doesn't come back upright long enough. So the "track" skated on a 60 x 160 really turns out to be about 45 x 125 since 10 or 15 feet are shaved off each end of the floor as the skaters head into the turns. Fatigue will send the skater off the floor sooner - and the skater doesn't know why, but they're tired or they're just not enjoying themselves. It's not feeling fun anymore. Time to go home.

And that is the economics of it. Less, really is less. If the floor is shorter, so will be the time spent on it. When planning a floor size, start with 60 x 160, then factor in population and demographics in your business plan while looking over the entertainment competition. After all, 1½ percent of the population of a community with average demographics can be drawn to a skating center once a week. These factors can grow the floor. But, when looked at realistically, these same factors can reveal that a skating center might not be the best investment at that time.

CONCRETE SUBSTRATE

The simplicity and low costs of this installation has helped its popularity in the industry. The basic recommendation is to contact a reputable concrete contractor with the information that the slab is best poured in a single pour - a monolithic pour - often using a "bridge screed" to accomplish a seamless floor. The criteria of ¼" in 20 foot radius may press the limits of the contractor's abilities, but it must be so.

There are other methods of installing a concrete slab. "Post Tension" Is a technique that factors density into the operation, and "sectional pours" are the standard. The butt-joints in sectional pours should use steel dowels and straps to prevent heaving. Thicknesses can vary based on the soil in an area, it is often suggested to use warehouse specification common to an geographic area - usually a thickness of 4 or 5 inches - BUT with 3/8" ***rebar set on one-foot centers***. This additional rebar in a normal pour avoids long term heaving, breaking and cracking and is recommended as part of the specifications.

Coating comes after the curing of the slab. Trouble can come when a contractor places a curing compound in the concrete mix. Many curing compounds can interfere with adhesion of coatings or block them completely. As a result, a "natural cure" is preferred by many coating manufacturers. However, if a contractor resists the idea of a natural cure, they should be directed to the manufacturer of the coating intended for use on the skate floor. Roll-on and others offer helpful publications that suggest the muriatic acid or mechanical profiling preparation once the slab is cured. A link on Roll-on.com is provided here: http://www.roll-on.com/instructions/instructions_concrete.pdf

EXISTING CONCRETE SLABS

Assume Nothing: Building conversions present their own set of challenges. All concrete slabs are not created equally and even though each may look the same as the other, we may never assume they are like. Achieving the best understanding of what is ***IN, AROUND AND UNDER*** the concrete substrate will an effort that will pay off in the long run. Slabs should be tested to see if they can be coated properly.

Test a used or new concrete slab with a Muriatic Acid solution found in most hardware stores in the garden section. Wear rubber boots, rubber gloves and protective eyewear. It dries skin out quickly and is injurious to eyes. Its neutralizer is white vinegar. Keep a gallon in the work area. Mix 1 cup muriatic acid in 4 parts water in a plastic container. Apply pancake sized puddles randomly around the floor. The clear mixture should turn green or greenish yellow - if so, the slab should accept coating when cleaned and thoroughly etched. The solution should react the same in all areas tested. If the puddles remain clear, without a reaction, there is a contaminant on the floor that will compromise adhesion of the coatings applied to it. Contact someone who has directed the removal of these contaminants in the past. Much can be learned at this link:

http://www.roll-on.com/instructions/instructions_concrete.pdf

(Muriatic acid etching or mechanical "profiling" of the substrate will take place after a new slab is poured or the old slab is tested. This writer has a strong preference for acid etching over mechanical - grinding or shot-blasting - profiling.)

ON THE LEVEL

In the event of unevenness, heaved and separated butt-joints, cracking, and issues with the plane of the substrate, the epoxy "primer" applied before the finished skate coat can solve some of the issues. Ardex manufactured fillers are usually acceptable for larger filling and leveling tasks. Terrazzo Grinders may be necessary. Shot Blasting or Bead Blasting may also be a solution leveling a slab. See "Maintenance" in this booklet.

THIS LAST RESORT IS NOW MY FIRST CHOICE

It happened about twenty years ago: “There I was, knee deep in wet buffalo chips, trying to build a fire!” My Texas-born neighbor uses that expression when finding himself in a tough spot. I had faced many troubles during my thirty years converting asphalt, particle board and concrete into smooth and safe skate floors, but nothing like this. Always the last contractor to step into a job site during new rink installations or conversion – "the floor guy" – I have taken pride in completing well over 1,000,000 square feet of coatings and solving usual and unusual problems along the way. I have never left a site without accomplishing my mission to the anxious smiles on the faces of the new operators as I rode off, triumphant, into a perfect sunset. I know that sounds a bit grandiose, but I'm good at what I do. Once inside this job site, I knew ***This*** was going to be different.

I found myself standing in the middle of the most marred, scraped, and unevenly finished 11,000 square feet of fresh concrete ever intended for use as a skate floor. After walking the floor, occasionally extracting protruding cigarette butts, candy wrappers, bits of cut wire and insulation from the surface with my pocket knife, I finally stopped, turning to survey the distortions left from a careless contractor, completely “bum-fuzzled” (another Texas expression). I had to allow the idea to take hold that I might not be able to save this one. In all other jobs, I could apply a remedy (heat, cold, chemical, sander, grinder, air or dehumidifier – sometimes time itself would solve a problem) but how was I going to tell this hopeful couple – their rink nearly complete – that their dream was now a nightmare from which I could not wake them?

Calling my factory, I described the situation, desperate for a solution. No one on the other end of the line could give me a way out but I was told to wait while they researched the issues within their network. The answer, the remedy – the perfect solution – came the following day. But a second and more devastating problem also came to the surface of the concrete that night. When attempting to determine how the imperfections might be overcome in some places using the coatings that had been shipped into the site for me to apply, I discovered that an additive had been mixed into the concrete during the pouring (used to accelerate curing) which we specifically prohibit when working with a contractor. The nature of the additive prevented our present coatings from adhering to the concrete. All was lost.

ZAMBONI® ON CONCRETE

Many of us have heard of the Zamboni® – a machine developed 60 years ago by Frank Zamboni for use in ice skating rinks. The machine "shaves" a fine layer of ice from the frozen surface while laying down a thin layer of water which immediately freezes behind it. It creates a brand new, clean, smooth and level ice rink in no time at all. *Abrasive Blasting*, although completely unrelated to the ice resurfacing machine, is the general category of equipment designed to propel particles under pressure. We are most familiar with Sand Blasting which uses the process patented in 1870 by Benjamin Tilgham. At first designed to prepare smooth surfaces for painting, plating and even shaping objects, pressurized fluids were initially used to forcefully eject the abrasive materials. Air pressure is used for somewhat larger jobs. The process that was introduced to me to solve the first, as well as to prepare for the solution to the second problem on this floor uses high velocity centrifugal wheels (patented in the 1930s by Wheelabrator) to propel hardened metal shards or buck-shot depending on the condition and hardness of the sub-straight being treated or the condition and hardness of the film (surface) being removed. The process applied to concrete surfaces is called Shot Blasting. One of the more impressive uses of this technology came about in the late 70s when Burlington Northern railroad developed repainting stalls similar to a car wash where paint and rust on rail cars would be stripped by shot-blasting heads and emerge repainted and numbered in a single pass. On concrete, an experienced shot-blasting operator can salvage disastrous results from a careless contractor. More commonly, shot blasting is used to correct uneven pavement on roads and bridges as well to clean and resurface airplane hangar floors. When watching the equipment run, once having seen the Zamboni® in operation, it is natural to compare the two. Equipment and experienced shot-blasting crews are becoming more and more common throughout the country.

A most important advantage in the use of this type of equipment over ordinary floor machines and grinders is in the Shot Blaster's consistency of finish. Grinders, even when used by careful and experienced operators, can leave a concrete floor with "new-moon" shaped abrasions that become another part of the problem while working toward a solution. (Some of you know *exactly* what I'm talking about.) It has often been the case that a grinder causes more trouble than it was brought in to solve. Until learning of, and bringing in, the shot blasting crew to help level the floor discussed above, our only remedies were long hours, added expenses in labor and coatings and imperfect results.

The Shot-blasting crew arrived (from a distance of 400 miles at that time). Using a dustless machine cutting 36 inch swatches, they completed their work in less than 8 hours and left me with a surface I could easily handle. What about the concrete additive blocking adhesion of the coatings? By the time the crew had arrived, my factory informed me that they had recently completed research and production of a "barrier coating" they developed for Terrazzo – concrete and granite that is polished to a glass-smooth finish. They were sure that it would anchor into the pores of the concrete and give the skate floor coatings something to hang on to. I applied the barrier coats when the crew left and the remaining skate floor coatings as well. As I had come to expect, the

I share this story with you here to stress the importance of keeping up with ever changing technologies. One of the more prohibiting factors in converting existing buildings into skate centers is that their floor specifications deviate too far from our industry standards or the previous flooring materials used cannot easily be removed. I am receiving calls from more and more prospective rink operators in small and large communities looking to converting an existing building in order to create new skating centers. Shot Blasting will reduce the floor problems most commonly faced in such conversions and improve possibilities for growing our industry. Where once chemical stripping followed by laborious grinding was the only solution to the resurrection of a concrete slab for use as a skate floor, shot-blasting is now the first on my list when asked by prospective rink owners how to remedy problems with - and how to resurface - an existing concrete skate floor.

HIGH DENSITY PARTICLE BOARD

INSTALLING HIGH DENSITY* PARTICLE BOARD FOR USE AS A ROLLER SKATE FLOOR.

This type of installation is recommended when 1 inch tongue and groove (T & G) HIGH DENSITY* particle board is unavailable. It is an effective and proven substitute.

1. Ideal leveling of concrete sub-straight is 1/4 inch deviation in 20 foot radius. Ardex manufactured fillers are acceptable. Grinding may be necessary. Shot Blasting or Bead Blasting may also be a solution in helping to level a slab. 15 pound roofing paper can be used as shims as well.

2. A "roof" is installed on the concrete sub straight: Hot or cold tar is applied to the concrete surface. 15 pound felt roofing paper is installed and tacked together with mastic at generous over-laps.

4. A 1/2" to 3/4' Foam or Tar impregnated Cellotex is laid length-wise on top of the paper.

3. Two Layers of 1/2 inch (1.27cm) HIGH DENSITY* Particle Board are glued and screwed in place - the bottom course set 45 degrees to the length of the floor - the length of top course aligned with the length of the building. The layers are laminated by coating with common wood glue (applied with rollers) and secured by pilot holes that guide flush pan head 3/4" course thread screws ON ONE FOOT CENTERS (not counter sunk - heads are revealed and easily located). The screws "clamp" the glued sheets together and must be removed when the glue has set.

4. After removing screws, floor preparation begins. At this point care is taken not to contaminate the floor by tracked dirt and other substances. Liquids should not be carried onto floor or to its perimeter until all coats are completed. The particle board is sanded with 16 - 17 inch floor polishers with disc sanding attachments driving 60 grit -16" or 17" sanding discs which remove all contaminates, feather butt-joints if necessary and profile the surface of the boards to receive the Epoxy primer, made by Roll-on® Floor Systems.

5. Controlled cleaning is done by avoiding sending the dust into the air. Once the floor is carefully broom cleaned, a thorough vacuuming will pull dust from all joints and screw holes.

6. Super Base is applied by following manufacturer's instructions across a five day duration.

7. Color and Skate Coatings by Roll-on® Skate Floor Systems will follow final application of the Super Base. A Roll-on® consultant can suggest choices in roller skate coatings and colors. Traditional solvent based blue Roll-on® or advanced water-based Traction® Skate Floor Coating preparation and application instructions as well as videos are located at **www.roll-on.com**.

Particle Board is not OSB or OMB. Above is a cross section of *Particle Board* for Reference.

DETERMINE PARTICLE BOARD DENSITY

1. Measure the length, width and thickness in inches of the particle board sheet, using measuring tape.

2. For instance, if the board measures: 24 inches by 36 inches by ½ inch thick, divide each separate measurement by 12 to find dimensions 24" = 2 feet, 36" = 3 feet and 1/2" = 1/24 feet, which is 0.0416 feet.

3. Multiply all of the dimensions of the particle board sheet together to find the volume - in the example: 2 x 3 x 0.416 feet = ¼ cubic feet = 0.25 cubic feet.

4. Set the particle board sheet on top of a scale to find the weight in pounds.

5. Divide the weight of the board in pounds by the volume of the board in feet to find the density in pounds per cubic foot. If the 0.25 cubic feet board weighed 8 pounds: 8.0 / .25 = 32 pounds/cubic foot.

6. Classify the board as **low density** between 25 and 37 pounds per cubic foot, **medium density** between 37 and 50, **high density** when greater than 50 pounds per cubic foot.

INTERLOCKING SKATE TILES

Why would a coating company include interlocking skate tiles in a bragging brochure? Simply said, interlocking skate tiles do not achieve the higher static coefficient of friction of dedicated roller skate coatings. Nor will roller skate coatings easily adhere to them. However, we have confronted site conditions where interlocking tiles were the only option and have recommended these systems so that a skating center could overcome the adverse conditions of the site and succeed. An Interlocking Skate Tile system offers sufficient grip and integrity to perform well for recreational public skating and it becomes a contender when:

1. A concrete substrate cannot be coated and only reaches a near level status with fillers and grinding which requires a secondary flooring to be laid on it (Particle Board or Maple). Although High Density Particle Board is also a contender in this scenario, a slab of this type still puts other options into play.
2. Seasonal or occasional light flooding is possible. The possibility of standing water eliminates all other options, including coated concrete.
3. The drainage of the building is such, or the water table beneath it is such that the concrete substrate is sitting atop a source of subterranean water (active spring, seasonal drainage) that wicks up through the slab. These buildings exist - ironically we own a warehouse that cannot be coated because of subsurface moisture.
4. A short-term (5 year) lease may provide reason to retain the floor as a moveable asset and coating the existing concrete slab is not an ideal option.

Owing to the water resistance of interlocking tile, after diligent investigation reveals certain site specific water related issues as those above. Interlocking skate tiles have aerating qualities that no other roller skating surface can claim. Items 2 and 3 above are insurmountable by coatings or wood-borne substrates.

HARDWOOD FLOORS - THEY FLOAT

Regardless of the construction of Maple Skate Floors in the past, today's floors are installed "floating" on the concrete slab. The maple boards are nailed to two layers of plywood which has been placed atop a heavy moisture barrier that separates the slab from the entire system. The flooring is cut 1½" away from the walls around the entire perimeter of the center so that the entire system can grown or shrink with the changing seasons and climates. There are many, many exceptions to this type of installation as one steps further and further back in time. But, in a perfect world, the simple system above, when installed and maintained properly - barring any disaster - will outlive us all. Remember this important point - that when discussing installation with a competent gym floor installer who has not tackled a skate floor - the floor is laid and nailed onto plywood laid on a thin acoustic layer and a moisture barrier - and it floats. We normally do not use "stringers" or pads which can transfer and dissipate the energy from skate wheels and produce an effect that "slows the floor down."

NORTHERN AND SOUTHERN - HARD AND SOFT MAPLE

The skating industry standard for hardwood skate floors is "Northern Hardrock Maple." It is costly and beautiful. Cost has driven the exploration and acceptance of other substrates (mentioned above) and the public's acceptance of them has reduced the number of hardwood installations over time but not the initial interest and sincere desire to install Maple. Hard Maple and Soft Maple are quite different. First, Soft Maple includes several species of Maples while Hard Maple is only one species, *Acer saccharum*. Hard Maple is between 30% and 45% harder than all its softer cousins.

MAKING THE GRADE

Maple is graded by MFMA (Maple Flooring Manufacturers Association) standards using terms such as 1st Grade, 2nd and Better and 3rd Grade. Loosely stated, the higher the grade, the longer and purer (knot free) are the boards. So a first Grade load will have mostly long boards - 4 to 6 feet and the grain will be consistently fine and evenly colored, while the 2nd or Better will have some shorter pieces but still fewer color imperfections than 3rd Grade, which will have a blend of longs, shorts, knots, dark grain and darker boards. The materials cost of the wood goes down with the grade. Since the 60s, Third Grade is often chosen for its color variance. It is just as hard. However, the abundance of short boards in a Third Grade load can extend the installation time for reasons a floor installer can easily explain as they must handle many more shorter boards with addition splitting and waste. Follow this link to see the visual differences in MFMA grades:

https://www.maplefloor.org/TechnicalInfo/Grading-Rules.aspx

First Grade

Second and Better Grade

Third and Better Grade

Third Grade

The difference in tone and color of the MFMA grading system is easily seen above.

Roll-on®
FLOOR SYSTEMS, LLC

www.roll-on.com
233 W Pipeline Road
Hurst, Texas 76053
(817) 571-2438

1969 - 2019
50 YEARS
STILL ROLLIN'

THE GOLD STANDARD

FOR FIFTY YEARS

MORE GOLD MEDALS ARE WON ON ROLL-ON COATINGS THAN ANY OTHER.

TRACTION®
FLOOR SYSTEMS, LLC

Water Based Skate Floor Coating Accepted and Compliant in All 50 States.

Roll-on®
FLOOR SYSTEMS, LLC

Solvent Based Skate Floor Coating Accepted and Compliant in All States except California.

DISTRIBUTORS & AGENTS

S.E. Skate

Southeastern Skate Supply - Virginia
2917 Nicholas Ave NE
Roanoke, VA 24012
(540) 342-7871

S.E. Skate

Southeastern Skate Supply - Georgia
462 Veterans Memorial Hwy SE
Mableton, GA 30126
(770) 944-1322

REBECCA'S TOYS & PRIZES

Rebecca's
233 W Pipeline Rd
Hurst, TX 76053
(817) 545-2745

Roll-on®

SKATE FLOOR COATING

ONE-PART URETHANE

The Gold Standard

Yes, it's true - Roll-on® is celebrating 50 years as the most popular and relied upon skate floor coating in the United States. Roll-on is consistent and trust-worthy - the best example of proof of the phrase, "If it's working why fix it?"

Designed by a skating center operator *for* skating center operators, easy and economical to prepare and apply - just keep it clean to retain its grip. We know its importance to your livelihood and our service matches our product.

The Roll-on® formula is original, proprietary and exclusive to us. It is not offered in any other market. Nor is it a "re-labeled" mass-produced coating. It's been copied, never equaled for its combination of Sustained Grip & Durability.

INTRODUCING

TRACTION®

ROLL-ON® Floor Systems, LLC has invested 5 years to

CHANGE EVERYTHING!

Traction® Water Based Skate Floor Coatings and Finishes

- COMPLIES WITH AIR QUALITY STANDARDS IN ALL STATES
- AIR SMELLS CLEAN IMMEDIATELY AFTER COATING
- PREPARATION AND APPLICATION COMPLETED BY UNSKILLED LABOR
- CRYSTAL CLEAR FINISH NEVER YELLOWS
- GRIPPY - LONG LASTING - EASY TO CLEAN
- CAN BE COATED OVER ROLL-ON AND MOST OTHER FLOOR COATINGS
- CUSTOM COLORS! SELECT ANY COLOR IN THE RAINBOW!

Haygood Skating Center* design for their growing Roller Girls bouts: NO MORE SANDING!

Columbus Skating Center* using Hideout™ coating for their skate floor:

**** Both skate floors are converted from oil based finishes (Roll-on and other brands) using clean, environmentally friendly and proven water based Skate Floor Coating Systems - coating systems per square foot costs above do not include labor and shipping charges.***

It's time to Go Green or any other color you can think of!
Call Joe Nazzaro at Roll-on Floor Systems to discuss your new choices.
(817) 994-1953

Developed by Roll-on® Floor Systems, LLC. Available through:

Georgia	**Southeastern Skate Supply**	**(770) 944-1322**
Texas	**Rebecca's/Nazzaro Enterprises**	**(817) 545-2745 ext. 3**
Virginia	**Southeastern Skate Supply**	**(540) 342-7871**

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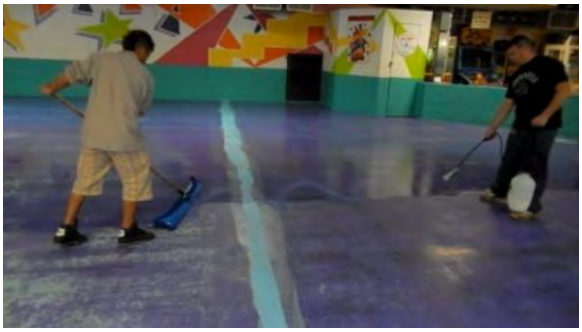
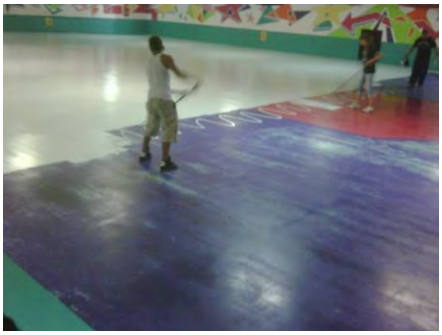


PRETREATMENT BONDING WATER BASED COATINGS TO ALL TYPES OF OIL OR EPOXY BASED SURFACES

A laminating and bonding pretreatment for use with Traction® skate floor coating or HideOut™ water based pigment. Originally formulated to reduce preparation times for water based coatings, Crimp Coat™ was discovered to bond water based coatings to other coated surfaces! It works! We have featured a dark purple and red floor often in our promotional literature to demonstrate the point. Crimp Coat™ **saves on labor and down time!**



CUSTOM COLORS FOR ALL SKATE FLOORS

HideOut™ is a pigmented primer designed as a custom coloring laminate in **Traction® Skate Floor Coating Systems** and should never be subjected to foot traffic or skated on without completing Traction® top coatings.

Our lab guys produced a White Base latex paint to be applied in our system like an ***Oreo Cookie center filling*** and in any color of the rainbow!

Any floor design may now include mascots, logos, corporate partners or sponsors. Colors remain vibrant under multiple layers of pure, tight and clear Traction® skate floor coatings that never yellow. HideOut™ is a custom white base that can be tinted locally by any paint supply outlet. We provide samples of HideOut™ to test custom colors and help designers determine the best choices.

INTENSE!

Roll-on® FLOOR SYSTEMS, LLC

TRACTION® FLOOR SYSTEMS, LLC

Firefly™ Luminosity

Make your Skate Floor POP!

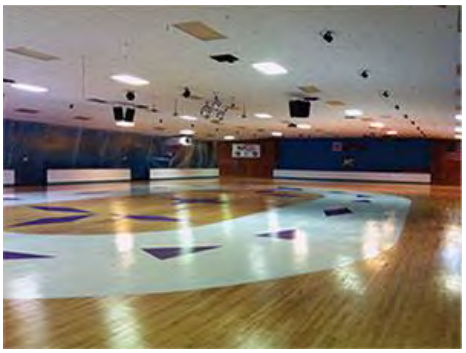
Firefly™ Luminosity may be added to Roll-on® or Traction® Skate Floor Coatings to create GRAPHIC DESIGNS, TRAFFIC PATTERNS, CIRCLES AND LINE ACCENTS in an invisible fluorescent coating that only becomes visible when illuminated by black lights.

Available through authorized distributors only.

Roll-on® Floor Systems, LLC • 233 West Pipeline Road, Hurst, Texas 76053 • (817) 571-2438 • www.roll-on.com

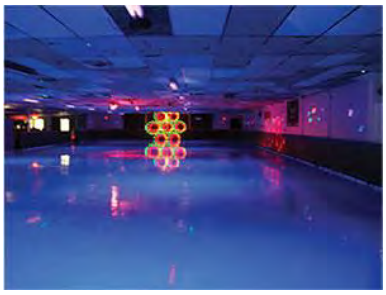
TRACTION®

WOOD SEALER



FOR NEW AND DEEPLY SANDED WOOD FLOORS

Traction® Sealer is required in all new hardwood floor installations or all wood floors sanded back to "virgin" wood condition when completing a Traction® Coatings System. We urge those who are undertaking a complete sanding of their skate floor to consider switching to water-based skate floor coatings at that time. **A complete Traction™ System costs less, smells better, applies quicker, uses less labor and dries faster than completed multiple coats of Roll-on®!**



Firefly™

Black Light Responsive Skate Floor Additive

A simple **additive** to our family of skate floor coatings that brings a whole new dimension to any skate floor. Coat the entire floor or use accent templates. Firefly™ remains invisible until the black lights come up.

FUN FACT - Microfiber

Production of ultra-fine fibers (less than 0.7 denier) dates back to the late 1950s. In the 1960s by Dr. Miyoshi Okamoto. Okamoto's discoveries, together with those of Dr. Toyohiko Hikota, resulted in wide industrial applications such as *Ultrasuede*, also known as Alcantara, one of the first successful synthetic microfibers, which found its way into the textile industry market **in the 1970s**. Microfibers were first publicized for cleaning in the **early 1990s** in Sweden, and saw success as a product in Europe over the course of the decade. **In 2007**, Rubbermaid began a line of microfiber products for American markets, the first major company to do so. According to tests using microfiber materials to clean a surface leads to reducing the number of bacteria by 99%, whereas a **conventional cleaning material reduces this number only by 33%.**

HIDEOUT™

Base Color Waterborne Intense White

- Excellent pigment base for Traction® Skate Floor Systems.
- Quick-leveling, low-foam formula excellent for roller application.
- Complete hide in 1-2 coats.
- Excellent compatibility with Roll-On®, Traction®, Crimp Coat™, and most water based finishes.
- Low-odor, non-flammable, water-based.
- Easy water clean-up.
- High-gloss finish.

CAUTION: Hideout™ is a pre-coating designed as a laminate in Traction® Skate Floor Coating systems and should never be subjected to foot traffic or skated on without completing approved top coatings.

DIRECTIONS: Refer to Hideout™ brochure for complete preparations and application instructions.

Although thorough screening may be sufficient, an approved primer or laminate coating should be applied to previously coated surfaces. We recommend Crimp Coat™ Laminating Primer.

1. For newly installed floors, follow manufactures recommendations for approved primers and sealers before application.
2. Application by roller or airless sprayer is recommended. For rolling instructions, see Hideout brochure for details and procedures.
3. Coverage averages 800 square feet per gallon.
4. One hour dry time, recoat in two hours.
5. After 4 hours drying, sanding or light screening recommended
6. Apply Circles and Lines using recommended acrylic latex enamels.
7. Clean up with soap and water.
8. Protect from freezing.

Properties

Density – 10.2 lbs/gal
Viscosity – 2000 – 4000 cP (Brookfield)
Solids – 44 – 46%
TiO2 – 17%
Coverage – 800 sq. ft./gal
Dry Time – 1 hour
Recoat Time – 2 hours
VOC – 150 g/L
Meets Strict Clean Air Requirements: VOC (minus water) < 340 grams/liter.
Classification: Architectural Floor Coating.
Thinning Instructions: Do not thin.

Meets Strict Clean Air Requirements: VOC (minus water) < 340 grams/liter. Classification: Industrial Maintenance Coating. Thinning Instructions: Do not thin.

Roll-On® Floor Systems, LLC
233 WEST PIPELINE ROAD
HURST, TEXAS 76053
Phone 817-571-2438
www.roll-on.com

10102018

TRACTION®

Skate Floor Coating

NOW RELIED ON -*WORLDWIDE*- BY OUR SKATING ATHLETES!

Traction® was conceived in our lab in **2009**, and introduced in **2014** when Traction® coated the Taipei **World Roller Skating Championships**. In **2015**, Traction® coated the **Ontario Pan Am Games**. ***For the first time since 1972***, Traction® *replaced* Roll-on® in the **2016** USARS **National Championships!**

Traction® is NOT a new label pasted over an existing or modified gym finish pail. *We've built our coating from scratch - from the ground up!*

We now offer a reliable water based skate *FLOOR SYSTEM* designed to meet every type of skate floor requirement!

On May 25, 2013 we succeeded in applying our finished water based coatings system to a combined epoxy and oil based skate floor. We knew we had secured the future of our industry (and our company) as we face the uncertainties of changing regulations impacting skate floor coatings together.

ADVANTAGES OF TRACTION® WATER BASED SKATE FLOOR COATINGS

- **NO SANDING TO RECOAT WHEN USING A BONDING AGENT.**
- **PREPARES AND APPLIES FASTER THAN ROLL-ON®.**
- **NO UNPLEASANT ODOR!**
- **MEETS AIR QUALITY STANDARDS (<250 g/L), ALL STATES, INCLUDING MOST OF CALIFORNIA.**
- **MATCHES ROLL-ON® - PERFORMANCE - APPLIES EASIER AND *FASTER!***
- **ADHERES TO MOST ENAMEL, VARNISH, EPOXY OR WATER BASED FINISHES.**
- **RECOAT IN TWO HOURS. SKATING IN 24.**
- **TRACTION® IS MADE ONLY BY OUR CHEMISTS FOR ROLL-ON®.**

COST SUMMARIES

Estimates are guides and are not final. Always consult our distributors when estimating your work.

COATING NEW OR SANDED-BACK WOOD FLOORS

ROLL-ON® Clear Solvent based SKATE FLOOR COATING

COATING MATERIALS COST 75¢ per sq. ft.

Your floor is thirsty, usually taking four (4) applications of Roll-on® Clear for a high gloss.

1st coat may be squeegeed or rolled at the same spread rate of 200 - 225 sq. ft. p/g
***2nd coat by roller only at between 275 and 350 square feet per gallon.**
3rd coat by roller only at between 350 and 400 square feet per gallon.
4th coat by roller only at between 450 and 500 square feet per gallon.

*** 2nd application applies within 12 hours. Sand 2nd application removing raised grain, then lines and markings may be applied. Climate effects recoat and dry times. Age of wood affects spread rates. Each 3rd and 4th coats should be applied one week apart.**

TRACTION® CLEAR WATER-BASED SKATE FLOOR COATING

COATING MATERIALS COST 35¢ per sq. ft.

As Roll-on®, the Traction® Floor System requires 4 coats for a uniform gloss. Traction® requires fewer gallons to complete *at half the total cost of Roll-on®* The first two coats use Traction® Sealer, the final two coats use Traction® Skate Floor Coating.

1st Sealer Coat - at 600 square feet per gallon.
***2nd Sealer Coat - at 700 square feet per gallon.**
3rd Coat is Traction® Skate Coat at 800 square feet per gallon.
4th Coat is Traction® Skate Coat at 900+ square feet per gallon.

***2nd applications applies in 2 hours. After buffing with 100-120 screen, the 2nd coat, lines and markings may be applied. The final (4th) application applies two hours after the third. Humidity and climate effect recoat and dry times. Age of wood may affect spread rates.**

RECOATING WOOD SKATE FLOORS

ROLL-ON® *OVER ROLL-ON®*

MATERIALS COST 14¢ per sq. ft. (450 Sq. Ft. per gal.)

Estimate coverage at 450 Square Feet Per Gallon.

TRACTION® *OVER ROLL-ON®!*

MATERIALS COST 30¢-55¢ per sq. ft. (500 Sq. Ft. per gal. total two applications.)

Price range permits maximum coloring of a skate floor

Yes! Traction® can coat a Water-based coating over a Solvent-based or epoxy coating!

YOUR CAN CONVERT EPOXY BASE COATINGS TO WATER BASED TRACTION®!

TRACTION® *OVER TRACTION®*

MATERIALS COST 24¢-30¢ per sq. ft. (500 Sq. Ft. per gal.)

THERE IS NO SANDING TRACTION® RECOATS. Clean and apply CRIMP COAT™ Pre-coat, bonding agent, coating at 1,000 square foot per gallon (review video). Apply 2 Traction® coatings two hours apart with weighted applicator - average 900 sq. ft. per gallon per coat.

COST SUMMARIES

Estimates are guides and are not final. Always consult our distributors when estimating your work.

COATING NEW CONCRETE or PARTICLE BOARD

ROLL-ON® Skate Floor System

COATING MATERIALS COST $1.25 - $1.35 per sq. ft.

After installation or preparation, multi-coated system includes Super Base Epoxy Base Coats, one full coat of Roll-on® Skate Floor coating. Epoxies should be handled by experienced paint contractors. Allow 7 days completion after preparation.

TRACTION® Skate Floor System

COATING MATERIALS COST $1.55 - $1.75 per sq. ft.

After installation and preparation, multi-coated system includes Super Base Epoxy Base Coats, Crimp Coat™ (review video). Within two hours, apply 1st of up to three coats of HideOut™ color coatings Apply Traction® coatings Epoxies should be handled by experienced paint contractors. Allow 7 days completion after preparation.

RECOATING Concrete or Particle Board SKATE FLOORS

BLUE ROLL-ON® MATERIALS COST 16¢ per sq. ft.

After scuffing and cleaning preparation, always with rollers, at 450 sq. ft. per gallon.

TRACTION® MATERIALS COST 30 per sq. ft.

After preparation, apply CRIMP COAT™ - bonding agent to the existing coating at 1,000 square foot per gallon (review video). Within two hours, apply 2 Traction® coatings two hours apart with weighted applicator - average 900 sq. ft. per gallon per coat.

COLOR CONVERSION

USING TRACTION® Skate Floor System

COATING MATERIALS COST 60¢ - 75¢ per sq. ft.

APPLY LOGOS ON WOOD FLOORS TOO!

After preparation, apply Crimp Coat™ bonding agent to existing coating (review video). Within two hours, apply the 1st of up to three Custom Colored HideOut™ coatings two hours apart with rollers - average 600 sq. ft. per gallon per coat. Within two hours, apply 2 Traction® coatings two hours apart with weighted applicator - average 900 sq. ft. per gallon per coat. Coating time for up to 6 coats - 14 hours!

THERE IS NO SANDING TRACTION® RECOATS. Clean and apply CRIMP COAT™ Pre-coat, bonding agent, coating at 1,000 square foot per gallon (review video). Apply 2 Traction® coatings two hours apart with weighted applicator - average 900 sq. ft. per gallon per coat.

Roll-on® Floor Systems, LLC
233 West Pipeline Road
Hurst, Texas 76053
(817) 571-2438
www.roll-on.com

Joe Nazzaro
joenazzaro@aol.com
(817) 994-1953

Skate Floor Rx

The care and feeding of your roller skate floor coatings

Skate Floor Coating • Skate Floor Preperation • Skate Floor Maintenance

Air Quality

& Compliance Considerations

"New students have many choices. Experts have few."

-- Oscar Wilde

It's not easy GOING GREEN

FLOOR AND FACILITIES MAINTENANCE AND COATING COMPLIANCE UPDATES

Roll-on® FLOOR SYSTEMS, LLC

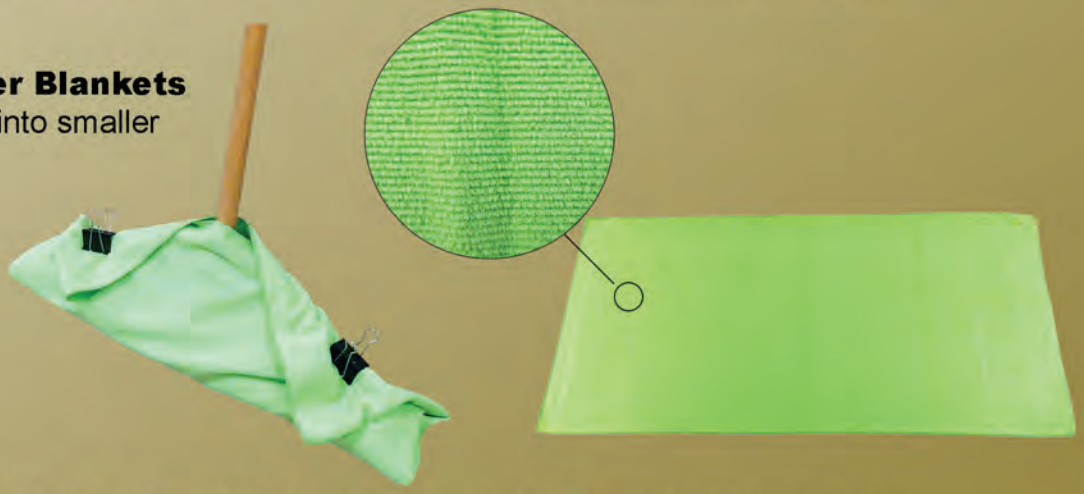
MICROFIBER FLOOR MAINTENANCE

CLEANING: Our microfiber fabrics are used for commercial cleaning and are constructed of 100% polyester. Fabrics made with microfiber are exceptionally soft. Combining high-quality microfiber with the right knitting process creates an extremely effective cleaning material, absorbing seven times its weight in water. Microfiber products absorb oils and do not scratch finishes or paintwork unless they have retained grit or hard particles from previous use.

60" Microfiber
Mop Head:
item# MFMOP60.....$15.60 each
Frame:
item# MFRAME60.....$8.80 each
Handle:
item# MHAND.....$10.50 each
60" Kit (Mop Head, Frame, & Handle):
Kits save you 10%
item# MF5.....$31.50 set

72" Microfiber
Mop Head:
item# MFMOP72.....$17.50 each
Frame:
item# MFRAME72.....$13.50 each
Handle:
item# MHAND.....$10.50 each
60" Kit (Mop Head, Frame, & Handle):
Kits save you 10%
item# MF6.....$37.50 set

27 x 59 inch Microfiber Blankets
Use them on floors, or cut into smaller squares for counter tops!
item# MT70140.
$5.75 each
$60.00 per dozen



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Texas	Rebecca's/Nazzaro Enterprises	(817) 545-2745 ext. 3
Virginia	Southeastern Skate Supply	(540) 342-7871

CONFUSING LAWS ARE NOW AFFECTING SKATE FLOOR COATINGS

AIR QUALITY LAWS resulting from accumulated legislation under the Clean Air Act of 1970 are now affecting skate floor recoating choices. Solvent as well as Water based coatings now fall under Federal regulations. Complicating the flow of information to the public regarding the Environmental Protection Agency (EPA) rules are laws passed by more than 20 separate state agencies ***exceeding*** the current EPA standards.

The permissible EPA minimum standards for all States are no longer accepted in Illinois and what is allowed in Illinois is prohibited in California. The classification of environmentally "Good or Bad" things for our environment is in VOCs. The term, "Volume of Contaminants" has been used interchangeably and accurately with a different term "Volatile Organic Compounds" – VOCs.

VOC LIMITS VARY FROM STATE TO STATE

ALL coatings and evaporating compounds are now scrutinized by Federal (EPA) as well as separate State and County air quality commissions established with authority to prohibit their manufacture or use. Owing to the type of chemicals and use, a skate floor coating is categorized as an **"Industrial Maintenance coating,"** escaping the more stringent VOC limits of "Floor Coatings." The VOC levels discussed below address **Industrial Maintenance** coatings for skating center application unless or until the category is changed or the VOC limits are changed by the various oversight authorities.

Per the EPA, the Federal minimum Industrial Maintenance coating levels may not exceed 450 grams of VOC per Liter – expressed as **450 g/l.** Most of the popular skate floor coatings are at or below this level today.

SEPARATE STATE REQUIREMENTS AND THEIR AUDITING AGENCIES

Separate state regulatory agencies have adopted tighter limits in all (Over 100 separate) categories of coatings specified by the EPA. These states have formed regional commissions in order to work collectively but without surrendering their

autonomy within the group. The largest collective is the Ozone Transportation Commission (OTC www.otcair.org) at this time. The OTC limits Industrial Maintenance coating VOCs to 350 g/l. This 350 g/l limit is being adopted by states outside the region as each state considers their commitment to the Clean Air Act. Unfortunately, some popular skate coatings exceed this 350 g/l limit.

The states and districts with OTC rules include **Connecticut, Massachusetts, Maryland, New Jersey, New York, Pennsylvania, Delaware, Maine, New Hampshire, Rhode Island, Vermont, the District of Columbia and portions of Virginia. Virginia counties include Arlington, Fairfax, Loudoun, Prince William, and Stafford, including the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park and the Fredericksburg area.**

The Lake Michigan Air Director's consortium (LADCO www.ladco.org.) has also adopted the limit of 350 g/l. LADCO is a cooperative air quality group of states comprised of **Illinois, Indiana, Wisconsin, Michigan and Ohio.**

CALIFORNIA AIR RESOUCES BOARD (CARB www.arb.ca.gov) Limit: 250 g/l. No solvent based skate floor coating can reach this limit. Few water-based coatings that claim to be suitable for skating can achieve this limit.

South Coast Air Quality Management District – SCAQMD www.aqmd.gov - This commission writes its own rules separately from CARB. *Limit: 100 g/l. At this time, no skate coating can reach this limit.* **This part of California includes Los Angeles, Riverside, San Bernardino and Orange Counties.**

Other States with separate local ***Counties*** already adopting or considering the adoption of more stringent VOC limits than the federal 450 g/L EPA limits include Kansas, New Mexico, Colorado, Texas, Missouri and Florida.

Although the new regulations affect what products distributors in these areas can buy and warehouse, coatings manufactures are working to keep abreast of these new laws and restrictions at Federal, State and down to local county levels. When considering the purchase of a coating the customer as well as the vendor must know in which region the product can be used. Contact skate distributors and vendors to determine compliance of coatings available to you.

THAT'S THE WAY
WE'VE ALWAYS DONE IT!

THE BUSINESS OF *BEING* OR *BECOMING*

The way we process, accept and then graft new information into our own preferences creates a habit. Repetition strengthens habits. The good news about a habit: "*it works*." The bad news? *"It has always worked."* Misinformation, bad habits, laziness, arrogance and complacency (Complacency: The feeling that we have sufficient information to survive, therefore no further need to learn more.) all head toward risky results when brought to skate floor maintenance, floor repairs and recoating preparations. Most habits are made worse by an accumulation of time, staffing changes, taking "logical" shortcuts or a defective memory. Once learned, we gain confidence from our knowledge and a kind of self-certainty that can inhibit the acceptance of new information. We usually implement practices trusting completely in information we received early in life or just days ago. And, if it's working, we don't go looking for new ways to fix it. That is, we rarely challenge what we know when it seems to work for us and that fact slows or prevents us from taking steps toward continuing our education or updating our information. When it comes to bad habits and wrong practices, one area where these remain on the edge of disaster are those applied to skate floor maintenance, floor repairs and floor recoating preparations.

THE EVOLUTION OF THE STRING MOP

In a previous article I mentioned the Battery Operated Automatic Scrubber. Back in the "heyday" nearly every skating center built was supplied with one. There is no better way to clean a skate floor than with an "Automatic" usually with clear water. No other skate floor cleaning method is easier, faster and more efficient. The recommended frequency of use back then was often three times a week. But some operators found it effective enough to clean the floor just twice a week; once on Fridays before a weekend of skating and a second time on Mondays, to clean up from the heavier weekend traffic. Sometimes the operator resorted to "toweling" the floor between weekend sessions or during the week-days with terry cloth towels and clear water because someone forgot to put the charger on the Automatic. New maintenance personnel found it simpler, to grab towels and a bucket on Monday to "tack" the floor and give the Automatic a full charge for Friday, cutting its use to once a week.

Later, forgetting again to charge it, the Automatic was passed over and the floor toweled on Friday instead of scrubbed. After years pass, a newly hired maintenance assistant turns to a supervisor and asks, "What is that big machine in the janitor's closet?" "It's a floor scrubber," is the reply. "Here, grab that old *string mop* over there, I'll fill the bucket; we've got to clean the skate floor." The new guy then asks, "Wouldn't that floor machine make it easier to clean the floor?" "That thing? I don't know anything about that," says the supervisor, "this is the way we've always done it."

THIS IS THE WAY WE'VE ALWAYS DONE IT.

As a result of this often heard phrase, which is a bar against new understandings, "*this is the way we've always done it,*" a series of articles follow that focus on recent discoveries and currently recommended maintenance, repair and pre-coating procedures for specific skate floors. Each article separately addresses the good care and feeding of hardwood, particle board, concrete and asphalt skating surfaces.

Common practices and new technologies are explored to determine whether or not some procedures are still worthwhile. Where did the idea of using white vinegar as a floor cleaner come from? Does it work? What completely cleans a floor when a day-care skater throws up on it? Why does a skate floor get oily? Where does dust really come from? Can a skate floor (or a snack bar counter top, for that matter) be cleaned without using water? Why does a hardwood or particle floor grow? When do they shrink? What causes edge boards to "cup" or "lip up?" What causes "humps or bulges?" How do you fix them? What can level an uneven concrete slab? Why does auto body filler work in some places on a concrete floor but not in others? Many operators reading this know the answers to these questions and have ready solutions for the problems they have confronted on their own floors throughout the years.

We will review what is known today and compare similarities or differences in current these practices - and look at how effective they really are. We will reveal recent developments and others soon to be introduced. One article may confirm what is known while another might recall something forgotten, yet another may strengthen an already solid maintenance program contributing to its growth and evolution and help to change this aspect of the operator's business from simply *being* to aggressively *becoming*.

TAKING IT TO THE MAT

GRAINGER

Mat, 4' X12' Entrance

Mat, 4' x12' Entrance Brown, Opera

Grainger Item #	6PY91
Price (ea.)	**$234.25**
Brand	NOTRAX
Mfr. Model #	137S0412BR
Ship Qty.	1
Sell Qty. (Will-Call)	1
Ship Weight (lbs.)	41.0
Usually Ships	Today
Catalog Page No.	2376

Price shown may not reflect your price. Log in or register

Additional Info

Medium-Traffic Entrance Matting System

3-zone Opera (TM) combines a complete indoor entrance matting system into a single mat. Zone 1 scrapes debris and moisture from foot traffic. Zone 2 combines nonabsorbent fibers and absorbent looped yarns to scrape and dry. Zone 3 is pure pile to absorb and wipe away remaining dirt and moisture. All yarns are color-coordinated to combine aesthetics with functionality. Nonslip vinyl backing. Beveled edges minimize tripping.

Tech Specs

There are currently no technical specifications for this item.

Notes & Restrictions

There are currently no notes or restrictions for this item.

MSDS

This item does not require a **Material Safety Data Sheet (MSDS).**

Required Accessories

There are currently no required accessories for this item.

Optional Accessories

There are currently no optional accessories for this item.

Alternate Products

Mat, 4' X 12' Entrance

Item #: 6PY90
Brand: NOTRAX
Usually Ships: Today
Price (ea): $234.25

Repair Parts

A Repair Part may be available for this item. Visit our Repair Parts Center or contact your local branch for more information.

Total-Care™ 3-Mat System

This **Total-Care™ complete mat system** gives you the recommended 15' of matting to clean shoes thoroughly. This comprehensive defense **protects your entire building** from dirt, grit, moisture and stains. Crafted from long-wearing polypropylene and olefin fibers and featuring slip-resistant vinyl backing. Our Total-Care™ Complete Mat Systems Feature plush, absorbent yarn, loop-pile wiper and scraper mats that comes in 5 colors to choose from. Purchase as a complete set or buy separately depending on your needs.

The Fore-Runner™ entrance mats are the first mat in the Total-Care™ 3-mat system, serving an entrance outdoor scraping function. This mat is crafted from long-wearing ribbon polypropylene and features slip-resistant vinyl backing that holds water and dirt.

The Cross-Over™ indoor mat is the second mat in the system, and features a coarse yarn combined with an absorbent yarn for a wiping and scraping dual function.

The Walk-A-Way™ interior mats are the last in the Total-Care™ 3-mat system and feature an excellent wiping system as well as high absorbing power.

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Home > Indoor/Outdoor Entrance Mats > Total-Care™ 3-Mat System > Complete 3-Mat System > Total-Care™ Mat System - 4'x10'

Total-Care™ 3-Mat System - 4'x10'

Price: $473.00

We show an example of MAT SYSTEMS here so you can clearly see the concept and the claims.
This does not constitute an endorsement of a specific product.

ADD LIFE
TO YOUR SKATE FLOOR COATING
– A REFRESHER

GETTING YOUR MONEY'S WORTH

Even though we understand that skate floor coatings wear over time from regular use, skate floor coatings wear out sooner from excessive dirt. The maintenance policy of a skate center that ensures the longest life of its floor coating is three-fold, **(1)** ***stopping the sources of dirt from entering*** the rink **(2)** ***removing the dirt that gets through***, and **(3)** ***identifying contaminants*** accumulating in your center.

TAKE IT TO THE MAT

There is simply no better way to reduce the input of dirt into a skating center than to direct foot traffic onto a **three-part entry matting system** just outside or just inside the front door. These are usually 12 feet long or more. By simply walking on the mats, the soles are first treated by a Scraping Mat of high stiff bristles picking at the shoe treads; then a Wiper Mat of shorter bristles removes the loosened dirt and a Cleaning Mat removes finer particles. You don't have to clean dirt that doesn't make it into your rink!

MACHINE WASHABLE

Clear water cleans a skate floor coating extremely well. *Non-residue cleaners* are effective, but difficult to find. Most skate distributors, however, stock non-residue skate floor cleaners. All coated skate floors are best cleaned with the aid of an automatic scrubber – the Zamboni of roller skating rinks. This battery operated machine spreads water onto forward rotating pads while a rear squeegee and vacuum system pulls the dirty water back into a reservoir. Those who operate an "automatic," owing to its ease of use, often clean their floors twice a week.

UNPLUGGED – NO STRINGS ATTACHED

There is no greater waste of time, and no justification for the delusion that a skate floor is being cleaned, than by using an ordinary janitor's string mop and bucket. Repeatedly pushing dirt from left to right with the barest amount of it reaching the ringer and bucket will eventually cause a dirt build-up on your floor. When an "automatic" is not available, the most effective method of cleaning a skate floor is to "*tack the floor*."

Soak a large terrycloth towel in a bucket of **clear water**. Wring out the towel of excess water. Be prepared to change the water frequently. Using a 24" or 36" push broom or squeegee, push the towel across the width of the floor, not the length. Reaching one side, turn the towel over. Push it back to the other side. Overlap a little. Soak the used towel in clean water, wring out and repeat the process. Many operators use 3 persons – one pushing the towel, one preparing a second towel for the pusher and one changing the dirty water. A 10,000 skate floor can be cleaned in an hour with three "regulars."

BUBBLE TROUBLE – PILING UP

The surest way to contaminate a skate floor, dull the coating, shorten its life and face dirt-packed rental wheels is to clean your carpet using any other method than *Hot Water Extraction.* No "wet" solutions, no "dry" cleaners – just plain old, plentiful and cheap clear water is heated and passed through a carpet extractor. Carpet cleaning additives leave residues. "Hot Water" extraction is recommended by nearly all carpet manufacturers today. It takes a day or two to dry out, but there is little lurking in the pile ready to bond with humidity and popcorn butter or ground-in Snickers sprinkles.

BLOOD, SWEAT AND TEARS

Water is the basis of cleanliness – even life itself. Water is also an activating medium and transporter for all the wrong things in a rink. If 150 skaters have remained active on your floor for 2 hours, over 45 gallons of water (sweat) was released into your *enclosed* atmosphere. Overnight, this water gathers on your walls, settling on countertops, carpeting and the skate floor, it has entered the filters and ductwork of your ventilation system. A portion of this water has crept into the revealed sides of hardwood or particle board flooring. If residues from carpets and floor cleaners exist, they have been lifted onto skate wheels during sessions. All dust and dirt from outside the center has been laid out and mixed with this humidity for the duration of the session and is being transformed into a paste and added to the sugared mixture deep in the floor crevices and carpet pile. Not a pretty picture, really.

So why *IS* my floor dull now? Why *ARE* my rental wheels picking up dirt? Where *IS* all this dirt coming from? What *CAN* I do to improve the life of the skate floor? The answers to these questions are never simple or easy, but a review of what is covered here, might lead to money or time saving answers to one or all of them.

SPLITS, CRACKS, DIVOTS AND JOINTS

CHECK UPS AND PREVENTATIVE ACTIONS

Like the character in a popular old movie that treated *ALL* his ailments with Windex® , when we discover a successful remedy for one malady, we sometimes begin think of it as a cure for other similar symptoms. Bondo® and other auto body fillers, to some Skate Floor maintenance personnel, is as Windex was to our old movie hero.

MISDIAGNOSIS - Trying to Cure Measles with the cure for Mumps.

Of all the misused and misunderstood repair or maintenance materials applied to roller skate floors, Bondo® and other epoxy auto body fillers can be relied on to *fill dimples, divots and gashes but NOT joints and cracks.* They successfully fill and level pitted areas and gouges but usually fail in separations in concrete, asphalt, particle board or even hardwood skate floors. I have spoken with many who fill the cracks and separations in their skate floors annually, sometimes quarterly. The material begins to crack, separate and break out from the filled cracks, but not the gouges. Many in charge of skate floor maintenance believe this cycle of filler application - followed by the material releasing - which is then followed by reapplying the same filler - is somehow part of the maintenance required of their type of skate floor. The use of auto body filler for crack repairs is risky since it may result in the cured product protruding or dislodging onto the skate floor over time.

TREATING THE CAUSE

Unlike gouges or divots, *cracks and joints are in constant motion.* The movements can be caused by changes in temperature and humidity as well as vibrations from nearby street traffic or a powerful bass in a sound system. Don't underestimate the dynamics of the weight of a skating crowd and the resulting stresses and tension affecting your skate floor. Auto body filler dries e*xtremely hard and brittle*. The material cannot follow the movement of a crack or joint. Upon curing, vibrations and movement causes its release from the slightest motion or contraction in the floor and it releases, coughing up fragments onto the skate surface.

More resilient epoxies stretch with the movement of the floor yet may be sanded smooth when cured and are porous enough to accept new skate floor coatings. Except for more severe cases where a concrete slab has "heaved," causing a distinct shift from level at the fissure, all skate distributors carry epoxies that offer longer term and safer repairs to cracks and separations. Auto body fillers, as difficult as they are to work with, are still an acceptable solution to patching dents, dimples and gashes. Resilient epoxies, however, should be used for patching cracks and joints.

SAY AH

Tongue-and-groove hardwood floors also experience splits or fissures. Small gaps are, as in concrete and particle board, in motion throughout a hardwood floor. Because a wood skate floor responds more often, more rapidly and with more extremes of movement than any other skate floor, small gaps between boards can be desirable, permitting subtle expansion and contraction of the entire floor. However, if a seasoned hardwood floor begins spreading with increasingly wider gaps, there may be a more serious problem than a simple patching will remedy. Good results in filling the occasional splits and gaps that do not need aggressive repair in a hardwood floor come from *a paste made of sawdust (cut up a pine board to create a handful) and ordinary wood glue*. Simply use the sawdust and glue paste as wood filler. You may mix in a small portion of your floor coating to tone the patch. The dried mixture accepts coatings easily and blends with the flooring.

FUN FACT - Perspiration Problems

A healthy, average-sized person can produce as much as 32 ounces of sweat during an hour of moderate to vigorous indoor exercise. 200 skaters will produce 100 gallons of water (sweat) in your *enclosed* atmosphere in two hours. Overnight, the moisture gathers on your walls (you've seen it), settling on countertops, carpeting and the skate floor and entered the filters and ductwork of your HVAC system.

SKATE FLOOR MEDICINE SHOW

TONICS, POTIONS, POWDERS AND PILLS

Troubles on skate floors are most often traced to accidental or sustained use of contaminating agents, chemicals or cleaners. Here is (yet another but different) look at a few old nostrums and spells still being brewed up in rinks today.

MINERAL SPIRITS – *Eye of newt, toe of frog*

When added to solvent based floor coatings, mineral spirits cause serious drying problems and later, even more serious peeling of a skate floor coating. Deregulated years ago, mineral spirits were once added as a way to get a few more square feet out of the bucket. Once a logical cost saving measure, the addition of mineral spirits will become a costly disaster if continued these days. Mineral spirits can contain everything from recycled lubricants, citrus cleaners and animal and vegetable "stuff." Peeling can result when preparing the floor by "cleaning" with mineral spirits, as was also done back-in-the-day. The solvent components of the mineral spirits may not dry out as quickly as they once did. In fact, they may leave an oily film behind, inhibiting the adhesion characteristics of solvent based coatings. Adding mineral spirits to solvent based coatings can have additional risks. The mineral spirits may not thoroughly mix and bond with the compounds in the bucket, inhibiting dry times as well as proper adhesion. Mineral spirits, if used for cleaning purposes, just as most detergents, will always leave an oily residue leading to slippery floor conditions and dirt build-up where ever the oils are tracked by the skate wheels.

DETERGENTS – *beak of a Bluebird pumiced during a pale moon*

Urethane skate wheels will move contaminants quickly around any skating center. Many operators know that the addition of a detergent to floor cleaning water is not advised. Detergents leave oily films on all floor surfaces unless they are specifically formulated as "non-residue" floor cleaners. Detergent residue causes slippery or reduced grip conditions on skate floors. Tracked onto snack-bar and restroom floors, it creates more slippery problems. Often overlooked, detergent residue from floor cleaning products are tracked and absorbed into the lobby carpet where it binds with and holds more and more dirt. When skate floors are regularly cleaned by detergents and the carpet cleaning companies arrive with their own wet or dry detergent cleaning methods, it is not unusual to hear of an outbreak of dirty wheels soon after the carpet cleaners leave.

CARPET CLEANING – *hair of a bat*

Of all the panaceas causing the patient more troubles; every known cleaning solution or dry compound used throughout the entire carpet cleaning industry is not as safe to use as a *water only extraction process*. This is statement may sound bolder than it really is. Today's extractors are effective, efficient and, when handled by qualified personnel, will leave any carpet as clean and free of dirt, and nearly as fresh as the day it left the mill. Why waist time debating dry or wet mixtures used in commercial shampooers when a simple hot water extraction does the best job? Be sure to remind the carpet cleaners that yours is a "glue-down" carpet installation and that too much water pressure will break the bond between the carpet and concrete beneath. If your skate center's carpets have been historically cleaned by shampoo systems and you have experienced the frustration of watching an accumulation of dirt on skate wheels within days or soon after shampooing, the cause may be the residue from carpet cleaning solutions that wreak havoc on your

maintenance programs – especially as they attract and hold soil in the carpet that was just cleaned.

VINEGAR *– One for a man, two for a horse*

When we researched it, we learn that white vinegar is called an "acetic acid." It derives from an ethanol bacteria. It is a "green" cleaner. We see that it has been in use as a non-residue cleaner eliminating streaks from windows washed with a detergent/water/alcohol or ammonia mix. We read testimony raving about its many cleaning applications, clean scent and even its powers to heal ailments known through the ages. Stories of using vinegar to increase a skate floor's grip have filtered into our consciousness for decades. However, there are circumstances in which vinegar *will not* clean a skate floor and should not be used until certain other maintenance procedures are brought in line.

The most dramatic instance of *"floor failure by vinegar"* goes like this: It has been two years since the floor was coated. The floor has been cleaned using a solution of 1 cup vinegar to 1 gallon of cold water, a bucket with a ringer and string mop about every ten days or so throughout the years. The skate floor has been mopped about 70 times in 2 years. About 6 months after coating the floor – the floor begins to lose some of its grip. About a year later, it is losing its luster. Within 18 months the floor is losing its grip *sooner* between mopping. It's time to recoat. The floor is prepared by mopping it twice with vinegar and water and then coated with a skate floor coating. Some spots wrinkle and take longer to dry. The rink is opened four days after coating and the floor peels up in strips during the first session.

This was an actual occurrence. Mopping with the vinegar mix merely changed the Ph of the moistened dirt film, softening the dirt, and then moved it around. Some dirt found its way onto the mop strings and into the bucket, leaving the mop operator believing the dirt was removed from the floor, even though it was actually accumulating on it. As the practice of using vinegar continued, the dirt film became more uniform on the floor, which was losing its gloss and grip became troublesome. The wheels were also redistributing the thin softened film into the lobby and on to the carpet, snack bar floor and rest rooms. Finally – the toxic habit of mopping with vinegar and the belief that it removed dirt justified its use as a preparation for a new floor coating, which was destined to fail.

Even though warm water, in and of itself, is actually an efficient cleaner of any coated skate floor, its efficiency can only be realized, just as the efficiency of vinegar can only be realized, by what we call the best known floor cleaner and all time remedy: *Elbow Grease*. Fortunately, elbow grease (on our hands and knees with a scrub brush, bucket and towels) has been replaced by labor saving devices – such as scrubbing machines and a terry cloth towel tacking technique using plain water to tidy up the streaks left behind by a scrubbing machine that loosens the dirt so that the water can carry it away at least once a week.

The important thing to remember about the presence of dirt in a skating center is that it is *plentiful and often*. Since it arrives daily, if not dealt with daily and aggressively it will surely overwhelm the patient. The best modern medicine is often frequent moderate doses of clear water, under pressure.

SKATE FLOOR R_X Part IV

PRESCRIPTION *SIDE EFFECTS*

TAKE *THREE* AND CALL ME IN THE MORNING -

Previous Rx articles emphasize the simplicity of basic maintenance concepts: (1) Catch dirt before it enters the rink using a sequential cleaning of the soles of your patrons shoes with an entry matting system. (2) Avoid cleaning carpets with detergents – wet or dry – using warm water extraction instead. (3) Implement a floor maintenance schedule focused on frequent clear water tacking as well as weekly scrubbing with a mild, non-residue surfactant (cleaner). Basic Rules of threes – Scrape, Brush, Rinse (even your dentist recommends it) when practiced habitually will eliminate most of the dirt effecting the life of your carpets, your floor coating, air filters, frequency of over-all maintenance from walls to ceilings, restrooms to snack-bar – even the cooling fans in your video games and computers. Remember, once your rink is clean, the dirt can only come from the outside, traveling on the shoes and in the clothing of your skaters.

SHADES OF GREEN –

Note the emphasis on clear water and only a casual mention of a cleaning solution above. Often surface oils must be removed with the use of a non residue "surfactant" (a solution that "lifts" the oil, allowing the water to do its thing). Cleaning with most detergents actually deposits surface oils that attract and bind dirt to a surface. This emphasis on clear water as the ideal BASIC cleaner brings us into even deeper waters of "Green Cleaning." Going Green can get a bit bumpy. We hear of some pretty peculiar ideas coming from the Shady Green Corner – from earth friendly soft drink bottles to biodegradable coffins. Still, the public and those in the maintenance game understand that at the base of the green movement is a sound premise – that many of the 85,000 identified variations of, but untested, cleaning chemicals we use are most likely unnecessary and possibly harmful. The public is so convinced of "stepping back" and taking a closer look at the past century of progress affecting the quality of their lives that in 2010 the Green Movement received $800 billion in consumer spending embracing things "natural," "organic," "eco-friendly," "certified," "healthful," or just plain "green." Food-stuffs, cosmetics, vitamins, cleaning compounds are included in this stormy sea of Green.

GREEN-BACK-DOLLARS –

Unfortunately, with consumers responding on this magnitude, false and misleading claims from producers are rampant yet cannot be corroborated by environmentalists who are often at odds on the topic of what is truly green. Independently researching the topic yields little clarity but considerable suspicion. Television infomercials recall a time of 19th and 20th Century Horse and Wagon Medicine Shows. Claims are made that range from ridiculous to comical. Setting aside the other categories of Green – from organic chicken to acupuncture – focusing only on cleaning a well-run skating center, the sales of "natural" household cleaners normally used in skating centers were $300 million in 2010. Consumer Reports lists ammonia, corrosives and phosphates as things to avoid. The EPA has a labeling program for cleaning products. Clorox Company and Martha Stewart feature their own Green brands. The result of the movement toward Green is not only a grab for market share through the age old "new and improved" advertising ploy, it has dramatically increased awareness and the curiosity of the consumer. Over-hyped and over-priced eco friendly imposters abound. 40% of

verify claims of the brands. Half of all consumers are willing to pay more for a product if convinced it is better for the environment. Why go green, as the operator of a skating center, in the midst of such confusion and flat-out dishonesty?

WHEN STUDENTS ARE READY, TEACHERS APPEAR –

Through all these dizzying contradictions emerge important pieces of information for the operator: More than half your skater's parents literally buy into the Green concept and believe that Green maintenance programs are preferable to ones that ignore the issue. As a result of the Green wave awash in the media, parents with school age children are now hearing more about the Green emphasis in their schools as well. They are receiving bulletins and references to resources published by school districts claiming newly implemented "Healthy" school maintenance procedures in class rooms, cafeterias, gymnasiums and locker rooms. Schools are now responding to parental concerns about communicable disease controls on campus and are taking more action to protect students from disease when once their position regarding student body health was that problems of this sort were best dealt with at home. "If he's sick, keep Johnny away from school." Disease *prevention* is now part of facilities maintenance. The trusted deodorizer is now seen as an addition to indoor pollution, its elimination leads to correcting with the sources of noxious odors instead resorting to the old "cover-up." Schools are now issuing bulletins identifying and eliminating chemical cleaners that are hazardous to staff and students, irritants that are challenged by state health laws and chemicals that are dispensed in unsafe concentrations. What percentage, then, of the parents who drop skaters at the front doors of skating centers would appreciate knowing that their skating center has implemented the same Green cleaning procedures of their own local schools? The answer is built into the question.

SIDE EFFECTS – PROMOTE YOUR CLEANING PROGRAM!

It is safe to say that implementing green maintenance procedures in a skating center is not only effective in controlling and offering a healthy environment to your skating public, but the fact that doing so is also worth promoting within your community. People want to know. Skater's parents want to know and will respond favorably to your rights to brag about your concerns and the actions you take intended to ensure their child's health, safety and well-being while in your facility. Consider adopting Green methods and promoting that fact on all your literature, hand-outs, website – even passes and business cards. Be careful about the claims made, of course. Although a skating center is eligible to qualify as a Green Building by State or Federal agencies, it takes a year or two, audits, inspections and some paper work to accomplish it. Green with Envy? The side effects of a maintenance program with a Green basis then are health, parental approval and profits.

Please find more detailed information about Green Cleaning Online:
BASICS: www.epa.gov/epp/pubs/cleaning.htm
HEALTH: www.webmd.com/health-ehome-9/green-cleaning
SCHOOL INFORMATION: www.greencleanschools.org

TRACTION™

NON-RESIDUE CLEANER

FORMULATED EXCLUSIVELY FOR ROLL-ON® AND TRACTION® SKATE FLOOR COATINGS. Non-residue cleaners leaves no detergent film to attract dirt and weaken grip. Traction Non-residue cleaner actually "Tightens" skate floors - improving their overall grip. Highly concentrated and strongly recommended for regular maintenance - especially weekly with automatic scrubbing machines or, if automatic scrubber is not available, a Traction solution is recommended frequently using the towel-tacking method found in our coating preparation and application publications.

ABOUT AUTOMATIC SCRUBBERS

PLEASE GET ONE AS SOON AS YOU CAN! No, it does not harm the finish when using soft brushes or white scrub pads and warm water. The best size is a machine with twin 16" scrubbers - Cleans 10,000 feet in an hour. Reliable brands are Clarke, Hako, Tennant, and Advance. Only consider machines with Stainless Steel tanks and reservoirs. NEVER use detergents or vinegar in the machine. Use only water or "non-residue" cleaners designed to scrub floors without leaving a detergent residue or oils behind - available from some skate industry distributors. With soft brushes or white pads we encourage weekly scrubbing before each weekend or when the floor will receive the most use - this will absolutely extend the life of the average coating.

Additional money and time saving benefits? The automatic can be used to prepare the floor for the next water or solvent based skate floor coating, using the drivers for screen-backed abrasive pads on heavy pressure without water saves hours of time for oil based coatings - and even more labor when re-coating water based skate floor coatings - some of which do not require sanding or abrading between coats when following their alternative preparation recommendations

To this end, soft brushes or white pads are the least invasive and the most effective when used with clean warm water. But for the best removal of the oils, a non-residue cleaner will take them all out and dramatically improve the grip of the floor - even a weekly cleaning will noticeably improve it from week to week. Maintenance is a process, not an event. (But you know this) So first - the surface oils and contaminants common to the site (from cokes or anything else tracked out from carpets, to oily palms of hands catching their falls (yes, "palm oil") are to be frequently removed when possible. Address the black marks monthly, Some folks walk their floors with tennis balls on sticks and claim great results removing a lion's share of the marks. Zylene or Xylol works best on the burned in tar that importers use to cheapen their production of black toe stops and rear brakes. Always hang a solvent soaked rag outdoors to dry thoroughly.

SKATE FLOOR R_X Part V

THIS SKATING SEASON'S 10 RESOLUTIONS FOR A HEALTHY AND HAPPY SKATE FLOOR

Every year we heard it: "Where is your heavy jacket?" "Cover your mouth when you sneeze!" "Don't track that mud into my kitchen!" It was the loving and nurturing language of Fall and Winter spoken by mothers everywhere.

As we heard the same repeated cautions about health and hygiene and preventative maintenance in the changing seasons year after year growing up, true or not, they are a part of our behavior and habits today. In the same spirit of strengthening good habits, its time for a review of what we know about keeping our floors healthy and our skaters happy about it.

As you know, the presence of dirt in a skating center is *plentiful and often*. Arriving daily, it must be dealt with daily and with discipline, or it will overwhelm the rink.

1 – STOP IT AT THE DOOR

Eliminate dirt with a three-part ENTRY MATTING SYSTEM placed outside or just inside the front door. Scraping mats pick at the shoe treads; a Wiper Mat removes loosened dirt and a Cleaning Mat removes finer particles. You never have to clean what is prevented from entering the rink.

2 –DAILY DUSTING

As much fun as a skater has when pushing a 6 foot wide dust mop around the floor at top speed, dust mops pushed at high speeds toss the dust up and over the mop. Go easy and daily. Never spray or treat the dust mop – it's a sure way to end up with a slippery floor.

3 –STRING THEORIES AND THE SCIENCE OF CLEAN

Using an ordinary janitor's string mop on a skate floor pushes dirt from left to right. The barest amount of dirt reaches the ringer and bucket. The practice will eventually lead to a dirt build-up on your floor and slippery skating. STOP IT!

4 –THROW IN THE TOWEL

A moistened terrycloth towel cleaning procedure should be used at least twice a week. A 10,000 skate floor can be cleaned in an hour with three "regulars." See the simple instructions posted at popular skate floor coating web sites.

5 – AVOID TROUBLES THAT PILE UP

The surest way to contaminate, dull, and shorten the life of a skate floor and pack dirt onto rental wheels is to clean carpets with any other than a *Hot Clear Water Extraction Method.*

6 –BURP THIS BABY

Moisture is an activating medium and can be unhealthy in a rink. 200 persons skating for 2 hours, can produce 100 gallons of sweat released into your *enclosed* atmosphere. Settling on countertops, in carpeting and the skate floor, it has also enters the filters and ductwork of your ventilation system. On cold days or nights continue ventilating the rink for several hours after closing to avoid unhealthy mold and mildew accumulations caused by condensation forming after skating sessions.

7 –FACE WINDS OF CHANGE

Regulations within the Clean Air Act of 1970 are now affecting solvent as well as water based coatings under separate state authorities. See skate floor coating websites or contact them directly to determine the limits in your state or county.

8 – REMOVE MARKS AND SPOTS

Black marks on floors are "burned in" tar – cheap bulk-extenders found in rear brake and toe stops. Removal may require the use of flammable substances such as Zylene or Acetone. Test such chemicals to determine their effect on floor coatings, be careful disposing of cleaning clothes and storing all chemicals. Be wary of paint thinners and mineral spirits leaving oily residues. Test rubbing a tennis ball on the mark - you may be surprised by the results.

9 –ADD A FLOOR STETHASCOPE TO THE MEDICAL KIT

A moisture meter is to your skate floor what a stethoscope is to your heart. When moisture is known or suspected, a moisture meter calibrated for wood or concrete can solve moisture problems as they are discovered. GET ONE!

10 –AVOID KNOWING EVERYTHING

It's the surest way to miss out on new information. When we know that we don't know, we are called, "students." When we don't know that we don't know something, we're called, "double-dumb." Complacency is often the result of certainty.

Question where the information used for actions taken in habitual – year by year – season by season – maintenance procedures has come from. There might be a different way. There might be changes in regulations or discoveries published to improve results safely and economically.

COATING SYMPTOMS - EFFECTS AND CAUSES

We can control our mixtures in the factory and issue certificates of compliance with each batch
Unfortunately, we cannot control the environment where it is prepared and our material applied.

PROBLEM OBSERVED	POSSIBLE CAUSES
ALLIGATOR SKIN	Additional coating applied too soon
ALLIGATOR SKIN	Excessive coating upon application
ALLIGATOR SKIN	Material was allowed to puddle
ALLIGATOR SKIN	Too much air flow directly on to or across the surface
BLACK STREAKS - over time	Moisture has been present - possibly mold
BUBBLING	Aggressively shaking before application
BUBBLING	High temperatures during application
BUBBLING	Mixing the product with a high-speed mixer before application
BUBBLING	Repeatedly passing over the product with rollers
DISCOLORING STREAKS	Contaminated surface; Likely oil, grease, soap film or silicone
DISCOLORING STREAKS	Improper floor preparation
DISCOLORING STREAKS	Material Not Boxed or Boxes improperly
FINE DIRT PARTICLES	Distributed from ventilation system
FINE DIRT PARTICLES	Enter from open doors or windows
FINE DIRT PARTICLES	Lint from applicator
FISH EYES	Contaminated surface; Likely oil, grease, soap film or silicone
FISH EYES	Room or Surface Temperature too high
FISH EYES	Too much air flow across surface
HAZY FINISH	Presents of moisture - possible high humidity
PEELING - immediate	Improper floor preparation
PEELING - immediate	Screens or sand paper not changed frequently during preparation
PEELING - immediate	Surface not properly sanded and cleaned
PEELING - over time	Contamination causing gradual delaminating
PEELING - over time	Contamination prior to coating
PEELING - over time	Improper floor preparation
PEELING - over time	Introduction of sub-surface moisture
PUDDLING	See wrinkling or alligator skin or Streaking
SLOW DRYING	High humidity
SLOW DRYING	Lack of ventilation after application
SLOW DRYING	Low Surface temperatures
STREAKING	High surface or room temperature
STREAKING	Product applied too thick
STREAKING	Product applied too thin
STREAKING	See also Puddling
STREAKING	Vents or fans discharging air directly onto the surface
SWIRL MARKS BELOW	Coating too thin
SWIRL MARKS BELOW	Scuffing pads too heavy
WRINKLING	Excessive coating upon application
WRINKLING	Material was allowed to puddle
WRINKLING	Puddle in a low spot on the floor surface
WRINKLING	Recoating too soon
WRINKLING	Too much air flow directly on to or across the surface

PROJECT COST OF MATERIALS ESTIMATOR

Use this project chart estimator in conjunction with the descriptions of the products found in this brochure.

Always confirm your estimates with your Roll-on® Distributor.

Calculate Total Square Footage: _____ Square Feet

PRODUCT	sq. foot covered Per Gallon	GALLONS	X	COST	=	EXTENSION
SUPER BASE™ Round to the nearest 10 gal	*Call for Directions*	CALL	x		=	$ -
CRIMP COAT™ Round to the nearest gallon	1,500		x		=	$ -
HIDEOUT™ BASE WHITE Coat 1 Round to the nearest 5 gal	600		x		=	$ -
HIDEOUT™ BASE WHITE Coat 2 Round to the nearest 5 gal	700		x		=	$ -
HIDEOUT™ BASE WHITE Coat 3 Round to the nearest 5 gal	800		x		=	$ -
TRACTION® SEALER Coat 1 Round to the nearest 5 gal	400		x		=	$ -
TRACTION® SEALER Coat 2 Round to the nearest 5 gal	600		x		=	$ -
TRACTION® with Catalyst Coat 1 Round to the nearest 5 gal	800		x		=	$ -
TRACTION® with Catalyst Coat 2 Round to the nearest 5 gal	900		x		=	$ -
ROLL-ON® BLUE One Coat Only Round to the nearest 5 gal	450		x		=	$ -
ROLL-ON® CLEAR One Coat Only Round to the nearest 5 gal	450		x		=	$ -
FIREFLY™ - Roll-on 1 UNIT PER 5 GALLONS		(units)	x		=	$ -
FIREFLY™ - Traction 1 UNIT PER 5 GALLONS		(units)	x		=	$ -
Line and Markings Paint Use Roll-on® Line Paint or HideOut™	Unit = 1 quart	(units)	x		=	$ -
				TOTAL PROJECT MATERIALS COSTS:		$ -

COST PER SQ. FOOT: _____

To determine project cost per square fool, Divide Total Costs by Total Square Footage.
Shipping Costs to be estimatedby your authorized Roll-on® Distributor.

Prices subject to change without notice