Court & Track
A Construction Newsletter, Published by the Tennis & Track Division of Munson Inc.
April, '06

Water Management Key to Protecting Track Surfaces and Extending Track Service Life

Although some excess water in or on an all-weather track is normal, care must be taken in track design, construction, and maintenance to protect the track surface and extend the useful track service life.

Water often collects in and on tracks due to a loss of planarity and/or slope. Ultimately, excess water can lead to delamination or degradation of the track surface.

The loss of planarity and/or slope can be caused from unsuitable subsoil material, inadequate drainage design, improper slope or grade, inadequate subgrade compaction, improper sprinkler placement, or paving errors.

Some porous surfaces may feel squishy where there is observable standing water. This can be caused by excess moisture below the asphalt strata being pulled through the asphalt in the form of vapor by the sun. Another common cause is inadequate drainage. Grass or dirt can build up on the downside edge of the cross-slope of the track, creating a water dam. This water can only eventually migrate into that buildup, where it is wicked back underneath the asphalt base. These instances can damage the surface and cause the asphalt to strip or lose its viability.

If the venue surface drainage system is inadequate to handle the amount of water present, the remaining moisture is absorbed into the ground and wicked underneath the asphalt base. Sometimes, there is so much football field irrigation, as well as water run off from parking lots and other paved surfaces, that the present system is overwhelmed.

Tracks are not designed to handle constant watering, and cannot move the kind of deep, regular watering resulting from irrigation systems. The porous track surface can become saturated, as can the asphalt base. Proper system design can minimize direct irrigation impact on the track surface.

Proper water management is key to successful all-weather tracks in the Great Lakes Region.

Track construction paving errors, due to lack of knowledge and inexperience, are common. Paving and track surfacing involves skill and judgment. It is critical to choose a competent, experienced asphalt paver and track surface installer.

It is certainly more costly to wait until the track surface has been installed to identify water management and drainage concerns. Prior to a surfacing or re-surfacing, your site should be checked against conditions unsuitable for the long-term success of an all-weather track system.

For answers to your track construction or maintenance questions or to request a site visit, please contact Fred Kolkmann at Munson Inc., 800.236.0340. Questions can also be directed to Munson's track partner, Fisher Tracks. Call Bruce Miller or Jordan Fisher at 800.432.3191.

Munson Inc. Wins ASBA Tennis Facility Award

The Tennis & Track Division of Munson Inc. has won an Outstanding Outdoor Tennis Facility Award from the American Sports Builders Association for construction of a multi-use, athletic court facility for the Chippewa Retreat Lodge and Resort in northwest Vilas County. Paving paradise to provide outdoor venues for tennis, basketball, and volleyball was not a project option. Instead of sacrificing timber stands and resort ambience, Munson helped convert a portion of an existing gravel parking lot into the open-air, multi-sport athletic venue. Lowered site elevations and innovative fencing and landscaping solutions allowed Munson to effectively minimize the environmental and visual impacts of introducing the facility onto the pristine landing abutting Wisconsin's Manitowish Waters Chain.

Munson Inc. is a proud and active member of the following associations:

MEMBER AMERICAN SPORTS BUILDERS ASSOCIATION

MEMBER WAPA WISCONSIN ASPHALT PAVEMENT ASSOCIATION

member aci american concrete institute

MEMBER AFA AMERICAN FENCE ASSOCIATION

CASE HISTORY: TENNIS COURT COLORS HAVE EVOLVED BEAUTIFULLY FROM PRACTICAL BEGINNING

Tennis courts (hard courts) started out all green, because Lawn Tennis was played on grass (green). The lines used on grass were applied using lime or chalk (white). This color combination continued until someone had the great idea to use a contrasting color for the out of bounds area, and they chose red. For years courts were colored green and red, or all green. But as society became increasingly more-easily bored, the two-tone green combination came to the fore and several green shades became popular court surface colors.

Many colors became available, but in recent years, a darker green (in-bounds) and a lighter green (out-bounds) became the most popular color combination. The biggest complaint TV executives received about network broadcasts of tennis matches was the difficulty of seeing the ball movement during play.

When ATP, the governing body of men's professional tennis, started their Master Series, they came to California Products Plexipave to match the colors of the ATP Logo. The colors, purple and light green, became the signature court colors for the ATP Master Series.

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MUNSON INC.
Fence • Asphalt • Concrete

ATP players liked the contrast with the ball color, enabling them to track the ball better, and the television audience also loved it.

The colors were vibrant, and the ball was "like a beacon" on the purple background.

This bold Step by the Master Series made the striking statement that a variety of colors could be used for court coloring and be well-accepted by the tennis world.

Marquette University (blue w/gold lines), Northwestern University (purple w/light green), the University of Washington (purple), and UCLA (Bruin Blue) are a few of the many collegiate tennis programs selecting school colors for court coloring.

The color version of this picture shows Munson Inc. was able to provide a custom perfect match for Marquette University's school colors, blue & gold.

The USTA, steeped in tradition after using all green courts for years at the US Open, made a bold move last year with their US Open Blue (in-bounds) and Dark Green (out-bounds) courts. **NOTE**: The US Open colors are trademarked, but available for your court(s) through Munson Inc. Call Fred Kolkmann at **1.800.236.0340.**

What do these radical color combinations do for the player? In some cases, the color combinations help players to better track or follow the ball during play. Older players particularly see (pun intended) and appreciate this benefit.

Outdoors, depending on the colors selected (light or dark), the surface temperature of a court can be affected by as much as 5 to 10 degrees. Ball speed and safe footing are determined by court texture, and thus are not affected by court color.

While there is no quantifiable data showing court colors provide a home-court advantage, selecting school colors for court coloring does create a good will and a positive feeling and attitude for the home athlete, match spectators, and student body and alumnus.

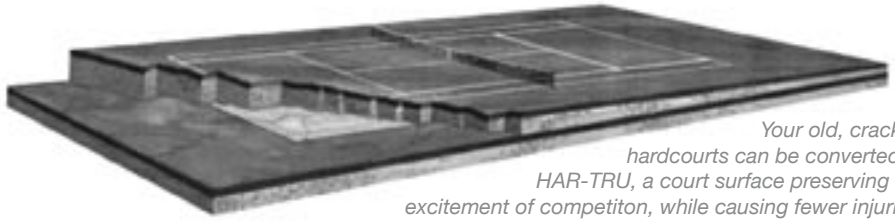
The effect of court coloring is far more psychological than physiological. Choosing tennis and track court colors is very much like choosing vehicle colors during an automobile purchase. The color of a vehicle will not make it last longer, or provide for higher performance or better gas mileage. Car buyers chose the colors they do because they like them and it makes them feel good while driving around town or when looking at their parked vehicle.

Thanks to advances in coloring systems, tennis court owners now have a rich pallet of court color choices.

HAR-TRU Hard Court Coversion:

Restoration solution takes the pain out of the game

If your existing hard court needs repair or renovation, two recent news items should direct you to consider converting the court to a HAR-TRU clay court.



Your old, cracked hardcourts can be converted to HAR-TRU, a court surface preserving the excitement of competiton, while causing fewer injuries.

News Item One: In the time it takes you to read this sentence (seven seconds), another Baby Boomer will turn 50. Many of these aging Boomers, who helped fuel the golden age of amateur tennis in the 1970s, continue to play. Surveys show more would, and well into their retirement, if court injuries, especially to backs, legs, and ankles, could be reduced.

News Item Two: Former world number one Pete Sampras has agreed to play competitive tennis again and will compete this Spring in the World Team Tennis Pro League (WTT), more than three years after retiring. But Sampras, who is now 34, has ruled out all talk of a comeback at the top level, preferring instead to relax and have fun in WTT's slower, more controlled game.

While repair or renovation of your hard court remains a viable option, there are also many good reasons to explore conversion of your old hard court to a HAR-TRU clay court. Three reasons to convert include:

• MINIMIZE COURT INJURIES - University studies prove HAR-TRU clay courts are much gentler on players than hard courts. HAR-TRU's granular surface acts like a shock-absorbing cushion, allowing players to slide injury-free into their returns.

• CREATE A CONSISTENT, CONTROLLED GAME - On a HAR-TRU court, the ball bounces consistently and slower than on other surfaces, resulting in longer rallies, a greater reliance on stroke variety, and a more controlled game. Stamina, strategy, and mental toughness come to the fore on HAR-TRU courts. This is a plus for aging Baby Boomers, but can help players at all ages and levels of ability to hone their games.

• REALIZE LONG-TERM VALUE FROM YOUR COURT INVESTMENT - With proper maintenance, a HAR-TRU court can last a lifetime.

Court conversion need not be expensive and time consuming, as advances in technology and construction techniques help court owners save time and money.

Conversions from hard courts to clay courts can be accomplished in one of three ways.

As seen in the graphic above, the most popular option leaves your old hard court in place and simply caps it with a compactable fill material, a stone screenings layer, and a new 1-inch granular HAR-TRU surface layer. Option two requires the use an asphalt pulverizer to "shred" the asphalt in place and mix it with the existing subbase. The shredded material is then re-graded and capped with screenings and HAR-TRU surface. Option three involves complete removal of the hard court, re-grading of the base stone, and a cap of screenings and HAR-TRU.

The HAR-TRU surface has become the standard in the clay court industry. HAR-TRU is made from Pre-Cambrian metabasalt found in the Blue Ridge Mountains of Virginia. The rock is crushed, screened, and mixed in precise proportions to produce a stable, consistent surface. Production quality has made HAR-TRU the top-selling surface of its type in the United States.

HAR-TRU can be used for both new court construction and for top dressing. A layer of the finely-crushed, green rock particles is installed over a porous base of crushed-stone aggregate to produce the finished surface.

More than 40,000 HAR-TRU courts are being enjoyed around the world. It is estimated more than a third of the "new" clay courts built in the United States since 2000 were actually conversions of hard courts to HAR-TRU clay courts.

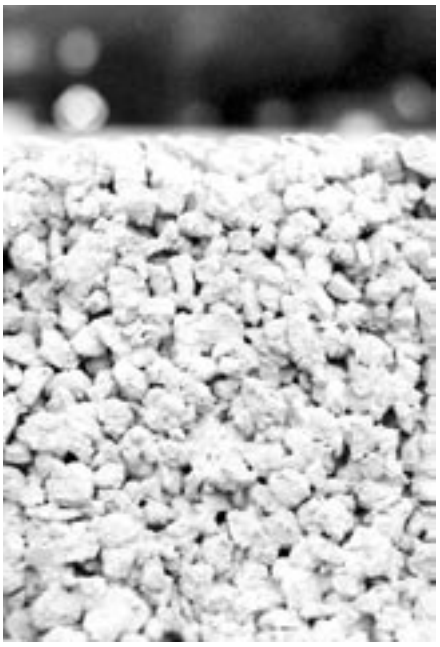
Perhaps your court should be added to these statistics.

Court and site evaluation are necessary to determine which conversion option is right for your situation. To learn more about converting your hard court to clay, contact Fred Kolkmann at Munson Inc.: **1.800.236.0340** | fred@munsoninc.com.

Tennis & Track Division Congratulates Concrete Division for its Award-Winning Work

Congratulations to the Concrte Division of Munson Inc., part of Munson-Armstrong Paving, which recently won a Concrete Design Award for the Pervious Concrete Parking Lot it installed at the Milwaukee School of Engineering (MSOE). The award, part of an annual recognition program cosponsored by the Wisconsin Ready Mixed Concrete Association and the Wisconsin Chapter of ACI International, honors outstanding concrete projects in Wisconsin and Michigan's Upper Peninsula.

Pervious Concrete pavements offer the inherent durability and low life-cycle costs of typical concrete pavements while retaining storm water runoff and replenishing local watershed systems. A special type of concrete pavement that allows rain and snowmelt to pass through it, pervious concrete looks much like a large rice crispy treat. There are instances where pervious pavements (either concrete or asphalt) can be used (or may be required by the governing municipalities) for storm water management under sport surfaces. Pervious concrete, which can be colored to provide a custom look, may also make good sense as part of the overall site water management system for your court or track project. For more information on pervious pavements, contact Fred Kolkmann: **1.800.236.0340**.



Cross-section view of the award-winning pervious concrete parking lot at MSOE.

COURTING EXCELLENCE & TRACKING SUCCESS: 2005 Court & Track Projects

"2005 was an award-winning year for our Tennis & Track Division. Projects were varied and challenging, and our construction team invested much thought and hard work on behalf of our customers.

We look forward to new project challenges in 2006."

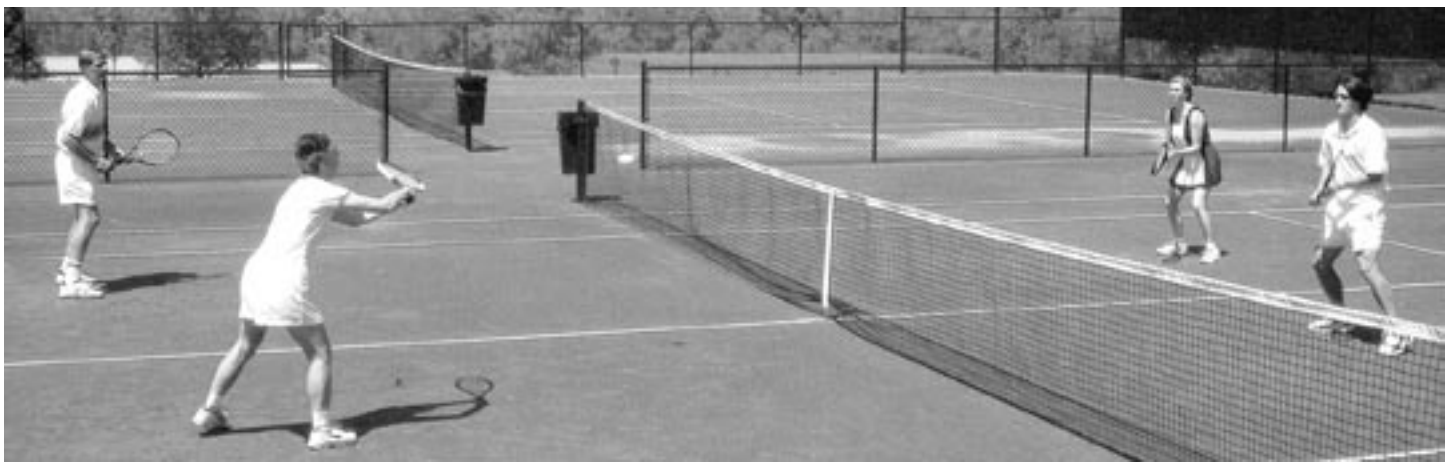
Fred Kolkmann,
Tennis & Track
Division Manager

Homeowner Associations …
- River's Edge, Brown Deer (asphalt tennis courts)
- Heather Ridge, Gurnee, IL (asphalt tennis courts)
- Quade Park, Saukville (asphalt tennis courts)
- The Meadows, Waukesha (asphalt tennis courts)

Private Clubs …
- Eagle River Tennis Club (asphalt tennis courts)
- Kenosha Athletic Center (indoor asphalt tennis courts)
- Kohler Sports Core (asphalt tennis courts)
- Merrill Hills Country Club (asphalt tennis courts)
- North Shore Country Club (asphalt & clay tennis courts)

Schools …
- Grafton Schools (asphalt tennis courts)
- University School (track)

Private Residences …
- Chicago, IL (asphalt tennis court)
- Genessee (pt-concrete tennis court)
- Manitowoc (asphalt tennis court)
- Mequon (shuffleboard court)
- Middleton (asphalt tennis court)
- Racine (asphalt tennis court)
- River Hills (asphalt tennis court)
- River Hills (asphalt tennis court)
- River Hills (asphalt tennis court)
- Twin Lakes (asphalt tennis court)
- Waukesha (asphalt tennis court)
- West Bend (asphalt tennis court)
- West Bend (asphalt tennis court)



Q and A Asphalt Emulsion versus Acrylic Resurfacer: Which Should I Use?

At the risk of sounding harsh, the only benefit of sand-filled asphalt emulsion (SFA) over acrylic resurfacer (AR) is cost. But the initial cost savings for SFA must be quickly reinvested in costly (and otherwise unnecessary) early surface repair.

Until the later decades of the last century, SFA was the only practical material available. Now it is antiquated and has no place in sports surfaces applications, though some sport surface contractors still promote and use asphalt emulsion.

Demand for performance and extended surface service life far outweighs the cost difference between SFA and AR. Today's technically-advanced ARs, like Court Patch Binder from California Products, clearly outperform and outlast SFA and are certainly more environmentally friendly. The reasons contractors, suppliers, architects, and owners specify AR over SFA are many. Major reasons include:

SFA – Asphalt based products are quickly degraded by UV light thus weakening the elastic and tensile properties.
AR – Is formulated with Acrylic resins known for their UV stability.

SFA – Is formulated with Clay fillers having affinity for moisture causing expansion and weakening the coating.
AR – There are no clay fillers in the formulation that can absorb moisture.

SFA – Substrate moisture is often trapped and the clay swells, because it does not breathe, creating significant blistering.
AR – Acrylic-based products have some vapor permeability, allowing the surface to breathe.

SFA – Is very thermoplastic, it softens in higher temperatures leading to tears in the acrylic finish on hot days. Cold temperatures cause the SFA to become brittle.
AR – Through a broad range of hot and cold temperatures, AR is very stable.

SFA – Is not recommended for concrete surfaces. The American Sports Builders Association does not recommend SFA unless noted by the Acrylic color manufacturer.
AR – Concrete or asphalt is a suitable substrate. AR is the standard for the acrylic surfacing industry.

SFA – Is the weakest layer in a multi-layered coating system. It will become the point of failure. Once there is a problem, expensive corrective measures such as stripping all materials from the substrate.
AR – Is similar in strength to the rest of the acrylic coating system and extends the life expectancy of the coating system.

SFA – Most manufacturers of SFA require that it be rolled with a mechanical steel wheeled roller after application to achieve density.
AR – Does not require rolling or other steps after application.

SFA – There is a cure time prior to the application of other coatings, as much as three days.
AR – Recoating time is one-to-two hours after the AR has been applied.

SFA – Required petroleum solvents for clean-up tools and workers can lead to potential dangers on the job site.
AR – Since it is water based, AR is easily cleaned-up with water and a little soap, if desired.

Have questions about court or track construction or maintenance? Contact Munson Inc.: phone: (800) 236.0340 • fax: (414) 351.0879 • email: fred@munsoninc.com

Munson Inc. Schedules Multiple Court & Track Seminars:

No fee, half-day programs, and multiple locations help meet attendees needs

The Tennis and Track Division of Munson Inc. is proud to announce it will be holding free, half-day informational seminars this April in multiple venues across Wisconsin to help people whose responsibilities include the care and maintenance of existing courts and tracks -- or the design, selection, or construction of new courts and tracks -- to better understand the issues and dynamics behind quality court and track construction and maintenance.

Architects, engineers, home builders, municipal and county officials, athletic directors, coaches and teaching pros, parks department and private club personnel, university and high school groundskeepers, and other tennis-court and track administrators and maintenance personnel are especially encouraged to attend. Please register at least five working days prior to the seminar. All seminars begin at 8:30 a.m. and end at 1:00 p.m.

The tennis court seminar, ***Existing Court Maintenance,*** will be held April 11 at the Sports Core in Kohler, and on April 13 at the Comfort Inn & Suites, 4822 E. Washington Avenue, in Madison. Maintenance and reconstruction of asphalt courts, including permanent repair systems, will be discussed.

A ***Running Track Construction and Maintenance*** seminar will be held on April 18 at the Johnson Creek Comfort Inn & Suites. This venue will also be the location for the April 24 Munson seminar, ***Clay Court Construction and Maintenance.***

Watch your mail for more information, or contact Fred Kolkmann at **800.236.0340.**

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