

LONSEAL

TECHNICAL MANUAL FOR SPORT FLOORING PRODUCTS

As changes can occur, in installation parameters and application,
please visit our website for the most current technical information.

www.lonseal.com

Lonseal Sport Flooring Products

Guidelines for Installation, Line Striping, and Maintenance

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FOR ORDERS

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888-LONSEAL (888.566.7325).

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About This Manual

Purpose

This guide provides information regarding the installation, game line striping, finish options, and maintenance for Lonseal sheet vinyl flooring used in sports and multi-purpose settings. This guide contains information about Lonseal Inc.'s line of sport flooring products that is not otherwise covered in the *Lonseal Technical Manual for Interior Flooring Products*, available at www.lonseal.com.

Audience

Information in this manual is intended for use by flooring contractors and flooring specifiers.

About Products and Services Included in This Guide

This guide outlines all Lonseal-approved installation methods.

This guide also contains information pertaining to products and services not provided by Lonseal. While Lonseal has made every effort to provide complete and accurate information for these products and services, we strongly recommend that specifiers or installer/applicators use the contact numbers provided in this guide to obtain detailed information about any products/services not provided by Lonseal.

Notices

Lonseal, Inc. does not warrant or supply paint, coating, finish products or labor. For application of game lines or graphics, the end user must select and obtain the products that are best suited to their needs and inquire about experienced applicators from their local distributors.

All warranties for materials or services described within this guide are the responsibility of the respective manufacturers or contracted providers. Proper application of any game lines or graphics is the responsibility of the applying contractor. Warranties for suitability of use of any paint, coating or finish product lies with the paint, coating or finish manufacturer, not Lonseal, Inc.

Use of materials other than those specified by Lonseal require prior acknowledgement through Lonseal's Technical Department. Specifiers are responsible for selecting the correct adhesives and finish products that are suitable for a given installation environment.

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Product Information

Test for Slab Moisture Emission and Alkalinity

Lonseal strongly recommends to the General Contractor/Architect/Building Owner, that moisture and alkalinity testing be performed and documented by an accredited engineering firm/laboratory/person(s) prior to the installation date so that corrective measures can be performed. The flooring contractor is to ensure testing has been completed prior to initiating installation of Lonseal sheet vinyl flooring.

Regardless of age or elevation or floor location, testing for moisture vapor emissions shall conform to the following three required standard tests:

ASTM F1869-10 - MVER shall not exceed 5.0 lbs/1000 ft²/24h.

ASTM F2170-09 - Maximum relative humidity shall not exceed 75%.

ASTM F710-08 - Alkalinity shall not exceed 9.

Urethane Finish Products and Installation Tools

Lonseal's factory-applied glossy urethane finish enhances appearance and lowers maintenance by eliminating the need for any form of dressing. Refer to **Section 6 – Maintenance on Glossy Urethane Finished Surfaces** for maintenance instructions.

A urethane nozzle (Lonseal part **#65**) is required to heat weld seams on all urethane products.

#65 Urethane Nozzle

Prevents the factory-applied urethane from blistering as well as reduces the typical glaze on the outskirts of the seam. It is slower than the standard speed nozzle and designed specifically for flooring materials with a urethane finish.

Use the urethane nozzle and make practice runs to develop a feel for the speed and heat setting that will work best. To avoid scratching the urethane surface, be sure that the trim plate and knife are smooth.

Glazing urethane finished surfaces:

To glaze the thread, after trimming the welding thread, remove the urethane nozzle from the heat gun. With the gun set to 4 or less, aim it just above the trimmed thread and move slowly enough to melt the top of the thread, but fast enough not to blister the urethane. Unglazed thread can make the seams visibly dirty.

Installer Responsibility

For best results, trained installation professionals should follow the written directions provided in our installation manual and/or our adhesive containers.

Installation of any Lonseal flooring and related products constitutes acceptance of all material and site-related conditions by the installation contractor.

Although Lonseal products are closely inspected prior to shipping, if a defect becomes evident *that reasonably can't be worked around* during the course of installation, **STOP the installation** and notify the supplier or sales representative immediately.

Handling and Storage

Proper storage is necessary to ensure the best performance and appearance from Lonseal sheet vinyl flooring and related installation products. The storage area must be clean, dry and temperature controlled.

1. Remove rolls from the shipping pallet immediately and store standing on end. Rolls stored on the pallet or lying horizontally may develop flat spots that can take considerable time to relax and lay flat.
2. On the job site, wrap opened rolls tightly face out to avoid material distortion then store standing on end.
3. Maintain storage temperature range 65° - 85° F (18° - 29° C).
4. It is the responsibility of the installation contractor must check to make sure all materials and adhesives are correct for the job, and ensure that the pattern, color, style and lot numbers match those called for in the finish schedule as specified for that project.
5. DO NOT use marker, paint or any other surface contaminant on the substrate or backing of the material as it will bleed to the surface of the product and permanently damage the flooring. For all markings use a lead pencil.

3 Substrate Conditions & Preparation

General

The substrate must be sound, smooth, free of protrusions, clean, dry and free from grease, dirt, dust, wax, paint, efflorescence or curing compounds. It shall not be subject to hydrostatic pressure.

Bond Test

Test for primer (if used), patch and adhesive bond by adhering 3' x 3' pieces of Lonseal resilient sheeting at various locations throughout the installation area. Roll with a 75 lb or 100 lb 3-section roller and allow 72 hours to cure before removing. Removal should be difficult.

Perform bond tests when:

1. The end-user requirements will subject the installation to heavy rolling loads, (i.e., money carts, freight trolleys (dollies), clothing racks, tool chests, pallet jacks, hospital beds, etc). Have the end-user pass the rolling load repeatedly over the adhered vinyl until the system is deemed fit for the application.
2. Installing to lightweight concrete with minimum 3200 PSI.

**Expansion Joints,
Control Joints**

Expansion joints are designed to permit slab movement which cannot be controlled. It is not recommended to install Lonseal sheet vinyl flooring over expansion joints. Ensure the material "stops short" at the expansion joint and install a suitable transition cap or threshold product designed to permit slab movement while preserving the quality of the installation and preventing damage to the Lonseal sheet vinyl flooring.

Control joints attempt to decrease cracks during slab movement. Following the manufacturer's directions, open, clean and fill control joints, saw cuts, and chase cuts with approved cementitious filler.

Disclaimer: Lonseal is not liable for damage resulting from telegraphing of any flooring disfigurement or hazard created due to installations over cracks or expansion joints

Substrates

All substrates must conform to requirements and shall be prepared as in the latest version of the ***Lonseal Technical Manual for Interior Flooring Products***.

Never place or fasten wood underlayment panels directly to concrete.

Lonseal is not responsible for:

- Ultimate performance or appearance of a panel.
- Stains attributable to underlayment panels or fasteners.
- Warranties for panel performance.

Existing Floors

VAT and VCT. Tile flooring upon which Lonseal sheeting is to be installed must be well bonded and completely free of bond-breaking finishes or contaminants. The substrate to which they are bonded must conform to specifications regarding moisture and alkalinity content and testing.

WARNING! Do not sand, shot blast or pulverize floor coverings known to contain asbestos.

Note: An encapsulate, such as *Maxxon Corporations Dura-Cap®*, can be used to abate VAT

Roll-out Bleachers

In the area designated for roll-out bleachers, #300 epoxy should be used the full length of the court to ensure the bleachers do not cause the Lonseal sheet vinyl flooring to buckle.

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Installation Guidelines

Preventing End Curl & End Seam Dip

Occasionally, the Lonseal sheet vinyl flooring that is wrapped around the factory core develops a significant curl and steps must be taken to ensure a secure bond. To reduce end curl, allow material to acclimate, while laying flat, for a minimum of 6-8 hours. Shrinkage can occur from improper acclimation time of material.

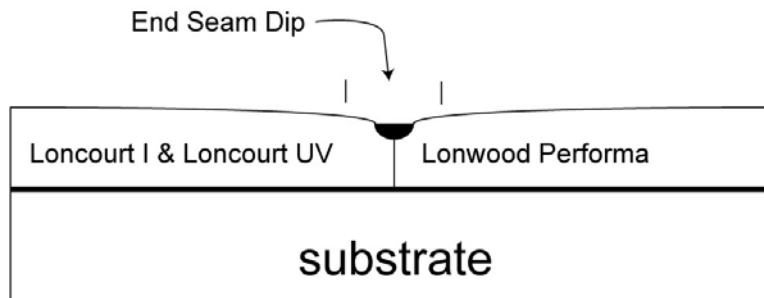
End curl

If end curl occurs after the sheeting has been laid into the #755 adhesive:

1. Pull approximately 6 inches of the sheet back and apply #755 adhesive to the backing with the flat side of the trowel using a scraping motion. Allow it to remain open until the #755 adhesive on the backing and the substrate are nearly clear of color and have become tacky to the touch.
2. Re-lay the vinyl and roll with a 75 – 100 lb. 3-section roller.
3. If the material will not lay flat, supply a clean plywood or other suitable panel centered on the cross seam, and apply weight until the #755 adhesive cures and holds the sheet securely.

End seam dip

End seams of Loncourt I, Loncourt UV and Lonwood Performa may dip slightly. It is good practice to place end seams where center and end court lines will be placed.



Installation

Lonseal flooring is designed to be installed fully adhered. The following layout information pertains to Loncourt I and Loncourt UV, supplied in rolls not longer than 50' (15.24 M).

Loncourt II, Lonwood Performa, Lonwood with Foam and Lonfoam rolls are 60' (18.3 M) and end seams must be staggered to optimize material use.

Note: *Double-Face Tape (DFT) is not to be used under the seams for ANY the sport flooring products. All sport flooring products should be heat welded 24 hours after installation.*

Laying Out

Lay out sheets so that all cross seams occur at the center and end court lines as illustrated. Stagger cross seams in sheets that lay beyond the outer boundaries of the court.

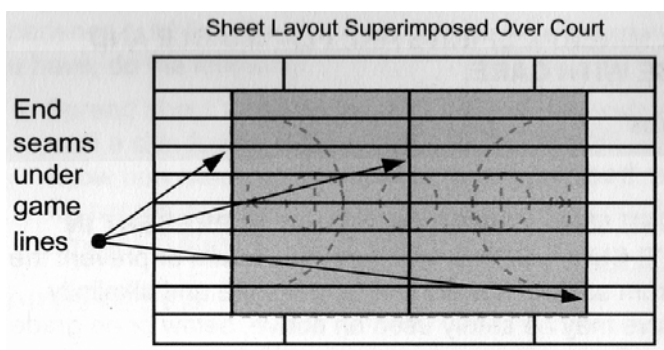


Figure 1 – Typical Seam Layout

Seams

Without exception, all seams must be heat-welded

1. DFT should not be used under the seams of sport flooring products. To ensure proper set time for the adhesive, heat welding should be completed 24 hours after installation.
2. All seams require heat welding with matching welding thread.
3. Inspect the seams to ensure that no contaminants remain in the grooves.
4. Seams may be routed or grooved with mechanical, electric or other devices. They should not exceed half the thickness of the welding thread, which is 4mm in diameter.
5. Adjust temperature of the welding gun or machine as necessary so that the vinyl thread and sheet vinyl flooring is thoroughly fused but not scorched.
6. Allow the thread to completely cool before trimming it. Make the initial pass with the knife and trim plate, then immediately make a final pass with the knife.

Depending on tool:
Heat welding gun to
600° F – 750° F
(316° C – 399° C)

5 Game Lines

Manufacturers of Gameline Paints and Coatings

Lonseal suggests the following product based on compatibility testing, performance, and customer support. When contacting the manufacturer, be sure to request color charts, application guidelines, coverage, MSDS, and the name(s) of certified application contractors.

Line paint/coating must be applied prior to any clear finish (except Loncourt UV).

<i>Manufacturer</i>	<i>Phone</i>	<i>Web</i>	<i>Contact</i>
Can-Am Coatings – Endura Paint Distributors	(619) 937- 0430	www.endura.ca	Tom Whitelock tom@endurapaint.com
JFB Hart Coatings, Inc.	(630) 633- 6228	www.jfbhartcoatings.com	Jason Beedie jasonbeedie@jfbhartcoatings.com
Tradewinds International, Inc.	(562) 424- 1739	www.twi-coatings.com	Douglass Moody tradewinds@usa.com

Note: On heavily textured surfaces, game line paint can leach under the masking tape. Therefore, before proceeding with the rest of the job, apply tape and paint/coating to a scrap piece of flooring to get a feel of how the tape and paint/coating will work together.

Please contact paint/coating manufacture directly for additional details or technical support.

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Maintenance Guidelines

Application and Maintenance of Standard Acrylic Finish

If no game lines are to be painted, you may begin initial maintenance 48 hours after installation.

If game lines are to be painted, you may dust mop only. Do not commence machine maintenance until thirty days after the game line paint is applied.

Lonseal's Floorcare Maintenance Program has been designed to extend the aesthetics and performance of Lonseal's resilient vinyl surfacing products. As a part of this program, each of Lonseal's products has been engineered to excel at their specific application in combination with Lonseal sheet vinyl flooring products. It is encouraged that Specifiers' include Lonseal's Floorcare Products in all Lonseal specified projects to obtain optimum results.

Lonseal's maintenance products are available through our Customer Service Department at 800-832-7111. These instructions are for **machine** and **manual** maintenance methods.

- Install and maintain entry matting with a non-staining backing to reduce tracked-in dirt and contaminants.
- Begin maintenance 48 hours after installation.

Initial Maintenance

1. Remove dry soils (labels, gum). Sweep or microfiber dust mop floor. Place "Wet Floor" signs in area.
2. Dilute **Loncare** 2 oz. per gallon of cold tap water. Scrub with blue pad on auto scrubber or single disk machine.
3. Pick up cleaning solution with scrubber or wet vac. Replace the solution when mop water becomes dirty.
4. Using a clean microfiber mop pad, damp mop any residues with clean water. Allow floor to dry completely.
5. Apply **Lonprime** in one thin coat using a clean microfiber mop pad. Application of **Lonprime** as a base seal coat increases the adhesion of the floor finish to the floor.
6. Allow to dry completely before applying floor finish. Dry time is subject to temperature and humidity.
7. Apply **Lonfinish/Lonsatin** in a thin coat using a clean microfiber mop pad.
8. To apply a full even coat, outline the area to be finished. Fill in the outlined area using a figure eight (8) motion. Ensure perimeter and edges are completely coated.
9. Apply a minimum of 2-4 coats. Allow 30-45 minutes between coats.
10. Allow to dry completely (4 hours) before allowing traffic.

NOTE: It is recommended to use **4-6 coats** of **Lonfinish/Lonsatin** for Lonseal Sports Flooring.

Routine/Daily Maintenance

1. Remove gross soils (labels, gum). Sweep or microfiber dust mop the floor. Place "Wet Floor" signs in area.
2. Dilute **Loncare** 2 oz. per gallon of cold tap water. Replace solution when mop water becomes dirty.
3. Apply to finished floors using a clean microfiber mop pad or auto-scrubber. Allow floor to dry completely.
4. When dry, if needed, burnish with ultra high speed machine and blue ice pad to high gloss (those floors using **Lonfinish**). Never burnish with a soiled pad.

Periodic

Scrub and Recoat (as needed)

1. Dilute **Loncare** 2 oz. per gallon of cold tap water. Scrub with blue pad on auto scrubber or single disk machine.
2. Pick up cleaning solution with scrubber or wet vac. Replace solution when mop water becomes dirty.
3. Using a clean microfiber mop pad, damp mop any residues with clean water. Allow floor to dry completely.
4. Apply **Lonfinish/Lonsatin** in a thin coat using a clean microfiber mop pad.
5. To apply a full even coat, outline the area to be finished. Fill in the outlined area using a figure eight (8) motion. Ensure perimeter and edges are completely coated.
6. Apply a minimum of 2-4 coats for Lonseal Sport Flooring. Allow 30-45 minutes between coats.

Note: To keep clean, follow ***Routine/Daily Maintenance*** guidelines.

Restorative

Strip and Finish (as needed)

1. Sweep to remove gross soils. Divide work areas into small 5' X 20' areas.
2. Dilute 1 part **Lonstrip** with 5 parts water. Apply enough stripper to ensure complete wetting.
3. Allow to stand 5-10 minutes minimum. DO NOT ALLOW SOLUTION TO DRY. Re-wet as needed.
4. Scrub floor with auto-scrubber or floor machine using a brown stripping pad to break softened film. Flip pad and replace as needed.
5. Pick up solution with wet vac or auto-scrubber.
6. Damp mop floor with clean water to remove all residues.
7. Allow to dry before applying **Lonprime**.
8. Apply **Lonprime** in one thin coat using a clean microfiber mop pad. Application of **Lonprime** as a base seal coat increases the adhesion of the floor finish to the floor.
9. Allow to dry completely before applying floor finish. Dry time is subject to temperature and humidity.
10. Apply **Lonfinish/Lonsatin** in a thin coat using a clean microfiber mop pad.
11. To apply a full even coat, outline the area to be finished. Fill in the outlined area using a figure eight (8) motion. Ensure perimeter and edges are completely coated.
12. Apply a minimum of 2-4 coats for Lonseal Sport Flooring. Allow 30-45 minutes between coats.

Long Term – Restoring Luster

METHOD 1

- Rejuvenate the finish, with two thin coats of **Lonfinish/Lonsatin**, applied as detailed under Scrub and Recoat (above). Stripping the finish/dressing is rarely needed if the floor is maintained and thin coats of dressing applied as needed to refurbish the floor appearance.

METHOD 2

- Once the surface is clean and completely dry, **DRY BUFF** with a ¹Contact Pad on a high speed machine or Autoscrubber (1500 rpm) to enhance the luster.

Maintenance on Glossy Urethane Finished Surfaces

These instructions are for *machine* and *manual* maintenance methods

- Begin maintenance 48 hours after installation is complete.
- The floor should always be clean to minimize any slip hazard from build up of dust and tracked-in contaminants.
- When the floor is properly clean, you will notice increased traction. Always use quality cleaning products.

Initial and Daily Maintenance

1. Install and maintain entry matting with a non-staining backing to reduce tracked-in dirt and contaminants.
2. Sweep with a soft bristle broom and/or dust mop the entire area using a microfiber mop to remove dust and debris.
3. Damp mop using a microfiber mop or conventional mop and bucket system with **Loncare**.

Interim Maintenance (As Needed)

The length of time required for additional maintenance or revitalizing varies and is dependent upon usage and traffic.

1. Sweep and dust mop the entire area.
2. Spray a fine mist of **Lonbuff** over a small area to be cleaned (about 5 feet at a time).
3. Immediately BUFF sprayed area with a low speed machine equipped with a Contact Pad until clean and dry.
4. Change Contact Pads when they get clogged.
5. Once the surface is clean and completely dry, DRY BUFF with a Contact Pad on a low speed machine to enhance the luster.

Note: Do not use abrasive pads, brushes or cleaning agents.

¹ Contact Pads can be used on smooth products, providing the cleaning power of a red 3M type pad, thus outlasting conventional pads. Contact pad fibers are split laterally into five segments, which creates 15 contact points for every one fiber thus increasing contact with the flooring surface for greater efficiency with no abrasion to the surface. Contact pads can also be repeatedly machine washed thus increasing cost effectiveness.

Application and Maintenance of Aftermarket Urethane Dressing

Aftermarket urethane coatings are much more expensive than standard acrylic dressings referenced above. Their advantage lies in their density, which provides outstanding wear, resistance to staining, and ease of maintenance. Aftermarket urethane coatings may be applied before or after the game lines.

If no game lines are to be painted, you may begin initial maintenance 48 hours after installation.

If game lines are to be painted, you may dust mop only. Do not commence machine maintenance until thirty days after the game line paint is applied.

- Install and maintain entry matting with a non-staining backing to reduce tracked-in dirt and contaminants.
- On low-speed rotary machine use contact pads for smooth surfaces or brush attachment for textured surfaces.

Daily Autoscrub Procedures

1. Remove gross soils (labels, gum). Sweep or dust mop the floor. Place "Wet Floor" signs in area.
5. Dilute **Loncare** 2 oz. per gallon of cold tap water. Replace solution daily or when mop water becomes dirty.
2. Autoscrub with a red pad or soft brush using overlapping passes.
 - When one side of the pad becomes dirty, flip it to the clean side.
 - When both sides are dirty, change to a clean pad.
 - Place dirty pads in a trash liner for cleaning later.
3. Damp mop any residues with clean water. Allow floor to dry.

Daily Mopping Procedures

1. Remove gross soils (labels, gum). Sweep or dust mop the floor. Place "Wet Floor" signs in area.
2. Dilute **Loncare** 2 oz. per gallon of cold tap water. Replace solution daily or when mop water becomes dirty.
 - Note: Never mop floors with dirty mop water or use dirty mops.
3. Remove scuffmarks from the surface with **Loncare** and a red scrub pad.
4. Damp mop any residues with clean water. Allow floor to dry.

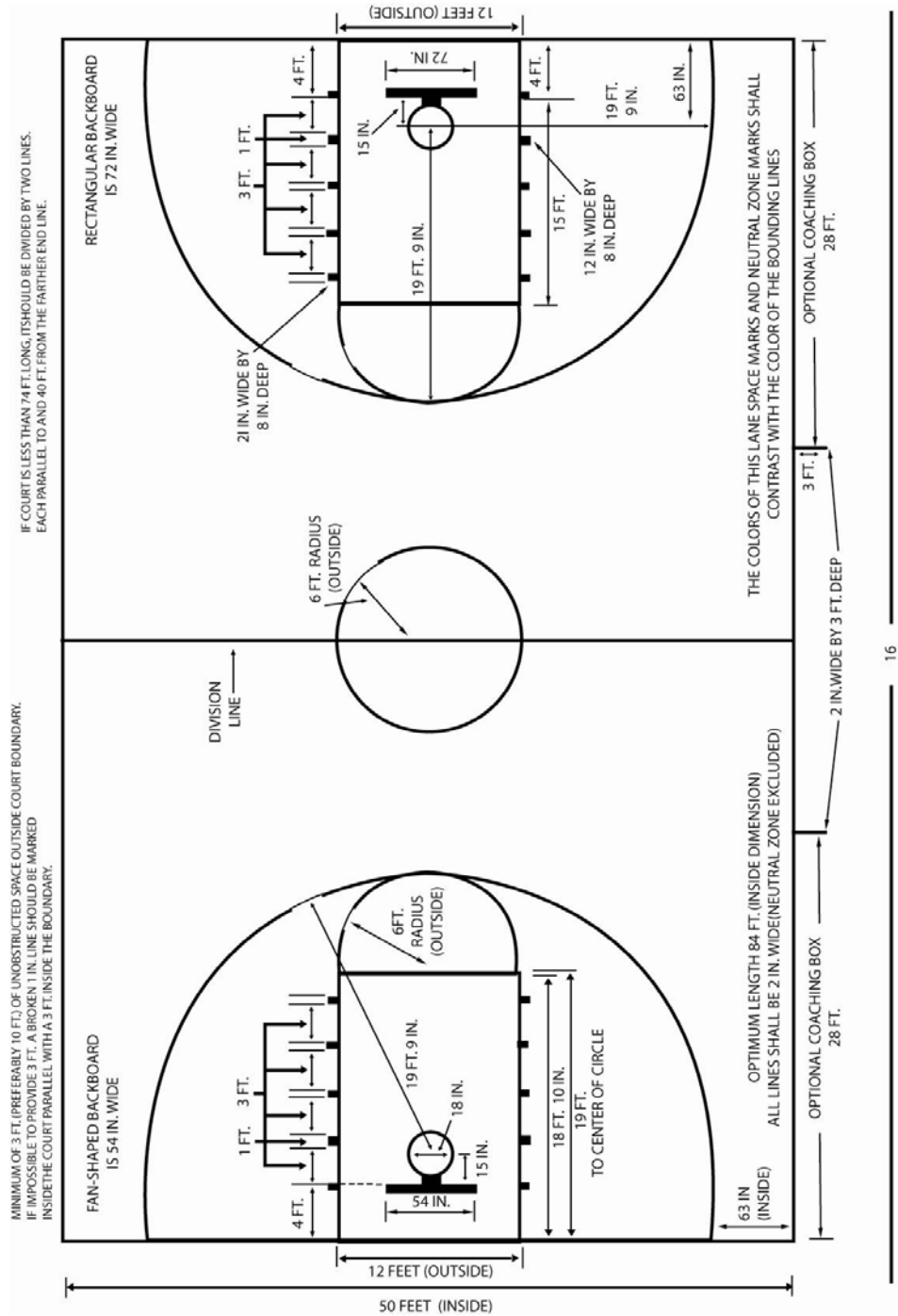
Damp Mopping Tips

1. Always dilute cleaning solutions according to directions, overuse of detergents can leave a residual film on the floor.
2. Do not over-wet floor; this will avoid leaving 'slop marks' on walls, furniture, carpeting, etc.
3. Always read product label and MSDS before using any chemical products for proper use, and recommended personal protective equipment (PPE) such as safety glasses, gloves, etc.

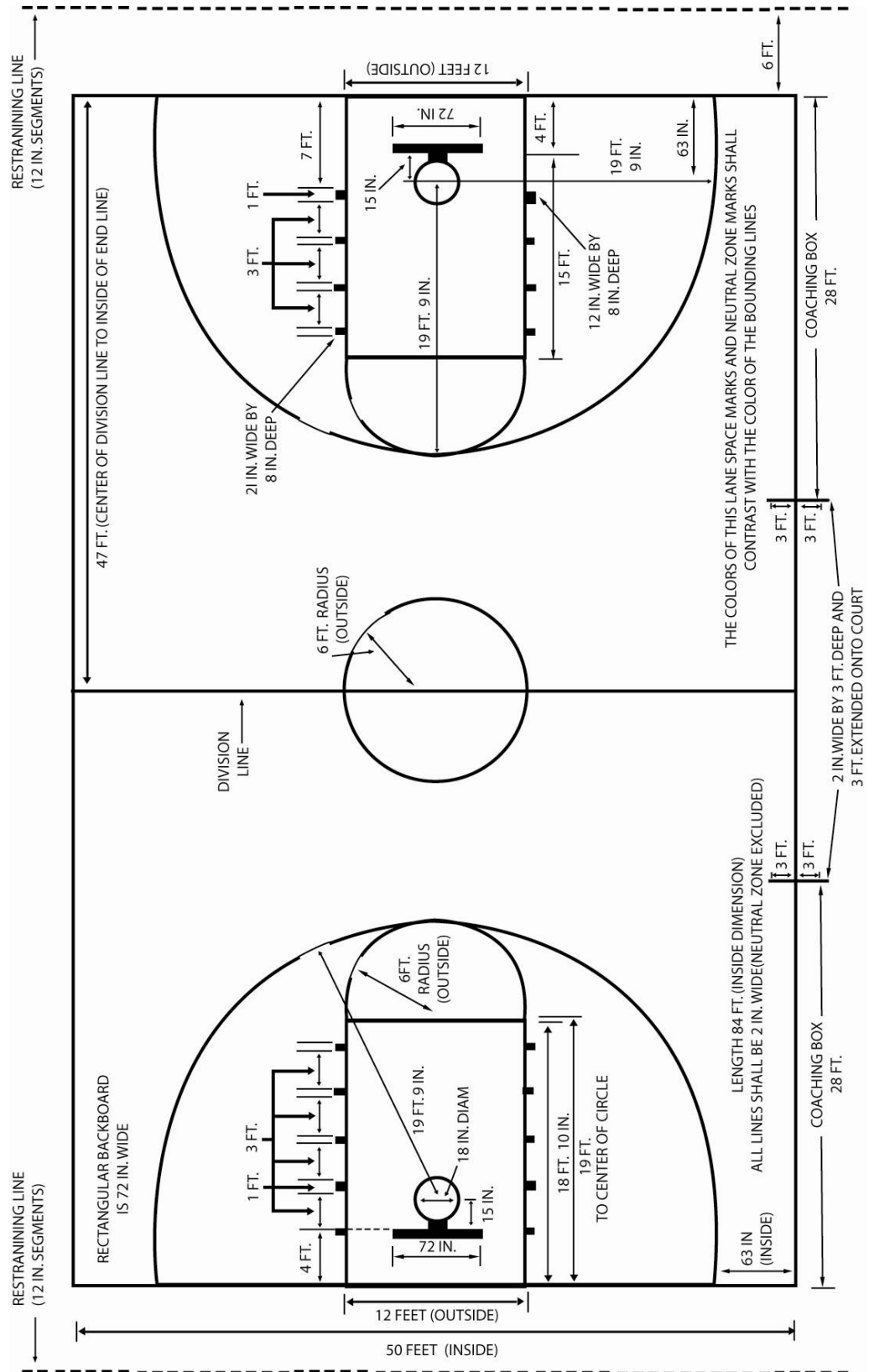
Lonseal, Inc. does not warrant performance of nor will be held responsible for problems arising from the use of any maintenance product by any manufacturer since all situations and application personnel are different. All questions should be directed to the Lonseal, Inc. Technical Department at 800-832-7111 or Technical@lonseal.com.

8 Court Diagrams

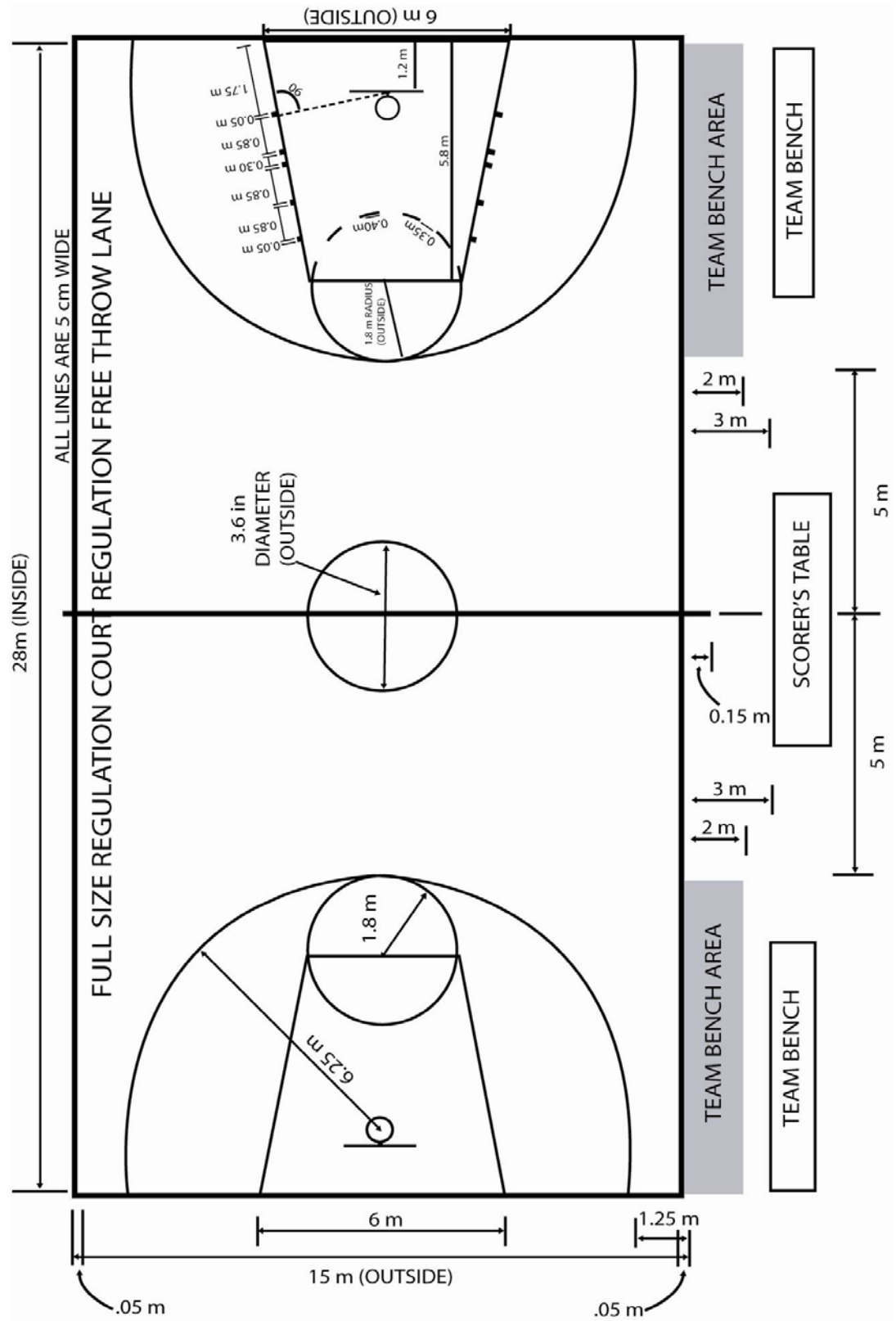
High School Basketball Court



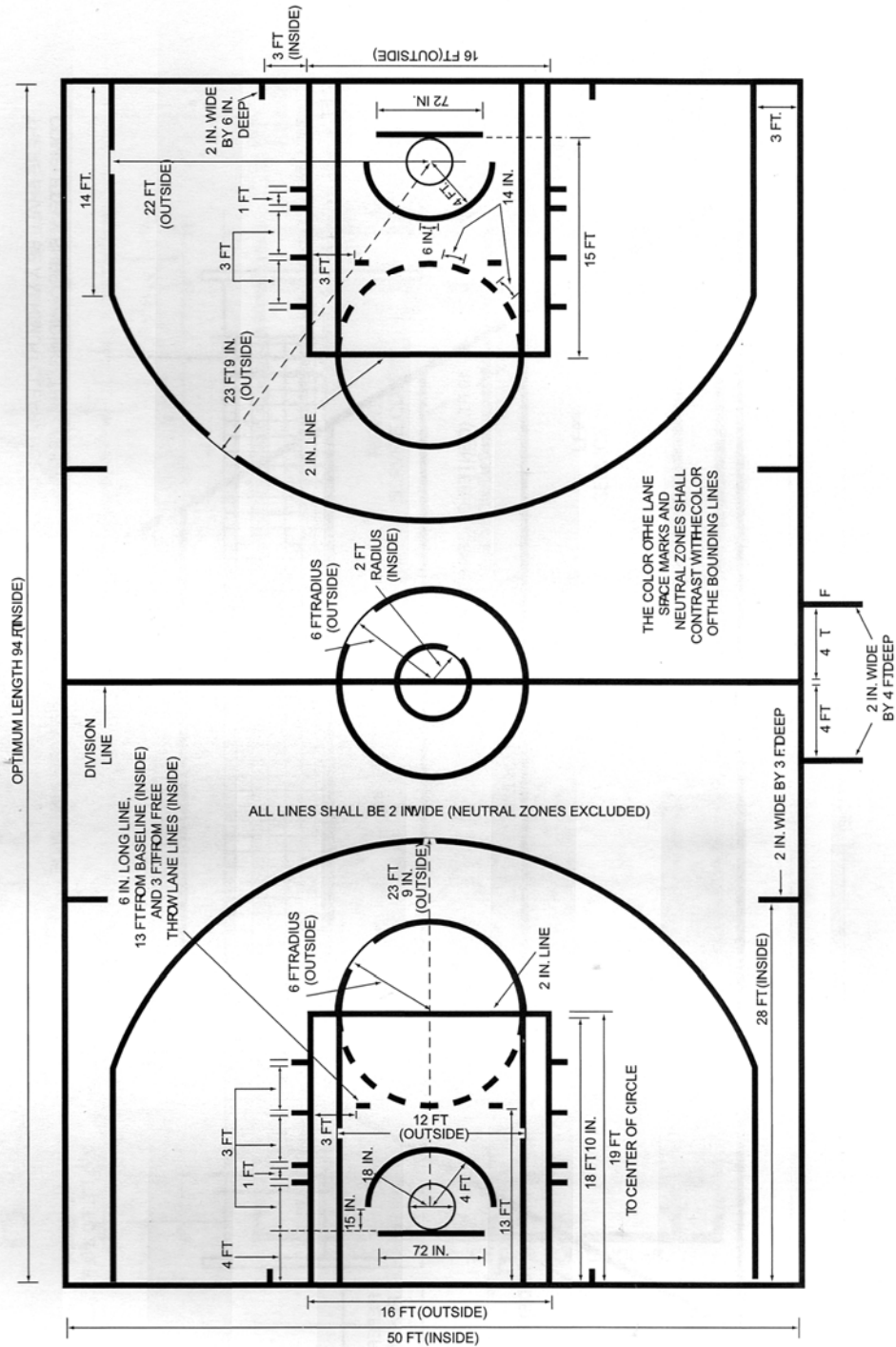
N.C.A.A. College Basketball Court



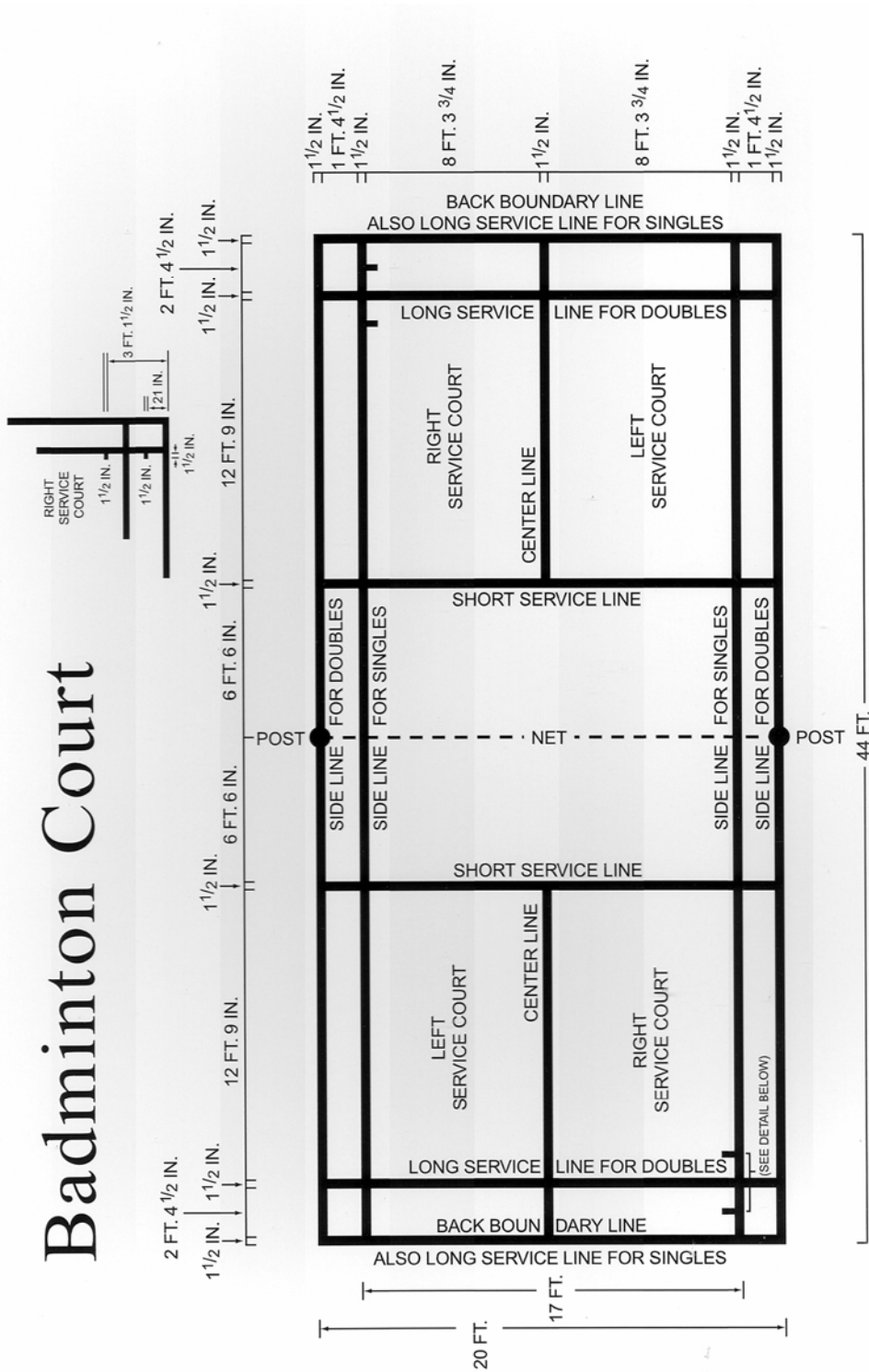
International Olympic Basketball Court



N.B.A. Basketball Court



N.B.A Basketball Court



Badminton Court