TILING

Operation & Maintenance

CARE AND MAINTENANCE

CERAMIC TILE

CERAMIC TILE - ROUTINE CARE
Contaminants and spills on a glazed ceramic tile are, generally, easier to clean then other surfaces. Glazed tile products should be cleaned routinely with an all-purpose, low VOC household or commercial cleaner. The product chosen should also be grout joint cleaning compatible. The type of product may vary depending on the tile application and use. A multipurpose spray cleaner, which removes soap scum, hard water deposits, and mildew designed for every day use, can be used on wall tile areas in residential baths and showers.

The entire area should be cleaned and scrubbed with cleaner solution through the use of a cotton mop, cloth, sponge, or non-metallic brush. The entire area should be rinsed with clean water to remove any cleaning solution residue. Remember that you should sweep or vacuum floor areas prior to cleaning to remove any dust or debris. Routine cleaners should never contain hazardous or polluting products including, but not limited to acids or ammonia. Acids can damage the grout and the glazed surface of the tile, and ammonia can discolor the grout.

Unglazed tile should be cleaned routinely with concentrated tile cleaners that have a neutral pH for safe regular use. These cleaners are better suited at removing grease, oils and normal spills from unglazed products. Again these products will vary depending on the application, amount of traffic and the use. The product chosen should also be compatible with cleaning the grout joints at the same time.

Removal of Sealers/Waxes/Floor Finishes:
If you need to remove a topical sealer or floor wax from a ceramic tile you should use a Tile Sealer & Adhesive remover. Always test a small area first. Apply a liberal amount of undiluted sealer & adhesive remover to a manageable area. Allow setting without drying until coating or residue softens. Reapply if necessary until sealer softens and can be removed. If necessary, agitate with white nylon scrub pad. Wipe up the residue with a cotton towel or sponge. Rinse thoroughly with clean water. Do not use on natural stone products.

Glass Tiles:
For routine cleaning, use any non-abrasive cleaning compound recommended for either glass or tile

Metal Signatures/Metal Ages/Urban Metals:
- To clean, use a liquid non-abrasive household cleaner.
- DO NOT use scouring pads, steel wool, sandpaper or other abrasive products.
- Avoid cleaners containing ammonia, bleach, abrasives, or other hazardous/polluting compounds.
- Always test in small inconspicuous area while using a new cleaner to ensure compatibility.

CERAMIC TILE - GROUT CARE
Grout is the material used to fill the spaces between the individual tiles. Grout comes in many colors. While color is important to the final finished look of the tile installation, it has little effect on the functionality of the grout. The purpose of grout is, simply, to fill the joint between the tiles and becomes a permanent, integral component of the finished installation.

Penetrating/Impregnating Sealer:
Most tile installations use cementitious grouts. This type of grout should be sealed after installation to prevent the color from staining. The grout should be sealed with a penetrating/impregnating sealer (often called grout sealers) which does not contain silicone, as silicone can shorten the useful life of the sealer. Epoxy grouts, conversely, are chemically cured and acid resistant and, as a result, do not require a sealer. The application of a good quality penetrating/impregnating sealer into the grout joints of a cementitious grout will not change the natural color of the grout, but will prevent the penetration of moisture, simplify maintenance, and help prevent staining or discoloration. Only the grout needs to be sealed, not glazed floor or wall tiles. Grout can be sealed seventy-two hours after installation.

There are different grades of penetrating/impregnating sealers, therefore the useful life and price will differ between a low quality and high quality sealer. You may need to reapply the sealer on an annual basis depending on the sealer quality, traffic patterns, and maintenance routine. Some sealers have multiple year warranties for useful life. Refer to the manufacturer warranty, technical & product information for specific details on product installation, useful life, and product applications (including any warnings) before use.

Grout Maintenance:
Neither sealing the grout nor using a 100% Epoxy Grout will guarantee against surface build-up or discoloration of the grout. Grout needs to be cleaned on a periodic basis to remove any surface build-up. Routine grout cleaning can be done with a daily concentrated household or commercial cleaner depending on the application. When heavy duty grout cleaning is required, you will need to use a professional strength Tile & Grout Cleaner that is capable of removing grease, soap scum, body oil, mildew stains, algae, and synthetic or acrylic waxes from the grout joints. However, such a product should contain non-polluting chemicals and low

VOC levels. This type of product can be purchased from most Home Centers, or through your local professional Floor Covering Dealer

Grout Color Restoration:

When grout has been stained to the point that it cannot be maintained or returned to its natural color, you can return the grout back to its original color or any other color through the use of a "grout stain". Grout Stains are epoxy-based products that are specifically designed to penetrate into the grout and seal the surface with a permanent color. Once the grout has been stained there is no need to seal it any further with a penetrating/ impregnating sealer. Prior to staining, the grout joint should be cleaned thoroughly to remove any dirt, oils, grease or sealers with a professional strength Tile & Grout Cleaner. This can be purchased from most Home Centers or through your local Professional Floor Covering Dealer.

Post-Grout Clean-Up:

Grout haze is a film that has been left behind on the surface of the tile as part of the final grouting process. Usually this is buffed off the surface after the grout has achieved its initial 12 to 24 hour cure. The removal of the haze is often difficult when buffing with a clean rag or floor machine. Cementitious grout haze can be successfully removed with "Sulfamic" acid, which is a mild acid that attacks and breaks down cement smears. There are several products on the market called grout haze removers, which usually contain Sulfamic acid. Sulfamic acid can also be purchased in powder form and mixed with water to different strengths by qualified professionals. Similarly, 100% Solids Epoxy Grout haze can be removed with an Epoxy Haze Remover. These removers are formulated to safely and quickly remove cured epoxy haze from new tile installations. Their unique formulation will soften most epoxy hazes for easy removal without damaging the grout or tile, usually in one application. Sulfamic acid or grout removers should never be used on Natural Stone products.

NATURAL STONE

NATURAL STONE - ROUTINE CARE

To ensure your natural stone products will provide you with a lifetime of aesthetics and utility, a proper maintenance program is crucial. Natural Stone products are porous by nature and require a different maintenance program than traditional ceramic tile.

Natural stone requires a different maintenance routine than traditional, man-made ceramic tile. Many of the cleaners acceptable for use on ceramic tile can stain, damage or dull stone. Dirt and dust will scratch the surface of stone. Therefore, stone floors should be vacuumed or dust mopped frequently to remove abrasive agents from the stone surface. Natural stone should be cleaned with neutral cleaners. Stone cleaners should never contain acid or bleach. Acids, even a light solution of vinegar and water, will etch and eventually damage natural stone.

Stone Cleaners:

Only use cleaners specifically designed for cleaning stone. These cleaners contain no acids and are concentrated neutral pH cleaners that will not affect existing sealers or wax-type coatings. The surface of the stone should be dampened with clear water. This will keep the cleaning solution on the surface so it can be effective. A solution of the cleaner and water missed to manufacturer instructions should be applied to the stone surface with a sponge or mop. On walls, kitchen counters or vanity tops, a spray bottle can be used to apply the cleaning solution. Allow sitting for manufacturers specified amount of time (usually 3 to 5 minutes). Agitate with a sponge, synthetic mop, soft bristle brush or through the use of a floor-scrubbing machine. Mop up dirty solution and buff dry.

Once the stone has been cleaned, you can periodically apply a Spray-Buff wax-type floor finish to enhance the beauty and luster of polished stone (including countertops). Apply the finish with a spray applicator and buff immediately with a white nylon pad. Reapply as often as needed, depending on volume of surface traffic and consistency of routine maintenance program. This product is not designed to restore the original shine, but is intended to maintain and protect the original shine. This can be purchased from most Home Centers or through your local Professional Floor Covering Dealer.

Heavy-Duty Stone Cleaning:

When some areas have been neglected, you will need to use a heavy-duty non-hazardous and non-polluting stone cleaner and degreaser to effectively remove dirt, grease, grime, waxes and floor finishes. An optimal heavy-duty cleaner should contain low percentages of volatile organic compounds. These cleaning products are concentrated and designed to deep clean the stone without damaging it. Apply the solution of the cleaner and water mixed to manufacturer instructions to the stone surface with a sponge or mop. Allow setting for manufacturer-specified amount of time. Agitate with a sponge, synthetic mop, and soft bristle brush or through the use of a floor-scrubbing machine. Mop up dirty solution and buff dry. Be sure to change out the cleaning solution every 100 square feet to avoid reintroducing dirty water during the cleaning process. Rinse thoroughly with clean water when finished. After cleaning you may apply the Spray-Buff wax-type floor finish to enhance the natural shine.

Stain Removal:
Stone poultice will remove stains and grout haze from stone. Poultice is a fine, nonacidic, absorptive clay cleaning powder that removes deep-set oil stains, grease and light cementitious grout haze from polished and unpolished natural stone.

CAUTION: *Poultice may dull the shine of the polished stone. If this occurs you will need to use a marble polish to restore the natural shine.*

Restoration:
If a marble finish has become dull, scratched or etched, you can restore the natural shine through the use of a marble polish. Some marble polishes are available in kits. The process can be enhanced with the use of floor buffing machines. The process is generally a re-crystallization process to remove fine scratches and restore the original shine and polish to the stone. This is not an application of a topical sealer or wax to cover-up damaged or worn surfaces.

NATURAL STONE - NEW INSTALLATIONS
Sealing is strongly recommended for newly installed marble and other natural stone to provide maximum below surface stain protection. Consult your Professional Floor Covering Dealer or Home Center Store to ensure that you select a high quality sealer to protect your natural stone. Immediately after natural stone has been installed and grouted, the new installation should be covered with brown paper to protect it from debris during the remaining construction process. The protective brown paper should remain in place until construction is completed and the area is opened to intended (post-construction) use.

Pre-grout Sealing:
A non-sanded grout is strongly recommended for natural stone installations due to the narrow grout joints customarily preferred. This type of grout has very fine particles of cement, polymers and color pigments that can penetrate the microscopic pores of the stone surface where they become trapped and appear as a stain in the stone. Therefore, all travertine, slate, tumbled stone and honed/flamed/unpolished granite should be sealed prior to the grouting process to protect them from staining. The application of a good quality sealer should be used as a grout sealer and applied again as the final sealing process once the installation is finished.

Sealing:
A premium natural look penetrating/impregnating sealer is the normal choice on polished or honed marble, limestone, granite, or where the natural color of a slate is desired. A stone enhancer sealer is often used on tumbled, antique stones or on slate where a darker, enriched or highlighted character is desired. When choosing either one of these types of sealers, make sure the brand you have chosen is formulated to provide maximum stain protection for stone products. Stone products should be tested periodically per manufacturer's instructions to insure that the sealer is working effectively.

Penetrating/impregnating stone sealers are a no-sheen, natural look sealer that can be water-based or solvent-based, good for interior and exterior applications. Most quality sealers of this type are rated to protect the stone for several years.

Stone enhancer sealers are also a no-sheen, penetrating/impregnating sealer that is formulated to darken, enrich and highlight the natural color and beauty of stone products. They will rejuvenate and improve the appearance of worn and weathered stone. Always test loose pieces of stone to ensure desired effect with enhancing sealers. However, they will also darken the color of grout joints. They are, generally, suitable for interior and exterior use, and rated to protect the stone for several years.

Always reference manufacturer's literature for specific information on the duration of the sealer's protection and make sure that the sealer is applied in strict accordance with the manufacturer's instructions.

Finishing:
A stone floor finish should be applied to a polished natural stone floor only. This type of product will help enhance the shine and provide a protective coating for "soft" or polished marbles. Verify the finish is a wax-type finish designed to add luster and enhance the beauty of sealed and polished natural stone only. A topical finish may change the appearance and performance of your stone, so always test a small area first. ***Application of topical sealer or wax should never be done as an attempt to add a shine to a honed, scratched or non-polished stone product. This will only create maintenance and/or slip resistance problem.***

SALTILLO

SALTILLO TILE - ROUTINE CARE
Soft clay tiles are categorized as specialty use products, and as such they are generally not governed by the same requirements as glazed or unglazed ceramic tile. These products will require some type of

topical sealer protection. These sealers are designed to provide stain resistance and a durable finish to protect clay tile against wear. Pre-sealing the tile prior to grouting will act as a pre-grout sealer, provided it is applied over a clean tile surface. An additional final coat over the grouted floor will complete the sealing process along with providing the final grout stain protection.

There are two common types of sealers used today for sealing specialty tiles. The first is a water-based blend of acrylic polymers. This product allows for moisture vapor transmission, and it can be reapplied over itself, without stripping or removing the old sealer when the original application has become worn. The second type is a solvent-based sealer. Solvent-based sealers are not as forgiving after they have become worn, they must be stripped and removed prior to reapplication. Both types should be UV stable, which means the ultra violet rays from the sun should not break them down. You should always follow the manufacturer's instructions for use, maintenance and precautions.

The expected wear of the topical sealer will vary depending on the hardness, surface texture, type or area, usage, and type of maintenance products used. However, the average expected use life of the sealer, when properly prepared, is a maximum of 3 years. Harsh cleaning methods, high-alkaline or solvent-based cleaners can significantly lower the expected life of the sealer. Concentrated tile cleaners are recommended for routine cleaning.

Maintenance Cleaning:
Highly alkaline, acidic, ammoniated, abrasive cleaners and/or bleach may break down the sealer, adversely affecting repellency and may not be good for the tile or grout. Use neutral cleaners specially formulated for tile and grout that are low VOC, non-hazardous and non-polluting.

For routine cleaning:
We recommend DuPont™ StoneTech® Professional Stone & Tile Cleaner.

- Mix 2 ounces of Stone & Tile Cleaner concentrate in 1 gallon of warm or hot water. (Note: One gallon of concentrate makes 64 gallons of cleaning solution.
- Apply mixed solution with a damp mop, sponge or appropriate professional cleaning equipment.
- Clean entire area with mop, changing mop water often to ensure that soil is not re-deposited. Wipe or rinse cleaned area.
- Let area dry completely before using.

You may also use DuPont™ StoneTech® Professional Stone & Tile Cleaner in the ready-to-use spray bottle or wipes.

Re-Sealing and Protecting:
For interior surfaces, resealing should be performed every 3-5 years. For exterior surfaces, resealing should be performed every 1-3 years. Terrazzo surfaces must be sealed to prevent or minimize staining. Leaving terrazzo untreated may greatly hinder the complete removal of stains in the future. We recommend the use of a heavy-duty sealant that is low in VOC content and does not contain any hazardous materials.

ONE QUARTZ SURFACES

ONE QUARTZ SURFACES - ROUTINE CARE

- One Quartz Surfaces are virtually maintenance free and can be cleaned with extreme ease.
- Common household spills – such as, tea, coffee, lemon juice, so fruit, vegetable juice, olive oil or grease spills – are easily removed and the surface restored to its original appearance.
- Some One Quartz Surface colors and finishes liked honed, matt, etc., are more sensitive to grease or finger-prints and may require extra care during routine cleaning.
- Quartz is one of the hardest materials in nature, which is your assurance that your One Quartz Surfaces will not easily scratch or chip. The use of a cutting board is nevertheless recommended.
- To maintain the natural beauty of One Quartz Surfaces, do not place hot skillets or roasting pans directly onto the surface but use a trivet instead.
- For routine cleaning, use a damp cloth or paper towel and, if necessary, a small amount of mild soap. Once clean, rinse and dry surface thoroughly.
- For stubborn or dried spills, use a nonabrasive cleaning pad such as a white 3M Scotch-Brite® scrub pad combined with a small amount of mild soap or specialized stone cleaner. One Quartz Surfaces floors in high traffic areas should be cleaned daily with a clean, dry dust mop or soft bristle broom.
- One Quartz Surfaces floors in low traffic areas can be cleaned less frequently using the same method. Spills should be spot treated with the use of a damp mop or

cloth towel and, if necessary, a small amount of mild soap or specialized stone cleaner.

- A floor machine such as a slow speed buffer or walk behind scrubber can be used for larger commercial environments. Be sure to rinse thoroughly to remove any haze residue that may diminish the shine and beauty of the floor.

- For Heavily soiled floors, as with any floor, it makes sense to clean up spills as soon as possible.

- Avoid exposing One Quartz Surfaces to chemicals and solvents, especially paint removers or furniture strippers containing trichlorethane or methylene chloride. Keep nail polish remover, bleach or cleansers that contain bleach, bluing, permanent markers or inks. While casual exposure to alkaline materials will not damage One Quartz Surfaces, highly alkaline (high-pH) cleansers are not recommended when cleaning One Quartz Surfaces. If any of the substances listed above come into contact with One Quartz Surfaces, rinse the exposed surface immediately and thoroughly with plenty of clean water.

- Do not use strong abrasive and/or alkaline cleaning products. Always follow the manufacturers' dilution instructions and recommendations.

MANUFACTURED STONE

Manufactured Stone – Routine Care
Care should be taken to avoid smearing mortar on the surface of the veneers. Accidental smears should be removed using a dry whisk broom only after mortar has dried completely. Never use a wet brush or wire brush. Do not power-wash, sandblast, use acid or acid-based products. Dirt or other materials may be removed with a strong solution of granulated soap or detergent and water with a bristle brush. Do not use a wire brush as it will cause damage to the surface. Rinse immediately with fresh water. Regular maintenance only requires to rinse the wall with water occasionally to remove dirt.

Sealing:
Seal with a breathable, non-film forming masonry sealer, to prevent staining from rusty downspouts, splattered mud, etc. Sealing is strongly recommended for dry-stacked applications and/or for harsh environments.

POLISHED PORCELAIN

Recommended Sealers Pre-Grout sold through Dal Tile stores may include ...
- DuPont Stone Tech Professional Bullet Proof (Follow manufacturer instructions for application process).

- Aqua Mix Ultra-Solv (Follow manufacturer instructions for application process).

Recommended Sealers Post-Grout sold through Dal Tile stores may include ...
- DuPont Stone Tech Professional Impregnator Pro (Follow manufacturer instructions for application process).

- Aqua Mix Sealers Choice Gold (Follow manufacturer instructions for application process).

IMPORTANT: Always use the same sealer when applying both before and after grouting. Never mix water-based sealers with solvent-based sealers on the same tiles.

Fully polished impervious porcelain tile is achieved by mechanically changing the surface from matte I natural to a honed or high polished finish. Polished Colorbody© porcelain is achieved by mechanically changing the glaze surface from matte to light, honed or high polish finish. This process creates a microporosity on the face of the tile. The tile itself is still technically sound porcelain with the same characteristics expected of high quality impervious tile.

The surface, however, may possibly require added protection to assure clean-ability and ease of ongoing maintenance under a range of conditions including but not limited to:
- grout haze removal
- construction chemi cals and dirt
- maintenance I solvent based cleaning materials
- exposure to rubber containing solvent based materials
- acid based materials

All of the above can result in hazing, spotting, etching or general staining of the polished tile surface.
We recommend the use of a sealer on fully polished, impervious porcelain and polished glaze porcelain tile prior to grouting. We strongly caution against the use of acid based or solvent based chemicals for cleaning or construction maintenance on fully polished impervious or polished glaze porcelain tile. The use of such products may damage the floor.

With proper installation techniques,preventative care and effective maintenance procedures, fully polished impervious porcelain and polished glaze porcelain tile is a durable, high value, long lasting flooring option for most commercial and residential spaces.

Recommended Stain Remover sold through Dal Tile stores may include:

- DuPont Stone Tech KlenzAll (Follow manufacturer instructions for application process).

- Aqua Mix Sealer and Coating Remover (Follow manufacturer instructions for application process).

Polished tile can be slippery when wet. Please refer to our usage and maintenance recommendation on our website and catalog for all porcelain products. www.daltile.com.

UNGLAZED/MATTE/TEXTURED PORCELAIN

Porcelain tiles with a matte or textured surface may contain structure or micro texture for slip resistance and visual enhancement. We recommend the use of a grout release prior to grouting for these products to enhance the efficacy of removal of the various types of grout, latex modified grout, epoxy grout used in the market today.

Recommended Grout Release products sold through Dal-Tile stores may include ...

- DuPont Stone Tech Professional Impregnator Pro (Follow manufacturer instructions for application process).

- Aqua Mix Grout Release (Follow manufacturer instructions for application process).

Recommended Sealer products sold through Dal-Tile stores may include ...

- DuPont Stone Tech Professional Impregnator Pro (Follow manufacturer instructions for application process).

- Aqua Mix Ultra-Solv (Follow manufacturer instructions for application process).

Additional Installation Tips

- Sealers may require more than one application depending on the tile and grout utilized.(Apply on a test area to validate prior to grouting).

- Penetrating sealers usually require only one application and should not be left to dry on the tile surface. (Remove excess as material is being applied).

- Remove excess sealer from the tile surface by buffing with a clean dry towel. (Follow manufacturer instructions).

- Allow the sealers and /or grout release products to cure on the tile before grouting. (Follow manufacturer instructions).

Please contact your local Dal-Tile Representative, NA Manager or the National Account Support team at the contact numbers or email below:

Phone: 214.309.3408| 877.556.5728
Email: national.accounts@daltile.com

DISCLAIMER

Dal-Tile does not manufacture installation products or tile cleaning/maintenance products. Dal-Tile provides the information contained herein to its customers as an information source only. The products identified in this website may have chemicals that cause reactions in certain individuals. Dal-Tile strongly recommends the use of safety glasses, respirators (masks) and gloves in handling any materials that contain chemicals.

Dal-Tile, in keeping with its Healthy Planet objectives, recommends the proper disposal of any scrap tile/stone, installation and/or maintenance products discussed herein.

Please contact the manufacturer directly, PRIOR to usage, to obtain proper handling instructions, application instructions and warnings concerning potential health hazards for any product contemplated for use. Dal-Tile also strongly recommends that you ALWAYS test a small area PRIOR to usage of any installation/tile/cleaning/maintenance product to determine whether the product you are about to apply serves its intended purpose.

Natural stone has its own unique qualities that not only distinguish it from man-made materials, but also should be considered in selecting it for a particular project. Stone is not manufactured; it is a product of nature. Blocks are removed from the quarry, slabs are cut from these blocks, and the slabs are further fabricated into the final stone to be installed. Each block is different; each slab is different. Skillful blending or matching of the dimension stone blocks, veneer panels, tops, etc., results in a beautiful blending of nature's variety and man's design. "Uniformity of material," when applied to natural stone, is a term of relative value that needs to be understood when making a selection.

To ensure your natural stone products will provide you with a lifetime of aesthetics and utility, proper maintenance is crucial. Natural stone products are porous by nature and require a different maintenance program than traditional ceramic tile.

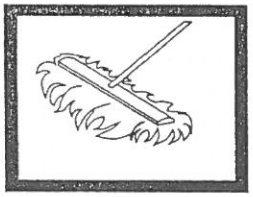
WOOD FLOORING

Operation & Maintenance

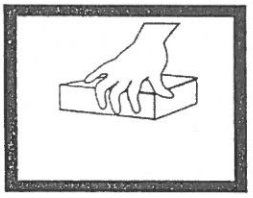
Taking Care of Your MFMA Maple Sports Floor

Wood is naturally porous and can absorb and release moisture. If the humidity in your facility rises, your wood floor will absorb that moisture, causing it to expand. If the humidity falls, your wood floor will release moisture, causing it to shrink. Many installations include expansion voids around the perimeter and around columns or floor inserts, plus expansion joints built into the floor surface. These features permit natural, normal expansion and contraction without damage to the floor. Too much moisture causes abnormal expansion which can lead to cupping or buckling of your floor. In abnormally dry conditions the wood will contract, leaving separations between flooring strips.

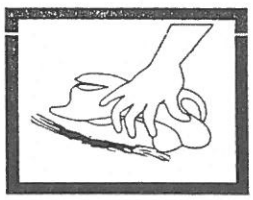
Five Steps For Proper Daily Maintenance:



1. **SWEEP THE FLOOR DAILY** with a properly treated dust mop. If the floor is used heavily, sweep it up to three times per day.

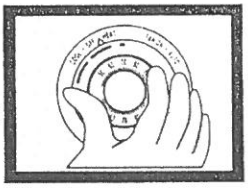


2. **WIPE UP SPILLS** and any moisture on the floor surface.

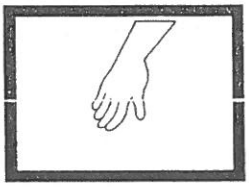


3. **REMOVE HEEL MARKS** using an *approved* floor cleaner applied with a soft cloth or a dusting mop.

4. **MAKE SURE THE HEATING/VENTILATING/ AIR CONDITIONING SYSTEM IS FUNCTIONING PROPERLY,** and set to maintain indoor relative humidities between 35% and 50% year round. In areas of consistently high or low outside humidity, a 15% fluctuation will not adversely affect the maple.



5. **INSPECT FLOOR FOR TIGHTENING OR SHRINKAGE.** During wet weather, check for water leakage around doors and windows. Remove debris from expansion voids.



Never Do the Following:

1. **NEVER** shut down the ventilating system in your facility for a prolonged period of time.
2. **NEVER** use household cleaning products or procedures. They can be harmful to the floor finish and to the wood and may also leave floors sticky or slippery, and potentially harmful to athletes. Your MFMA contractor
3. **NEVER** clean your MFMA floor using scrubbing machinery or power scrubbers which use water under pressure. Water is your floor's worst enemy!
4. **NEVER** attempt to modify or repair your MFMA sports floor without first consulting your MFMA contractor.

Humidity and Ventilation

Humidity and ventilation are critical for your new hardwood floor. 35% to 50% relative humidity is normally required for a long, trouble free life. If the humidity rises above 50%, prompt air circulation should be initialized; by opening interior doors, and windows, and activating the ventilation system. However, do not draw warm, moist air in from the outdoors, as excessive humidity will cause wood to expand. Summer months are especially critical. Inspect your wood floors regularly. If necessary, turn on the heating system. If less than 35% humidity level persists, use humidification to prevent excessive dryness, and possible wood shrinkage.

Excessive Tightening

When excessive tightening of the wood floor becomes noticeable, call your wood flooring contractor or manufacture @ **(1 800) 541-6819.**

Joint Separation

When unusually wide cracks begin to appear, call your flooring contractor or manufacture @ **(1 800) 541-6819.**

Control Air Conditioning & Humidity

Be sure that your air conditioning system is operating within the 35% to 50% range of normal *relative* humidity. Ventilation equipment should be available for year-round use.

Surface Moisture

Avoid excessive exposure to moisture during inclement weather by protecting your floors, exterior doorways, and entry areas. Floor protection should be checked thoroughly to assure no moisture is trapped underneath. Doors and windows should be closed tightly during rainy weather. All leaks must be corrected immediately.

Preventing Excessive Moisture

Any evidence of dampness within your building should be brought to the immediate attention of your architect/engineer. Interior drains and down-spouts should be properly installed and insulated to prevent development of excess condensation and moisture.

Expansion Joints

Expansion joints around the perimeter of your floor, at columns or inserts, should never be blocked or obstructed. They have been engineered into your floor to permit natural expansion and contraction caused by humidity changes, without causing damage to your floor. (NOTE: Certain floor systems may be designed to eliminate joints. Your flooring contractor can advise you if this is the case).

No fixtures, equipment, or bleachers should be lagged through wood floors into concrete, without first cutting wood away from lag bases and making provisions for expansion in floating type floor systems.

Steel Channel Floor Systems

Steel Channel Floor Systems are designed to contain expansion within the system. No perimeter expansion voids are necessary. Anchoring bleachers and equipment through the floor without expansion is permitted. This applies to Steel Channel Floor Systems ONLY.

Daily Care & Maintenance

Daily sweeping with a dust mop will keep the floor surface free of dust, grit, sand and abrasive particles.

Floor stains can be avoided by wiping spillage from surfaces immediately. Left unchecked, staining will occur due to moisture being absorbed into the wood.

Do not use scrubbing machines, or power machines that induce water under pressure.

Refinishing

Consult your flooring contractor**. 1 (800) 541-6819**

M F M A
Maple Flooring Manufacturers Association, Inc.

CHATTER MARKS

Chatter marks, in a very moderate form, are fairly common in new maple installations where drum or riding sanders are used in the flooring surface sanding process.

MFMA has no written policy or specification regarding the appearance or frequency of chatter marks in MFMA flooring installations. Generally speaking, minor chatter marks are apparent in scattered locations on most flooring installations. They are considered excessive if close-up inspection yields noticeable uneven or gouged areas of the flooring.

There can be a number of causes of chatter marks. The most common occurrence in the maple itself results from the use of drum or riding sanders on a surface with a degree of built-in "give." These are very different from chatter marks between layers of finish, which are typically seen when lighting is reduced and angled reflections are observed.

Between-coat buffing is desirable to ensure proper adhesion of successive coats of finish, and in fact is required under certain finish manufacturer warranties. Flooring appearance in these cases is akin to a fresh wax job on a black automobile -- when viewed at a specific angle under specific lighting conditions, marks are visible.

Chatter marks of this type are not damaging to the surface, nor will the marks impair the playability or performance of the system. Typically, the marks will soon begin to disappear as the oil-modified finish on the floor ambers with age.

The pace of ambering varies from product to product, but most color changes will take place between six months to fifteen months following the initial application. However, water-based finishes do not amber over time and if you think chatter marks are present, check the severity and contact your flooring installer.

If you have additional questions, please contact MFMA's Technical Director at 847-480-9138.

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FF/FL NUMBERS AND CONCRETE SLAB FLATNESS

The American Concrete Institute has adopted F-Numbers as its standard for the specification and measurement of concrete slab flatness and levelness.

Ff, or "flatness F-Number," defines the maximum floor curvature allowed over 24" (600 mm) computed on the basis of successive 12" (300 mm) elevation differentials. Fl, or "levelness F-Number," defines the relative conformity of the floor surface to a horizontal plane as measured over a 10' (3.03 m) distance. The higher the F-Numbers, the more level or flat the slab.

For reference, the Maple Flooring Manufacturers Association (MFMA) requires that the general contractor provide a concrete slab, troweled smooth and flat to a tolerance of 1/8" in a 10' radius for all gymnasium floors.

The MFMA does not acknowledge the use of F-Numbers to measure levelness/flatness tolerances in gymnasium slab applications. If an F-Number is specified for flatness, it must be at least the equivalent of MFMA's standard 1/8" in 10' radius tolerance, and the following conditions must be adhered to in order to meet MFMA's standard slab specification:

1. The F-Number measurement must be taken two (2) weeks prior to the maple floor installation.
2. The measurement process must include all construction joints over the entire concrete slab.
3. The MFMA flooring installer must be present during the entire measurement process.

If the above conditions are not met during all Ff/Fl Number measurements, MFMA does not recommend the acceptance of any Ff/Fl test results. MFMA's standard 1/8" in 10' radius flatness specification should be enforced.

If you have additional questions, contact your MFMA flooring contractor or MFMA's Technical Director at 847-480-9138.

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CONCRETE SLAB FLATNESS

The Maple Flooring Manufacturers Association (MFMA) requires the general contractor to provide a concrete slab troweled smooth and flat to a tolerance of 1/8" in a 10' radius, subject to the approval of the MFMA wood flooring contractor.

Labor and materials necessary to put the concrete slab in acceptable condition, (high areas ground down and low areas filled with appropriate leveling compounds) are the responsibility of the general contractor or concrete subcontractor.

No pea gravel, river gravel or slag aggregate can be allowed in a gymnasium concrete slab. The concrete strength range at the time of wood flooring installation should be between 3,000 P.S.I. and 3,500 P.S.I.

MFMA recommends the following procedures to be used by the general contractor or concrete subcontractor to provide the appropriate slab flatness requirement:

1. Plot a 5' grid on the slab surface.

2. Using a 10' straight edge, move it perpendicular to the plotted grid in both directions to identify all areas requiring correction. (Note: The use of a transit or laser alone does not include measurements between the grid points.)

3. All high spots should be ground level. Fill low areas with appropriate leveling compound. The fill must not become brittle, crack or lose bonding to the concrete slab. Fill must not be affected by loads applied to resilient pads if present. In anchored system applications, the fill must provide the required P.S.I. strength and allow anchoring without breaking or spawling when pins are installed. This is the responsibility of the general contractor or concrete subcontractor.

Note: Please request additional MFMA guidelines if Ff/Fl numbers have been specified.

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CONCRETE SLAB MOISTURE CONTENT

Installation of an MFMA flooring system shall not commence until the subfloor is determined to be "dry" by industry standard testing procedures. MFMA does not recommend testing for concrete moisture content within 60 days of pour. Vapor barriers or under-slab membranes will likely increase slab drying times. Concrete slab drying time is affected by:

- Type of construction
- Concrete formulation
- Location of the building
- Climatic conditions
- Power troweling

When conducting slab moisture testing, follow the manufacturer's recommendation on the number of tests that should be performed -- regardless of the age of the slab, document all tests. If the test(s) indicate a wet slab, delay installations of the maple system until specified conditions are met.

It is the general contractors' responsibility to provide a dry concrete slab within MFMA standards for moisture content and flatness. The flooring contractor shall verify slab conditions prior to the commencement of any maple flooring system installation to ensure compliance with flooring manufacturer specifications.

The only MFMA recognized method for reading concrete moisture levels within a slab is by testing the concrete slabs **relative humidity**. Please refer to the instructions of the manufacturer's relative humidity test kit for complete details on how to administer the test correctly. **MFMA recommends that the relative humidity level for a concrete slab for a non-glue-down maple floor system is 85% or lower and for glue down systems the concrete slab relative humidity level should be 75% or lower before installation.** For concrete relative humidity conditions above MFMA's recommendation consult your MFMA Sport Floor Contractor or your MFMA Manufacturer.

Concrete Relative Humidity Test

A. Relative Humidity Test (In-Situ Probe Test)
Use a prepackaged relative humidity testing kit (ASTM F2170-09) and follow the manufacturer's instructions. This test method involves measuring relative humidity levels inside of the concrete slab.

Pre-Tests

The following can be administered as pre-tests for testing the moisture content of a concrete slab but should not be used to confirm a concrete slab has dried to acceptable levels:

A. Polyethylene Film Test
Tape a 2' x 2' square of 6 mil clear polyethylene film flat to the slab, sealing all edges with moisture resistant tape. Suspend a 250-375 watt heat lamp 2' above the plastic film. After 24 hours, check the film -- if no condensation or "clouding" develops on the underside of the polyethylene, the test area shall be considered dry enough to install wood flooring.

B. Calcium Chloride Test
Use a prepackaged calcium chloride test (widely available) and follow the manufacturer's instructions. The Calcium Chloride Test measures the quantity of moisture passing through a concrete floor. This measurement is stated as pounds of moisture over a 1,000 sq. ft. area during a 24-hour period. An acceptable level is 4.5 lbs. or less.

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C. Electronic Concrete Moisture Meters
Due to the different types of electronic concrete moisture meters on the market, MFMA recommends following the manufacturer's instructions for proper on-site testing procedures.

If you have additional questions, please contact MFMA's Technical Director at 888-480-9138.

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CUPPING AND CROWNING

Cupping and crowning are two unfortunate results of excessive moisture in maple flooring.

All moisture content increases cause wood products to expand. Due to the cellular structure of flat-sawn maple flooring, expansion takes place primarily across the width of each strip. When flooring strips in a maple system take on enough moisture to expand and eliminate all available horizontal expansion space, individual boards will expand upward at the edges causing the surface condition commonly known as cupping. Cupping is caused by a moisture imbalance through the thickness of the maple — moisture contents in each strip of flooring are higher at the bottom than on the surface.

If cupping is severe enough, a condition known as "compression set" can occur. Compression set is caused by severe expansion pressure from excessive moisture causing individual boards to crush each other. Individual cells on the edges of each maple strip are permanently deformed or crushed, leaving excessive cracks and ragged edges when the material returns to its normal moisture content.

Crowning is the opposite of cupping. The center of each flooring strip is higher than its edges. Moisture imbalance is sometimes the cause of crowning if excessive moisture is introduced on the top of the floor due to roof leaks, spills or improper maintenance procedures. However, crowning is more commonly caused by sanding a cupped floor before the moisture content in the maple returns to a uniform and normal condition top to bottom.

Sanding while the flooring is still cupped will result in the loss of flooring material on the edges of each board. Once all excess moisture works its way out of the flooring materials, the maple will return to a flat condition - except where the original edges of the strips were sanded off, leaving voids at the edges of each flooring row.

Some slight cupping and/or crowning may occur naturally and is acceptable. The "bark" side of a maple log will shrink/swell more than the center of a maple log, and this minor expansion/contraction variation is more noticeable in areas of the country that experience significant seasonal moisture content changes and on floors containing wider face-width maple strips.

MFMA and all its member manufacturers have published specifications which prescribe optimum temperature and humidity ranges to ensure proper flooring performance and reduce the likelihood that cupping or crowning will ever develop on a maple floor.

MFMA recommends maintaining indoor temperatures between 55 and 75 degrees and indoor relative humidities between 35 percent and 50 percent year round. If the flooring materials are properly acclimated, a 15 percent fluctuation in indoor relative humidity will not adversely affect the maple. Excessive shrinkage and/or expansion may occur with indoor relative humidity variations in excess of 15 percent.

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DEAD SPOTS

In layman's terms, "dead spots" are locations on a sports floor where ball rebound is markedly less than on the majority of the rest of the surface. Many maple flooring systems exhibit vibrations and sound variations when a basketball is bounced at different locations. Often, areas where vibrations and sound variations are observed are mistakenly termed "dead spots." Provided the ball rebounds to a reasonably consistent height in comparison to other locations on the floor, areas where vibrations and sound variations are present do not typically qualify as true "dead spots."

Concerns about "dead spots" are most often expressed with floating subfloor configurations. Floating floors often exhibit sound and vibration variations due to the structure of the subfloor components. Ball rebound can be affected on all subfloor configurations due to seasonal changes in flooring moisture contents and resulting system expansion/contraction. It is not uncommon for a true "dead spot" to move or disappear as a flooring system adjusts to varying seasonal moisture conditions -- regardless of the subfloor system installed in the facility.

How do you confirm the presence of a true "dead spot" on your floor? For many years, MFMA and the entire sports flooring industry recognized the Wilson Sporting Goods ball bounce test as the standard for determining the presence of "dead spots" on a floor. With recent developments in performance engineering on flooring systems, the Wilson test method has been replaced as the recognized standard for ball rebound.

MFMA now recognizes the international D.I.N. #18032 Part 2 standards for a number of sports flooring performance issues. In most simple terms, the D.I.N. standards use a concrete floor as a base measurement for rebound performance, and compare rebound on all engineered surfaces as a percentage relative to results on concrete. Specialized equipment is used to time impact intervals of a ball dropped at multiple locations across an athletic surface, and calculations based on these impact figures result in a composite score for the floor. Variations from the composite figure are examined to determine the presence of any true "dead spots."

Most MFMA milling company members can provide laboratory-generated composite ball rebound figures for their flooring systems, and are available upon request for a fee to field test floors where "dead spots" are a concern.

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EXPANSION SPACING ("WASHER ROWS")

Wood is a hygroscopic material. When exposed to varying temperature and humidities, it will release or absorb moisture until it is at equilibrium with the surrounding atmosphere.

Maple floors in the United States experience moderate seasonal moisture content swings as a result of normal climate changes during the year. For example, in an average year, maple flooring in lower Michigan experiences a 3 percent to 4 percent variation in moisture content, depending on location. A 4 percent swing can translate just less than 1/32" of expansion/contraction for each 2 1/4" face-width board in a maple flooring system.

To ensure successful placement and performance, many contractors install intermediate expansion spaces at regular intervals across the surface to allow maple expansion as normal seasonal changes dictate. Intermediate expansion spacing (or "washer rows") is installed at the discretion of the flooring contractor based on flooring moisture contents at the time of installation and/or normal anticipated changes in moisture contents throughout the year. Although either 1/16" or 1/8" washers are commonly used, the 1/16" spacers require less movement of the flooring strips during expansion, and are less visually objectionable.

Please note that spacing and frequency of intermediate expansion spacing is directly related to the time of year that the flooring is installed, as well as the amount of acclimation time provided in the construction schedule. Until you have a firm construction timetable from the General Contractor, it is difficult to calculate the precise amount of expansion/contraction spacing that will need to be provided.

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FINISH AMBERING

Urethane oil finishes (the type most commonly specified for maple basketball, multipurpose and stage floors) as a group have a tendency to amber over time. The timing and degree of the ambering vary by product, but typically the greatest color change in the finish takes place between the sixth month and the end of the first full year of service.

In a repair situation, replacement boards will appear generally lighter in color than surrounding existing boards due to the ambering affect of the existing oil finish. The degree of variance is a function of the age and number of coats of finish on the original flooring. Color variations in the finish should be expected on a repaired floor immediately after repairs are completed. Most repair areas begin to blend in with surrounding flooring after several months and over time become imperceptible to the untrained eye.

MFMA recommends contacting your finish manufacturer(s) regarding the performance history of the specific product(s) installed. As a rule MFMA does not recommend tinting a repaired area to match existing floor coloring, and does not recommend staining maple flooring under any circumstances.

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FLOOR SQUEAKS

Flooring squeaks and "pops" are typically the result of the interplay between the tongue and groove in adjacent rows of strip flooring. Tongue and groove material rubs together during facility use, causing squeaking and popping sounds during either the loading or unloading phases of activity on the surface.

Maple flooring is a hygroscopic material. When exposed to varying temperatures and humidities, it will release or absorb moisture until it is at equilibrium with the surrounding atmosphere. This environmental interaction will cause individual flooring strips to expand or contract.

Regular seasonal flooring system movement combined with facility use at certain times during the year can result in the development of squeaks and "pops" in scattered locations when the match between tongue and groove in adjacent strips changes.

It is impossible to guarantee that any wood floor system will not develop squeaks or "pops" as a result of normal seasonal expansion and contraction. Due to resiliency requirements and multi-layer subfloor configurations, some systems tend to develop squeaks and "pops" more consistently at certain times of the year than other systems. Expansion/contraction cycles and resulting squeaking/popping difficulties can be minimized by maintaining a consistent indoor environment.

The Maple Flooring Manufacturers Association (MFMA) recommends maintaining air temperatures between 55 and 75 degrees, and indoor relative humidities between 35 and 50 percent year round. If flooring materials are properly acclimated, a 15 percent fluctuation in indoor relative humidity will not adversely affect the maple. Excessive shrinkage and/or expansion (and resulting squeaks/pops) may develop with indoor relative humidity variations in excess of 15 percent.

Remedies for noisy floors include the application of talcum powder in areas of occasional squeaks or pops, or the installation of additional mechanical fasteners (face-applied and plugged) in areas of persistent squeaks. The latter remedy may not be an option on certain floating floor systems.

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HUMIDITY

The Maple Flooring Manufacturers Association (MFMA) recommends maintaining indoor relative humidities between 35 percent and 50 percent, and air temperatures between 55 degrees and 75 degrees year-round. By limiting wide swings in atmospheric conditions inside the facility, you will reduce the expansion and contraction of the flooring system. If flooring materials are properly acclimated, a 15 percent fluctuation in indoor relative humidity will not adversely affect the maple. Excessive shrinkage and/or expansion may occur with indoor relative humidity variations in excess of 15 percent.

In buildings where air conditioning is not available, many facility managers make use of circulating or venting fans. Other facilities have vent windows or corridor doors available to open as needed to improve air circulation. Facilities without adequate HVAC equipment to regulate the indoor atmosphere, or those facilities that are "closed up" with no ventilation for long periods of time (summer breaks) are more likely to develop flooring problems directly related to environment.

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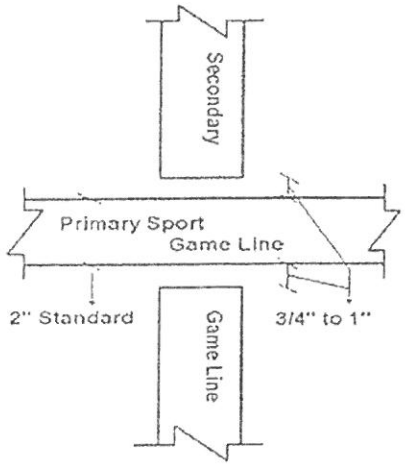
MAPLE FLOORS WITH MULTIPLE SPORT GAME LINES

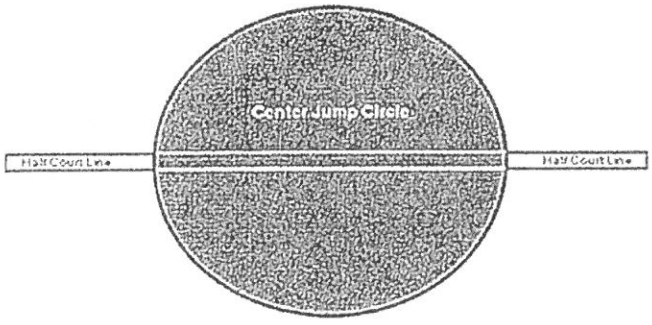


Example A

Maple floors with multiple sport games lines should have one main sport with consistent solid game lines. All sports game lines and solid painted lines should be broken and spaced from the main sport's game lines (Example A).

Sport game lines that intersect large solid painted areas can be installed using 2" wide shadow-bordered lines with ¼" wide borders (Example B).

MFMA does not recommend the use of masking, construction, electrical, duct or adhesive tape to mark temporary court boundaries on the surface of a finished maple floor. It is quite likely that the tape, when removed, will peel away layers of the floor's surface finish. Most tapes promoted for temporary markings have a different coefficient of friction than finishes applied to the maple playing surface, and can impact a person's ability to start, stop and pivot. Removing the surface paint/finish and exposing the maple can result in additional chipping and peeling of the remaining paint/finish in adjacent areas.



Example B

In addition, most commonly available tapes contain adhesive resins that can etch or stain the floor finish or even the maple flooring below the temporary markings.

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"PANELIZATION"

"Panelization" is a condition where localized excessive cracks develop between some strip flooring boards while adjacent boards remain tightly bonded together with no apparent separations. "Panelization" (or "sidebonding") is definitely not a new problem. It has, however, gained increasing attention as new EPA V.O.C. regulations have begun to affect the availability of traditional oil-based floor finishing products in many areas of the country.

While the development of "panelization" is certainly not limited to one brand of finish or to one particular subfloor design, the problem has been most closely associated with the use of water-based sealers and finishes on raw (untreated) maple strip flooring in areas of the country that experience distinctly different seasonal moisture conditions.

MFMA cautions installers and end-users that the use of some water-based finishes has produced a sidebonding effect that can result in localized excessive and irregular separations ("panelization") between maple flooring strips. We strongly recommend that end-users, project architects and specifiers consult with their flooring installer and finish manufacturer to obtain approved procedures for sealing and finishing a raw maple strip floor with water-based products.

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POLY BALLS

"Poly Balls" occasionally occur in new maple installations or during resurfacing or recoating of existing maple floors coated with oil based floor finish. The finish collects between flooring strips and cures at a much slower rate. With some new low-VOC oil-modified finishes the cure time has increased. Solvent-based finishes rely on exposure to oxygen to cure the film. A situation may occur when the finish is applied penetrates between the flooring strips.

Once the finish gets in between the flooring strips, it becomes more difficult for oxygen to react with the dryers in the finish. This allows the finish to remain partially cured for an indefinite period of time. When the moisture content of the flooring increases and closes the spacing between the boards , the finish that has not fully cured squeezes out from the side joints of the maple strips and appearing like little BB's on the surface of the flooring. When stepped on, poly balls flatten out or break open and leaving unsightly residue on the finish.

The floor should be swept daily to remove any poly balls that have broken free. A complete resurfacing is not necessary to remedy this minor problem. Contact your MFMA Installer or Finish Manufacturer for an evaluation for recommended remedial procedures. Extent and severity of poly balls varies dramatically, so a general recommendation is not possible.

The Maple Flooring Manufacturers Association (MFMA) recommends maintaining indoor relative humidities between 35 percent and 50 percent, and air temperatures between 55 degrees and 75 degrees year-round.

By limiting wide swings in atmospheric conditions inside the facility, you will reduce the expansion and contraction of the flooring system. If flooring materials are properly acclimated, a 15 percent fluctuation in indoor relative humidity will not adversely affect the maple. Excessive shrinkage and/or expansion may occur with indoor relative humidity variations in excess of 15 percent.

It is especially important to maintain this recommendation during the application of oil based floor finishing products. When conditions fall outside the recommended limits, finish oozing is a likely possibility, even if the floor was refinished several months before.

In buildings where air conditioning is not available, many facility managers make use of circulating or venting fans. Other facilities have vent windows or corridor doors available to open as needed to improve air circulation. Facilities without adequate HVAC equipment to regulate the indoor atmosphere, or those facilities which are "closed up" with no ventilation for long periods of time (summer breaks) are more likely to develop flooring problems directly related to environment.

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See Also: Humidity

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USE OF POWER SCRUBBER ON A MAPLE FLOOR

The Maple Flooring Manufacturers Association does not recommend the use of automated power scrubbing equipment for general, daily, or weekly maintenance of your maple floor.

The use of power scrubbing equipment may void warranties administered by your MFMA maple flooring system manufacturer and/or sport floor contractor. Before incorporating general maintenance procedures for your gym floor, the Maple Flooring Manufacturers Association strongly recommends reviewing your warranty and maintenance information provided to you by your MFMA sport floor contractor and/or MFMA maple manufacturer.

The use of automated power scrubbing equipment for general, daily, or weekly maintenance procedures may lead to specific side effects listed below.

Possible effects to maple floor boards

- Shaling
- Splintering
- Excessive shrinkage and expansion
- Splitting of individual pieces of wood flooring
- Raised or Uneven sides
- Cupping

Possible effects to the floor finish and paint

- Premature/excessive finish wear
- Chipping and peeling of paint and finish
- Swirl marks in the finish
- Dull finish appearance

Please direct all warranty questions and/or concerns to your MFMA sport floor contractor or MFMA maple flooring manufacturer. Please refer to the following web links below for contact information for your MFMA sport floor contractor and MFMA maple manufacturer.

Find a Sport Floor Contractor

MFMA Maple Mill Manufacturers

If you have any additional questions, please contact MFMA's Technical Director at 888-480-9138.

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CRACKING FLOORS

Wood is a hygroscopic material. When exposed to varying temperatures and humidities, it will release or absorb moisture until it is at equilibrium with the surrounding atmosphere.

The Maple Flooring Manufacturers Association (MFMA) recommends that the facility's environment be stable when the flooring materials arrive -- air temperature between 55 and 75 degrees and indoor relative humidity between 35 and 50 percent. In some cases, the maple should be stored in the room where it will be installed for a period of time to acclimate. Consult your MFMA installer for specific acclimation information.

After installation, maple flooring typically requires a year or two to stabilize -- through a complete cycle of seasonal changes. The floor will continue to adjust to environmental changes throughout its life span.

The appearance of shrinkage cracks during winter months is not unusual. These cracks will normally close in the spring and early summer, as the floor picks up moisture from the air. We do recommend the use of humidification/dehumidification systems if available to maintain proper humidity levels.

If cracks persist, and the indoor atmosphere has been maintained between 55 and 75 degrees and between 35-50 percent indoor relative humidity (or no more than a 15 percent fluctuation between highest and lowest average IRH), contact your flooring installer or the MFMA immediately.

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SOLID PAINTED AREAS ON MAPLE GYM FLOORS

Maple flooring is a hygroscopic material that expands and contracts due to the influences of moisture, temperature and humidity changes. The application of sealers, finishes and paints on the surface of an installed maple floor can only slow down the rate of vapor transfer between the maple flooring and its environment — such applications cannot stop the dimensional changes inherent in this natural product.

When maple flooring is installed, sanded, sealed, painted and finished during the summer months, the maple's moisture content is usually at its highest annual level in most regions of the United States. With the onset of winter comes dryer air and lower ambient air temperatures. Such environmental changes typically cause individual flooring strips to contract. With such movement, flooring strips that are painted a solid color (basketball keys, sidelines, and logoed areas) tend to exhibit more noticeable shrinkage due to the visual contrast between the solid colors and the cracks that develop between individual flooring strips. In some cases, the surface finish has been known to peel at the edges of individual painted flooring strips if the amount of shrinkage exceeds the elasticity of the paint or the finish. This is a direct result of the wood adjusting to a new environmental set point.

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Maple Flooring Manufacturers Association, Inc.

STAIN A MAPLE FLOOR?

Due to the extremely tight cellular structure and variable grain patterns inherent in northern hard maple, the Maple Flooring Manufacturers Association (MFMA) does not recommend staining or bleaching maple strip flooring under any circumstances.

While small areas of individual flooring strips may accept stain without difficulty, it has been our experience that much of the maple surface will appear uneven and "blotchy" following the application of most stains or bleaching agents.

MFMA strongly suggests contacting your floor finish manufacturer directly for specific tinting product recommendations and application instructions.

If you have additional questions, contact MFMA's Technical Director at 847-480-9138.

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SWIRL MARKS

Swirl marks, in a very moderate form, are fairly common in new maple installations where disc sanders are used in the flooring surface sanding process.

MFMA has no written policy or specification regarding the appearance or frequency of swirl marks in MFMA flooring installations. Generally speaking, minor swirl marks are apparent in some locations on most flooring installations. They are considered excessive if close-up inspection yields noticeable uneven or gouged areas of the flooring.

There can be a number of causes of swirl marks. The most common occurrence in the maple itself results from the use of disc sanders. These are very different from swirl marks between layers of finish, which are typically seen when lighting is reduced and angled reflections are observed.

Between-coat buffing is desirable to ensure proper adhesion of successive coats of finish, and in fact is required under certain finish manufacturer warranties. Flooring appearance in these cases is akin to a fresh wax job on a black automobile -- when viewed at a specific angle under specific lighting conditions, the marks are visible.

Swirl marks of this type are not damaging to the surface, nor will the marks impair the playability or performance of the system. Typically, the marks will soon begin to disappear as the oil-modified finish on the floor ambers with age.

The pace of ambering varies from product to product, but most color changes will take place between six months to fifteen months following the initial application. However, water-based finishes do not amber over time and if you think swirl marks are present, check the severity and contact your flooring installer.

If you have additional questions, please contact MFMA's Technical Director at 847-480-9138.

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WOOD TREATMENTS

Wood preservatives and fungicides applied to wood products is a common practice for wood products exposed to the elements. It is essential for keeping exterior wood from rotting. However, wood products used indoors, like maple floors and subfloors components, do not need these treatments as they are not intended to be exposed to harsh conditions.

The MFMA no longer recommends Woodlife Products for use on maple floors or wood preservatives or fire retardants on subfloors associated with maple floors.

MFMA does not recommend pressure treating maple flooring or any wood subfloor components with water responded compounds (fire retardant compounds, wolman salts) for two reasons. First, the application of such compounds in maple flooring or wood subfloor components forces the treating compounds and excess moisture into the cells of the material causing them to swell beyond recommended limits. Second, the application of such compounds in maple flooring or wood subfloor components increases the susceptibility to wide moisture content variations due to the inherit nature of the compounds.

Using wood preservative and fungicides on interior wood products can hurt the environment due to gases released during the application, drying and eventual disposal of maple flooring and subfloor wood products.

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TERRAZZO

Operation & Maintenance