

This Installation Instruction covers all Engineered Flooring manufactured by Nydree Flooring, LLC. All glue down installations require the use of Nydree Flooring MRA1585 Moisture Cured Urethane Adhesive. (Refer to label on container for complete details.) Nydree highly recommends the use of NWFA certified professionals to install all Flooring.

PLANK STORAGE PRIOR TO INSTALLATION

- Flooring must be stored in an enclosed and well-ventilated building. Never store flooring outdoors. Do not store flooring directly on warehouse floors. KEEP FLOORING WRAPPED IN POLYETHYLENE BAG AND ON SKIDS. The storage area within the building should be clean and dry. Ideally the warehouse will be temperature and humidity controlled. Temperature range: 60-90 °F (16-32 °C) and Relative Humidity: 30-55%.
- Do not store flooring outside in non-ventilated 18-wheel truck trailers. Extreme heat developed during the summer months could distort the flooring.
- Nydree Flooring, LLC can not be responsible for damage to flooring caused by improper storage.

ACCLIMATION

Each pallet of Nydree Engineered Hardwood Flooring will arrive to the job site wrapped in a polyethylene bag and typically shrink-wrapped to maintain the flooring at its most desirable installation moisture content. If material needs to be inspected prior to flooring installation, carefully remove the shrink-wrap and lift off polybag. After inspecting, put polybag back over pallet of flooring and secure with tape until installation. DO NOT REMOVE NYDREE ENGINEERED HARDWOOD FLOORING FROM THE POLYBAG UNTIL THE DAY OF INSTALLATION. Flooring that has not been used within a day should be returned to the polybag until ready for installation. No acclimation time is needed or desired when installing flooring. Removing the polybag prior to installation could lead to plank distortion (bowing, crowning, twisting, cupping). Temperature of material and adhesives should be acclimated to 60° - 90°F (15° - 32°C).

DIRECT BOND INSTALLATION METHOD

Note: Install finished flooring from multiple cartons throughout all skids of material to obtain a random distribution of the natural color variation which is an inherent characteristic of genuine hardwoods. To prevent damage, the flooring should be installed as the last step of the construction project.

Preparation

- A. All Subfloors
- Nydree Engineered Hardwood Flooring can be installed on, above, or below grade.
 - Permanent HVAC must be in operation (2 weeks minimum) and permanent lighting must be provided prior to flooring installation. This is very important when performing any type of moisture test on a concrete slab. (Salamanders are not acceptable)
 - Job site temperature should be 60° - 90°F (15° - 32°C). The ideal relative humidity for flooring installation is between 30 and 55%, prior, during and after installation is completed. Keep in mind that if the relative humidity drops below 30% for extended periods, the flooring could shrink causing surface splits and gaps.
 - Do not install flooring until all other significant construction work (dry-wall) is complete. Moisture producing activities such as drywall, concrete, masonry, painting and grouting must be complete and cured.
 - Use Portland cement-based filler to patch saw-cut control joints (score marks in concrete), cold/construction seams (concrete), cracks, holes, voids, low spots, depressions, grooves, indentations and defects of small areas. Fill level with the surrounding surface. Do not fill or bridge concrete slab expansion joints. These joints must be carried through the flooring surface using an expansion joint covering system. **DO NOT skim coat large areas with extremely thin layers of patching compound.** Sand and/or scour patched areas smooth after material is fully cured according to manufacturer's instructions. Use only quality materials and Portland cement-based patching products. Suggested patching products include: Ardex Feather Finish®, Ardex SD-P®, Bostik UltraFinish™, and Bostik Webcrete® 95 or 98.
 - Substrate must be clean, sound, and free of wax, dirt, dust, mold, mildew, loose material, grease, oil, coatings, paint, rust, asphalt cutback, old adhesives (carpet), weak powdery concrete, weak powdery gypsum, adhesive removers, efflorescence (white soluble salt deposits on concrete surfaces) and other contaminants that will interfere with the bonding of the adhesive. Scouring using 3 ½ (20 grit) open coat sandpaper can remove most of these materials.
 - Verify that substrate is flat to within 3/16" in 10 ft. (5mm per 3m). The substrate must be free from cracks, holes, voids, ridges, projections and other defects impairing performance or appearance.
- B. Concrete Slabs
- On-grade/Below-grade slabs: Subslab moisture retarder - Minimum 6 mil (0.15mm) , preferred 10 mil (0.25mm) intact, polyethylene vapor retarding membrane beneath slab.
 - Acrylic Infused Engineered Flooring should not be installed on any concrete subfloor where there is hydrostatic pressure or standing water (must be dry to the touch).
 - Test concrete for surface contaminants such as sealers and curing compounds, etc., by performing a water absorption test. Place a few drops of water on the concrete surface. If the water beads up like water on a recently waxed car, then a surface contaminant exists. This surface contaminate must be mechanically removed prior to installing flooring. Determine the depth of the contaminant by sanding or grinding the concrete surface until it freely absorbs water.
 - If a sealer, curing compound, bond breaker, densifier/hardener, prior adhesive or other surface coating has been applied, it must be completely "ground" off by diamond grinding, shot blasting or scarifying. Whenever possible, grind a concrete subfloor to tolerance rather than fill. Sweep and vacuum substrate after grinding or scouring. **DO NOT use sweeping compounds** as most contain oils or waxes which will interfere with the flooring adhesive bond.

- Concrete substrates should NOT be glassy smooth and reflective. Concrete should have a minimum surface profile of ICRI CSP1-3, similar to that of a broom finished concrete floor for MRA1585 to properly penetrate and bond.
- New slab cure min. 30 days, preferably 60.
- Temperature of concrete should be above 60°F(15°C), but should not exceed 90°F(32°C).
- Concrete must be clean, sound, free from contaminants and dry regardless of concrete age, history or grade level. Slab concrete moisture test results determine the application rate of the MRA1585 adhesive.

Calcium Chloride results up to 15 lbs./1000 sf/24 hrs and in-situ Relative Humidity results up to 85%.
The adhesive is applied with a 3/16" x 5/32" V-Notch trowel at a rate that does not exceed 50 square feet per gallon.

Any Calcium Chloride result **greater** than 15 lbs./1000 sf/24 hrs or any in-situ Relative Humidity result **greater** than 85%.
The adhesive is applied with a 1/4" x 3/16" V-Notch trowel at a rate that does not exceed 35 square feet per gallon.

The protocol for Calcium Chloride testing (ASTM F1869) and in-situ relative humidity testing (ASTM F2170) must be followed precisely for warranty consideration. If both tests are performed, the in-situ RH test is always the qualifying standard. Calcium Chloride Test kits are available from Nydree Flooring. If there is concern over any excessive future subfloor moisture, always use the 1/4" x 3/16" V-Notch trowel application rate.

- Concrete ph level is not a concern using MRA1585 adhesive.

C. Self-Leveling Underlayments

- If self-leveling underlayments are used, they must dry sufficiently (Run moisture tests) and dry hard (not dusty/powdery). Self-leveling underlayments must have a compressive strength equal to or greater than 2000 psi.
- Gypsum-based self-leveling underlayments must be dry, "above-grade" installations where the gypsum has dried hard (not dusty/powdery), and the Gypsum has a compressive strength equal to or greater than 2000 psi. **Gypsum-based underlayments must use in-situ RH moisture testing.**
- Suggested products include: Ardex K 15[®], and Bostik SL-150[™].
- Nydree Flooring, LLC can not be responsible for strength, adhesion, or general performance of underlayments as proper compounding and preparation of subsurface are the responsibility of the installer.

D. Plywood Overlays

- Good quality plywood, properly secured, makes an excellent subfloor.
- When using plywood as an underlayment 1/4" (6.4mm) or thicker APA-CDX grade plywood is recommended.
- Follow underlayment manufacturer's installation instructions for spacing and fastening. Do not intentionally leave spacing or gaps between panels. Gently butt panels together. Stagger plywood underlayment joints avoiding subfloor seams and leave 1/4" (6.4mm) expansion space at all vertical obstructions. Ensure that all nail/staple/screw heads are set flush with or below surface. Sand high edges of plywood underlayment joints level.
- Verify that the plywood is clean, acclimated (24-48 hrs.) and dry. The reading on any wood moisture meter should be less than 12%.

E. Structural Suspended Plywood or AdvanTech[®] T&G Subfloors

- Use 5/8" (16mm) or 3/4" (19mm) APA-CDX grade (or better) underlayment plywood when joists on center are 16" (40.6cm) or less. Use 3/4" (19mm) APA-CDX grade plywood or 23/32" (18.3mm) AdvanTech when joists on center are 19.2" (48.8cm) or less. Allow 1/8"-1/4" (3.2-6.4mm) expansion space between sheets with staggered joints. When installing, leave 1/4" (6.4mm) minimum expansion space at all vertical obstructions. Always install panels with long dimension perpendicular to supports.
- OSB Exposure 1 (underlayment grade) also makes a suitable structural substrate for glue down installation. Be sure the underlayment is thoroughly fastened.
- Ensure that all nail/staple/screw heads are set flush with or below surface. Sand high edges of plywood or underlayment to level out high spots and to also remove any contaminants.
- Verify that the underlayment is clean, acclimated(24-48hrs.) and dry. The reading on a wood moisture meter should be less than 12%.

F. Existing Engineered Wood Flooring

- Must be sanded smooth to remove varnish or urethane finish, high edges, chips, or other contaminants.
- Must be clean, structurally sound, well bonded, flat to within 3/16" in 10 ft. (5mm per 3m), well nailed and/or glued, free of voids and with joints that do not exceed 1/4" (6.4mm). Ensure that all nail heads are set flush with or below surface.
- Install perpendicular to existing engineered wood flooring, whenever possible.
- Verify that the existing wood subfloor is dry. The reading on any wood moisture meter should be less than 12%.

G. Acoustical Underlayments

- Glued Down Eco-Silencer HD[™] FOF is the preferred acoustical underlayment for all Nydree Engineered Flooring (available through Nydree customer service). See separate installation instructions.
- Glued Down Cork Underlayment (AcoustiCORK, WECU Soundless, Bostik Natural Cork), Ecore-QTscu, Impacta ProBase (92% post consumer recycled content) and Dura-son 3.5mm provides a suitable sound barrier for all Nydree Engineered Flooring products. Glue down acoustical underlayment according to manufacturer's installation instructions.
- If any Calcium Chloride test is equal/greater than 3 lbs. or any insitu relative humidity test is equal/greater than 75%, then acoustical underlayment can not be used unless an approved moisture mitigation system is applied first. Koster VAP I[®] 2000 is highly recommended.

H. Radiant Heated Floors (Hydronic)

- All concrete should be dry (Run moisture tests).
- System should be running for at least one week prior to flooring installation regardless of the season. Make sure there are no leaks in the system that could damage the flooring.
- Turn off radiant heat system at least 4 hours prior to starting installation and wait at least 3 days after the flooring installation to turn the radiant heat system back on. Flooring and adhesive should never come in direct contact with heating tubes.
- Maximum boiler temperature of 110°F (43°C). Maximum slab/floor temperature of 85°F (29°C).
- It is important that the relative humidity be maintained between 30 and 55% when radiant heating is used to prevent splitting and gapping of the flooring.
- Maxxon Therma-Floor radiant heating system is an acceptable subfloor.

- I. Terrazzo, Marble/Ceramic/Clay Tile and Epoxy Poured Floors
- Terrazzo, marble, ceramic tile, clay tile and epoxy poured floors provide a suitable surface provided they are flat and structurally firm and dry. (Remove a piece of material to allow moisture tests to be run).
 - Any waxes, sealers, or polishes present must be entirely removed by stripping, rinsing and scouring before installing finished flooring. NOTE: Scouring, screening or sanding, by itself, is NOT effective for wax removal. These surfaces must be stripped.
 - If surface is irregular, grind smooth and fill holes, chips, and seams (only as necessary).
 - Any glazed or very smooth surfaces should be scoured with 3 ½ (20 grit) open coat sandpaper.
- J. Existing Vinyl Tile or Sheet Vinyl Floors
- Existing synthetic flooring, such as vinyl tile or sheet vinyl must be well bonded to the subfloor and show no signs of moisture. The vinyl also must be stripped and abraded with a butyl-based stripper using a coarse (green or black) buffing pad. Stripping will remove waxes, coatings and foreign materials. The green or black pad will abrade the surface and provide increased bond strength. **CAUTION! Do Not Sand, Scrape, Drill, Saw, or Beadblast Vinyl Asbestos Tile (VAT).** If the vinyl or tiles are loose, damaged or in poor condition, completely remove them and clean the vinyl adhesive from the subfloor. If the vinyl can not be removed and the subfloor is concrete, shooting down 5/8" (16 mm) or 3/4" (19mm) APA-CDX grade plywood or equivalent will provide an acceptable subfloor. If the subfloor is wood, 1/4" (6.4mm) CDX grade Underlayment plywood or thicker is recommended.
- K. Metal Subfloors (Aluminum, Steel and Stainless Steel)
- Scour all paint, dirt, contaminants and the surface of the metal with 3 ½ open coat (20 grit) paper using a floor machine or equivalent. The steel should have a faint metallic sheen. Sweep and vacuum clean.
 - Wash the metal with one of the following properly diluted neutral cleaners: Clean Scrub® (Hillyard), Once n' Done (Armstrong), or Stride (Johnson).
 - Rinse three times with clear water. Allow to dry thoroughly.
 - As steel is not a conventional substrate, we strongly recommend testing a small area with the above procedure.
 - Test adhesion of the flooring to the steel after at least 7 days.
 - Nydree Flooring, LLC can not be responsible for inadequate adhesion to metal as proper preparation of the substrate is the responsibility of the installer.

Installation – MRA1585 Glue Down

Note: Prior to spreading MRA1585, it is mandatory to "dry lay" a portion of the initial course to verify proper layout and to visually inspect the flooring. Verify that the flooring is the correct species, color, width, grain, finish (gloss level) and quality (fit) prior to installation. If there is any doubt, do not install the flooring. Contact Nydree Flooring immediately. Nydree Flooring can not be responsible for installation of the wrong type of flooring or for installing obvious defects.

- A. Snap a chalk line at plank width plus required expansion spacing off of wall. The required expansion spacing is 1/4" (6.4mm) at all vertical obstructions when flooring run is less than 25 feet (7.6m). 1/2" (12.7mm) expansion spacing at all vertical obstructions when flooring run is >25 to 50 feet (7.6 to 15.2m). For runs >50 feet to 100 feet (15.2 to 30.5m) in either the length or width direction, drop in a premolded expansion strip about half way through the flooring run and allow 1/2" (12.7mm) expansion spacing at the start and end of the run of flooring. Alternatively allow 1" (25.4mm) expansion spacing at all vertical obstructions when flooring run is >50 feet to 100 feet (15.2 to 30.5m). Adjust line accordingly if wall is not square and straight in relation to the rest of the area.
- B. Depending on concrete slab moisture content use the appropriate V-notched trowel. Spread adhesive either using a 3/16" x 5/32" V-notched trowel, held at a 45 degree angle (15 lbs. or less, 85% in-situ RH or less) or a 1/4" x 3/16" V-notched trowel (>15 lbs. or >85% in-situ RH). All non-concrete based substrates, where moisture is not an issue, utilize the 3/16" x 5/32" V-notched trowel. 100% of the substrate must be covered with MRA1585 to protect against damage from subfloor moisture. Install flooring immediately into the "wet" adhesive. Do not allow adhesive to remain "open" more than 20 minutes. Do not let adhesive dry to the touch. Occasionally lift a piece of flooring to assure vapor retarding adhesive is achieving at least 85% transfer between the substrate and flooring. If not, use the larger 1/4" x 3/16" V-notch trowel or patch/level the uneven subfloor. Spread adhesive only over surface that can be finished within cure time of adhesive. Adhesive that has over-cured not allowing 85% transfer to the flooring must be removed and new adhesive applied.
- C. Aligning carefully along the strike line, lay 3 pieces of flooring lengthwise in the first course. Begin the second course by cutting off the first piece to an appropriate length or utilize the random length pieces included in each box to establish random butt joint location. End joints should be staggered at least 6" (15cm).
- D. Complete four courses by placing all pieces in the fresh adhesive. When placing a piece, lower the flooring into position as close to the adjacent plank as possible. Fit into place the remaining distance. Begin the next course by offsetting the butt joints. As described above, fit the ends tightly without gaps. Again, stagger the butt joint location when beginning the third and fourth course.
- E. Take an 8 foot (2.5m) straight edge and check the alignment along the whole lay just completed. Tap the straight edge lightly with a hammer to adjust. It is not necessary to jam the flooring tightly. Use wood wedges (remove later) at walls to prevent shifting.
- F. Keep trowel clean when not in use. This will prevent cured adhesive from plugging trowel notches. If trowel notches become clogged with adhesive or become worn, clean to allow proper coverage, replace trowel or install a new notched blade on Injecta-Notch trowel handle.
- G. To keep Nydree Engineered Hardwood Flooring in place during installation, we suggest using removable wedges, tack down strips, flooring clamps or 3M™ #2080 Blue Adhesive Tape. **WARNING!!! Do not let the 3M #2080 Blue Adhesive Tape on the flooring surface for any longer than 24 hours. Tape may leave a residue on the finish upon removal.**
- H. **It is extremely important to immediately remove excess adhesive while it is still fresh.** Use mineral spirits (low odor, no residue) and a clean, white, cotton cloth as the flooring is being installed or use Sentinel 922 Adhesive Remover Wipes. If solvents are used to facilitate partially cured mastic removal (under 24 hours), they must be wiped off surface promptly when mastic softens. Approved solvents to remove partially cured adhesive include Goof Off®, mineral spirits, or equivalent. Do not use acetone, ketones, ethyl acetate, methylene chloride, or lacquer thinners to remove mastic as they will damage the flooring. A stiff plastic putty knife may be helpful to remove large globs of glue. Many have found that a Mr. Clean® Magic Eraser® is helpful at removing partially cured or cured smudges. **Cured adhesive (over 24 hours) is almost impossible to remove. As a last resort, Oil Flo 141 available through Taylor Tools (www.taylortools.com) or a local distributor has been found to effectively dissolve cured MRA1585 adhesive.**
- I. Roll floor with 150 pound (70kg) roller (100 pound plus 50 pound attachment) 30 minutes after spreading adhesive, but not later than 60 minutes. Be sure to roll in both directions (with plank grain and across grain). Make sure that the roller is clean and free of debris. Also make sure all adhesive is cleaned from the flooring surface prior to rolling. If there are concerns that the flooring is not in complete contact with the adhesive, weighting the floor while the adhesive cures is very effective.

- J. Flooring should be protected from traffic for 24 hours. Finished flooring must be protected from abuse by other trades. Use FortiBoard™ Floor Protector Paper (available thru Nydree), heavy kraft paper, cardboard, or equivalent. Do not use plastic or poly. Make sure the floor has been cleaned thoroughly (swept, vacuumed and dust mopped) prior to protecting, so that the flooring surface will not be scratched by debris. Avoid covering the installation with protective paper or equivalent for at least 24 hours. If the floor is covered, consider covering the entire flooring installation, since some species are light-sensitive and uncovered areas may change color. When taping paper or sheets together, tape them to each other, not to the floor. Some flooring material (attic stock) should be set aside in case future repairs are needed.

CLEAN-UP & MAINTENANCE

A. Guidelines

- Remove protective covering following completion of work by other trades. It is important to follow good housekeeping policies.
- Sweep, vacuum and dust mop flooring on a regular basis to keep unwanted particles from scratching the flooring surface.
- Place mats or throw rugs at doorway exteriors, interiors & pivot areas to help prevent the tracking and grinding of grit, dirt, sand and moisture into the finish. Dirt can be ground into the floor surface and scratch the finish. Excess moisture can damage the wood fiber. Rugs and mats must be made of a breathable material and non-marking rubber to prevent moisture entrapment and finish discoloration.
- Never use excessive amounts of water for cleaning. Never pour any cleaner directly onto flooring. Never wet mop with string type mop. Continually wet mopping a hardwood floor means the floor is continually expanding and shrinking. The resulting stresses and movement of the flooring can cause abnormal and unsightly checking and cracking.
- Never use wax, oil-based soap, multi-purpose cleaners, window cleaner, vinegar, furniture polish or other household cleaning detergents on Nydree Engineered Hardwood Flooring. Remember to wipe up spills immediately.
- Use fabric-faced glides or large (at least 2" in diameter), broad surfaced (at least ¾" in width), barrel-type, double wheel casters (non-marking rubber or polyurethane) on chairs and furniture legs to prevent scratching, scuffing and other damage. Keep glides and casters clean by inspecting regularly to prevent scratching. Replace fabric-faced glides as needed.
- Keep in mind that high heels, cleats, and sports shoes can indent the floor surface.
- When moving heavy furniture, equipment, etc., use roller casters and be sure to protect the wood flooring with heavy cloth or cardboard.
- Keep HVAC systems set at 70°F (21°C) and 30-55% relative humidity. Use a humidifier in the winter months to keep all wood movement and shrinkage to a minimum.
- The sun's UV rays and strong artificial lighting can discolor some hardwood flooring species over time. If possible, periodically rearrange rugs and furniture to allow for even aging of the flooring. Some species darken (Cherry) and some species will amber over time (Oak).

B. Maintenance Products

Sealed with Standard Pedestrian 2.0 Urethane Finish

Bona Pro Series Hardwood Floor Cleaner

Nydree Flooring Dust Mop Treatment

Carefully follow the label directions of all maintenance and remedial products. Use only serviceable and clean equipment.

C. Maintenance Procedures

Sealed with standard Pedestrian 2.0 Urethane Finish

- Routine, regular maintenance, daily if necessary, should include sweeping, vacuuming or dust mopping with Nydree Flooring Dust Mop Treatment. Walking on a dusty or dirty floor is the fastest way to damage the finish.
- Periodically clean the floor with Bona Pro Series Hardwood Floor Cleaner.

Small Installations

Lightly mist a small area and immediately wipe clean with microfiber cleaning pad. Replace microfiber cleaning pads whenever they become heavily soiled. Pads are machine washable. **Important Tip:** To avoid redistributing dirt and contaminants back onto the floor, rinse microfiber cleaning pads periodically with clean water. THOROUGHLY wring out cleaning pads before using on the floor.

Large Installations

Pour Bona Pro Series Harwood Floor Cleaner into a bucket. Soak several large towels in the solution, making sure they are thoroughly wet. THOROUGHLY wring out the towels to remove excess moisture. Wrap a towel around a push broom and tack the floor. (Tacking means to clean until no dirt/dust is left on the floor or towel). To prevent redeposit of dirt and oil, refold towel using clean sides as needed. Pay special attention to corners. Repeat the procedure in each area of the floor until the entire floor has been cleaned.

Commercial Installations – Option #1: With a 175 rpm floor buffer and a white polishing pad, LIGHTLY mist an 8' x 8' area with Bona Pro Series Hardwood Floor Cleaner. Periodically replace the buffing pad as it becomes soiled. Do not allow the cleaner to dry before buffing. **Option #2:** Use Bona Power Scrubber or Autoscrubber using Bona Pro Series Hardwood Floor Cleaner or Bona Deep Clean Solution. Make sure that the water setting is on low.

Spot Cleaning Apply cleaner to a clean cloth and scrub the area by hand.

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