Product	
Supplier	Flooring2
Product Type	Luxury Vinyl
Number	MRII
Name	Miraculous II

Luxury Vinyl (Glue-Down) Installation Guide

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> **Last Updated:** January 2026

Legal Disclaimers

> **IMPORTANT: READ BEFORE INSTALLATION**

Limitation of Liability
This guide provides general installation information only. We are not responsible for installation errors, product damage, personal injury, or property damage resulting from the use of this guide. Actual results depend on site conditions, installer skill, and adherence to all applicable codes and standards.

General Information Notice
This guide covers glue-down installation methods for luxury vinyl tile (LVT) and luxury vinyl plank (LVP) products. Product specifications may vary between product lines.

Professional Consultation Recommended
We recommend consulting a licensed flooring professional before installation, especially for complex projects, commercial applications, or situations involving structural modifications.

Assumption of Risk
By proceeding with installation, you assume all risks associated with flooring installation, including but not limited to physical injury, property damage, and voiding of product warranties due to improper installation.

Safety Warnings

Regulatory Compliance

Before beginning any flooring installation, ensure compliance with:

- **OSHA Standards** - Follow workplace safety requirements (29 CFR 1926 for construction)
- **EPA Regulations** - Proper handling and disposal of materials
- **Building Codes** - Comply with International Building Code (IBC) and International Residential Code (IRC)
- **Lead Safety** - For structures built before 1978, follow EPA RRP Rule requirements
- **Asbestos Requirements** - For structures built before 1981, have existing flooring tested before removal

Personal Protective Equipment (PPE)

Equipment	When Required
Respiratory Protection	N95 mask when cutting, sanding, or working with adhesives
Eye Protection	Safety glasses during all cutting and installation
Hand Protection	Work gloves when handling materials and adhesives
Knee Protection	Knee pads for floor-level work

Health Hazards

> **Chemical Exposure (Adhesives):**
>
> • Work in well-ventilated areas when using adhesives and primers
> • Review Safety Data Sheets (SDS) for all chemical products
> • Do not eat or drink during installation
> • Wash hands thoroughly after handling adhesives
> • Store chemicals according to manufacturer guidelines
>
> **Dust Exposure:**
>
> • Use dust collection when cutting vinyl
> • Keep work area clean to minimize airborne particles
> • Vinyl dust can irritate respiratory system
>
> **Physical Strain:**
>
> • Use proper lifting techniques for material boxes
> • Use knee pads to reduce knee strain
> • Take regular breaks during installation

Emergency Procedures

Situation	Action
Adhesive Contact (Skin)	Wash immediately with soap and water for 15 minutes
Adhesive Contact (Eyes)	Flush with clean water for 15 minutes, seek medical attention
Inhalation of Fumes	Move to fresh air immediately, seek medical attention if symptoms persist
Cuts or Injuries	Apply first aid, seek medical attention for serious injuries

Emergency Contacts:

• Poison Control: 1-800-222-1222
• Local emergency services: 911

Pre-Installation Preparation

Tools and Materials Needed

Installation Tools:

• □ Tape measure (minimum 25 ft / 7.6 m)
• □ Chalk line or laser level
• □ Utility knife with extra blades
• □ Straight edge (48" / 122 cm minimum)
• □ Notched trowel (per adhesive specifications)
• □ 75-100 lb floor roller
• □ Vinyl tile cutter or saw
• □ Scribe/compass for irregular cuts
• □ Pencil or marking tool
• □ Hand roller for edges and seams

Subfloor Preparation:

• □ Floor scraper
• □ Sanding equipment (if needed)
• □ Portland cement-based leveling compound
• □ Primer (MAPEI primer appropriate for subfloor type)

Materials:

• □ Luxury vinyl flooring (add 10% for waste and cuts)
• □ **Adhesive: Holdfast HF99, MAPEI ECO 399 or MAPEI ECO 373 only**
• □ **Primer: Appropriate MAPEI primer for subfloor type**
• □ Seam sealer (if required by manufacturer)
• □ Transition strips

Safety Equipment:

- □ Safety glasses
- □ Work gloves
- □ Knee pads
- □ Dust mask or respirator
- □ Hearing protection (when cutting)

Room Preparation

1. **Remove furniture and appliances** - Clear the entire installation area
2. **Remove existing flooring** - If applicable, remove and dispose of old flooring properly
3. **Remove baseboards and transitions** - Label for reinstallation if reusing
4. **Clean the subfloor** - Remove all debris, dust, adhesive residue, and contaminants
5. **Undercut door frames** - Use an oscillating tool to allow flooring to slide underneath
6. **Ensure room is temperature controlled** - HVAC must be operational

Subfloor Requirements

IMPORTANT: CRITICAL RESTRICTION: Glue-down luxury vinyl is NOT approved for installation over particle board subfloors. This restriction is absolute and cannot be waived.

Flatness Specification:

- Maximum variance: 3/16" over 10 feet (4.7 mm over 3 m)
- Sand down high spots
- Fill low spots with Portland cement-based leveling compound

Acceptable Subfloor Types:

- □ Concrete (fully cured, minimum 60 days)
- □ Plywood (minimum 1/4" / 6 mm exterior grade over solid base)
- □ OSB (minimum 1/4" / 6 mm over solid base)
- □ Gypsum (gypcrete, Gyp-Crete, or gypsum-based self-leveling underlayments) with a minimum PSI rating of 3000. When fully dry and cured. Approved primers and adhesives required.
- □ Existing vinyl flooring (if fully bonded, single layer, no cushion)
- □ Existing ceramic tile (if fully bonded and level)

NOT Acceptable:

- **Particle board (absolutely prohibited)**
- Cushion-backed vinyl
- Carpet or carpet pad
- Unsealed or dusty concrete
- Subfloors with active moisture problems

Moisture Testing Requirements:

Subfloor Type	Test Method	Maximum Reading
Concrete	Calcium Chloride (CaCl)	3 lbs per 1,000 sq ft / 24 hrs
Concrete	Relative Humidity (RH)	85% RH
Wood	Pin-type moisture meter	12% moisture content

> **Note:** If moisture readings exceed limits, moisture mitigation is required before installation.

Climate Requirements

Required Conditions:

- Temperature: 65F - 85F (18C - 29C)
- Relative Humidity: 35% - 55% RH
- Maintain conditions 48 hours before, during, and 48 hours after installation

Acclimation:

- Store flooring in installation area for 48 hours minimum
- Keep boxes closed until ready to install
- Stack boxes flat, off the ground
- Maintain room temperature during acclimation

Adhesive Requirements

REQUIRED PRODUCTS - NO SUBSTITUTIONS

Required Products

Product	Specification
Adhesive	MAPEI ECO 399 or MAPEI ECO 373
Primer	Appropriate MAPEI primer for subfloor type
Application	Troweled only (rolling NOT permitted)

Application Method

1. **Apply primer first** - Allow to dry completely per MAPEI specifications
2. **Trowel adhesive** - Use recommended notch trowel size
3. **Do NOT roll adhesive** - Troweling is required
4. **Follow open time guidelines** - Per MAPEI technical data sheets
5. **Spread manageable sections** - Only what you can cover within working time

WARNING: Using non-approved adhesives or improper application methods will void the product warranty.

Installation Methods

Method 1: Full-Spread Glue-Down Installation

Best For: All glue-down luxury vinyl applications, commercial and residential

Requirements:

- Clean, properly prepared subfloor
- MAPEI ECO 399 or ECO 373 adhesive
- Appropriate MAPEI primer
- Proper environmental conditions

Step-by-Step Instructions

Step 1: Plan Your Layout

- Measure the room and calculate square footage
- Determine starting point (usually center of room or main focal wall)
- Snap chalk lines to create a grid or starting line
- Dry-lay several tiles/planks to verify layout
- Ensure border pieces will be at least half-width
- For planks: plan stagger pattern (minimum 6" / 15 cm end joint offset)

Step 2: Apply Primer

- Apply appropriate MAPEI primer to entire subfloor
- Use roller or brush as directed
- Allow primer to dry completely (typically 1-4 hours depending on conditions)
- Primer is ready when it's dry to touch and not tacky

Step 3: Apply Adhesive

- Pour adhesive onto primed subfloor
- Spread with recommended notched trowel held at 45-degree angle
- Work in sections (typically 50-100 sq ft at a time)
- Spread away from your exit point
- Ensure consistent coverage with proper trowel ridges
- **Do NOT roll adhesive - troweling is required**

Step 4: Wait for Proper Tack

- Allow adhesive to flash/tack per MAPEI guidelines
- Adhesive should be tacky but not wet to touch
- Finger test: adhesive transfers to finger but strings when pulled
- Open time varies by temperature and humidity

- Do not exceed maximum open time

Step 5: Install Flooring

- Place tiles/planks into adhesive carefully
- Do not slide tiles into position (drop in place)
- Butt edges tightly together
- For planks: maintain stagger pattern
- Work systematically across the section
- Use hand roller on each piece immediately after placement

Step 6: Roll the Floor

- Roll entire installed area with 75-100 lb floor roller
- Roll in both directions
- Re-roll after 30-60 minutes
- Pay special attention to edges and seams
- Rolling ensures proper adhesive transfer

Working Tips

- **Work in sections** you can complete within adhesive open time
- **Check edges** frequently for adhesive squeeze-out (wipe immediately)
- **Maintain consistent pressure** when setting tiles
- **Avoid walking on wet adhesive** areas
- **Plan your exit** to avoid being trapped in a corner

Finishing Touches

Expansion and Movement

Unlike floating floors, glue-down vinyl is fully adhered and requires minimal expansion gaps. However:

- Leave 1/8" (3 mm) gap at walls and fixed objects
- Do not force tight against obstacles
- Gap will be covered by baseboards or transitions

Transitions and Moldings

Common Transition Types:

Transition Type	Use Case
T-Molding	Between floors of equal or nearly equal height (vinyl-to-vinyl, vinyl-to-tile). The top of the molding bridges the gap between surfaces.
Reducer	Transition from LVT/LVP to lower flooring. Creates a gentle slope to eliminate trip hazards. Common for vinyl-to-carpet or vinyl-to-lower-tile transitions.
End Cap	Finishes flooring edge with a vertical face. Used at sliding doors, exterior doors, fireplaces, or where floor meets carpet. Also called "baby threshold."
Quarter Round / Base Shoe	Covers expansion gap between flooring and wall. Installed along baseboards. Fasten to baseboard or wall, not to the floor.
Wall Base (Cove Base)	Vinyl or rubber base molding that covers the wall-to-floor junction. Common in commercial glue-down installations. Available in multiple heights.
Stair Nosing	Covers and protects stair tread edges. Must be mechanically fastened for safety.
Multi-Function (4-in-1)	Versatile single molding that can serve as T-molding, reducer, carpet reducer, or end cap depending on configuration.

Installation Methods for Transitions:

- **Track-mounted:** Metal or plastic track is screwed to subfloor; molding snaps into track. Most common method.
- **Glued:** Transition is adhered directly to subfloor. Works well with glue-down LVT installations.
- **Nailed/Screwed:** Transition is fastened directly through to subfloor. Provides secure attachment.

> **Note:** For glue-down installations, transitions should be secured to the subfloor, not to the flooring itself. This allows the floor to remain stable while the transition provides a finished edge.

Final Steps

1. **Clean the floor** - Remove any adhesive residue with recommended cleaner
2. **Inspect all areas** - Check for gaps, lifted edges, or adhesive on surface
3. **Reinstall baseboards** - Install tight to floor surface
4. **Install transitions** - Secure to subfloor at doorways
5. **Replace furniture** - Use felt pads under all furniture legs

Traffic Restrictions

> **Important:** Allow adhesive to cure before allowing traffic

- **Light foot traffic:** After 24 hours
- **Normal use:** After 48 hours
- **Heavy furniture:** After 48-72 hours (use furniture pads)
- **Rolling loads:** After 72 hours minimum

Rolling Loads: Unlike floating floors, glue-down luxury vinyl can accommodate rolling loads when properly installed and fully cured. However, floor protection is recommended under rolling office chairs to prevent accelerated wear patterns and surface damage. Use chair mats or casters rated for hard floors to extend the life of the flooring.

Room-Specific Considerations

High-Traffic Areas

- Ensure complete adhesive coverage
- Roll extra thoroughly
- Consider commercial-grade products
- Plan for regular maintenance

Kitchens

- Luxury vinyl is water-resistant, not waterproof
- Wipe up spills promptly
- Use waterproof membrane under dishwashers
- Ensure proper sealing around sink bases

Bathrooms

- Verify product is rated for bathroom use
- Full-spread adhesive is preferred method for moisture areas
- Seal around toilets and tub bases
- Ensure proper ventilation to prevent moisture buildup

Basements

- Conduct thorough moisture testing
- Moisture mitigation may be required
- Use vapor barrier primer if recommended
- Products must be rated for below-grade installation
- Monitor humidity levels seasonally

Radiant Heat Systems

Pre-Installation Requirements:

- Only hydronic radiant heat approved (unless otherwise specified)
- Minimum 3/8" (10 mm) separation from heating components
- System must be operational 2 weeks before installation
- Reduce temperature to 65F (18C) 5 days before installation

Post-Installation:

- Gradually increase temperature (maximum 5F / 2.8C per day)
- Maximum floor surface temperature: 85F (29C)
- Never exceed manufacturer's temperature limits

Quality Control Checklist

Pre-Installation

- □ Subfloor is NOT particle board (verified)
- □ Subfloor flatness verified (3/16" over 10 ft maximum)
- □ Moisture testing completed and documented
- □ All moisture readings within acceptable limits
- □ Materials acclimated for 48 hours minimum
- □ Environmental conditions verified (65-85F, 35-55% RH)
- □ MAPEI primer on site
- □ MAPEI ECO 399 or ECO 373 adhesive on site
- □ Proper notched trowel available
- □ Floor roller available (75-100 lb)

During Installation

- □ Primer applied and dried completely
- □ Adhesive troweled (NOT rolled)
- □ Proper open time observed
- □ Tiles/planks placed (not slid) into adhesive
- □ Stagger pattern maintained (planks)
- □ Floor rolled after installation
- □ Floor re-rolled after 30-60 minutes
- □ No adhesive on flooring surface
- □ Edges tight and flush

Final Inspection

- □ No visible gaps or lippage
- □ All tiles/planks firmly adhered
- □ No adhesive residue on surface
- □ All transitions properly installed
- □ Baseboards and moldings secure
- □ Floor is clean and free of debris
- □ Traffic restriction signs posted
- □ Installation documentation complete

Troubleshooting

Tiles Lifting or Peaking

Cause: Inadequate adhesive, exceeded open time, or adhesive not properly tacked

Solution:

- Lift affected tiles carefully
- Remove old adhesive
- Reapply fresh adhesive and reinstall
- Roll thoroughly

Prevention:

- Follow adhesive open time guidelines
- Ensure proper flash time before placing tiles
- Roll floor thoroughly and re-roll

Adhesive Showing Through Seams

Cause: Too much adhesive or improper trowel size

Solution:

- Wipe excess immediately with recommended cleaner
- For dried adhesive, use manufacturer-approved adhesive remover

Prevention:

- Use correct trowel notch size
- Do not overspread adhesive
- Wipe squeeze-out immediately during installation

Tiles Not Adhering

Cause: Dusty subfloor, no primer, or adhesive open time exceeded

Solution:

- Remove tiles
- Clean subfloor and apply primer
- Reapply adhesive following proper procedures

Prevention:

- Always apply primer
- Work in manageable sections
- Monitor open time carefully

Bubbles or Blisters

Cause: Air trapped under tiles or outgassing from subfloor

Solution:

- If caught early, roll area firmly
- For set adhesive, may need to lift and reinstall

Prevention:

- Place tiles directly down (don't slide)
- Roll thoroughly in both directions
- Ensure subfloor is clean and properly prepared

Professional vs DIY

DIY Suitable For

- Small to medium rooms (under 300 sq ft)
- Simple rectangular layouts
- DIYers with flooring experience
- When all proper tools are available
- Properly prepared, flat subfloors

Professional Installation Required For

- Large areas or commercial spaces
- Complex room layouts with many cuts
- Subfloor preparation needed
- Below-grade installations
- When moisture mitigation is required
- Pattern or inlay designs
- When warranty requires professional installation

Care and Maintenance

Daily Care

- Sweep or dust mop to remove loose dirt and debris
- Wipe up spills immediately
- Use doormats at entrances

Regular Cleaning

- Damp mop with neutral pH cleaner
- Use neutral pH cleaners only
- Avoid excess water on floor surface
- Rinse mop frequently when cleaning

Products to Avoid

- Steam cleaners (can damage adhesive bond)
- Abrasive cleaners or scrub pads
- Wax or polish products
- Oil-based soaps or cleaners
- Ammonia-based cleaners
- Bleach or harsh chemicals
- "Mop and shine" products

Ongoing Maintenance

- Use felt pads under all furniture legs
- Use chair mats under rolling chairs
- Lift furniture to move, do not drag
- Protect from direct, prolonged sunlight (use blinds/curtains)
- Maintain consistent indoor humidity (35-55% RH)
- Replace damaged tiles promptly

Additional Resources

Industry Associations

- Resilient Floor Covering Institute (RFCI)
- World Floor Covering Association (WFCA)
- Floor Covering Installation Contractors Association (FCICA)

Certification Programs

- CFI Certified Flooring Installers
- INSTALL Flooring Certification

Adhesive Technical Support

- MAPEI Technical Services: 1-800-42-MAPEI
- Always refer to MAPEI technical data sheets for adhesive specifications

Warranty Information

See separate warranty brochure for complete warranty terms and conditions.

This installation guide is provided for general reference. Always consult local building codes before installation.