

## Flatness Specification Discrepancies: Concrete Slabs vs. LVP Flooring

Hello,

Coello & Associates started seeing the use of laminate vinyl plank (LVP) becoming more prevalent a few years ago. Like most new flooring products, we thought they followed the same specification and preparation as other tried and true products currently in the market. I first became aware of the residential concrete specification colliding with this new material during a mediation case for the Metropolitan Builders association a few years back for a slab on grade concrete foundation and floor. The LVP used had a tolerance of  $\frac{1}{2}$ " in 10 feet. Not a dramatic difference from the normal residential standard which raised no red flags. However, the latest LVP flooring has tightened that tolerance.

I would like to highlight the common mismatch between residential standard concrete slab flatness tolerances and the stricter requirements of laminate vinyl plank (LVP) flooring systems. These differences often result in installation delays, disputes, and added costs unless the tolerance, scope of work, and pricing are determined before the floor is prepared.

### Concrete Slab Flatness Requirements

- Typical concrete tolerance:  $\pm \frac{1}{4}$  inch in 10 feet (or FF20 if F-numbers are specified). Basically, a  $\frac{1}{2}$ " from lowest to highest spots in a straight line.
- Verification: Checked within 72 hours after slab placement using straightedge or F-number equipment. Measurements taken in a straight line following the direction of the screed process. Concrete will curl at every control joint and therefore, once you get beyond the 72-hour window you will not be able to verify the installation specification.

### LVP Flooring Flatness Requirements

- Typical tolerance:  $\frac{3}{16}$  inch in 10 feet or  $\frac{1}{8}$  inch in 6 feet. Specifications vary by manufacturer. The packaging usually spells out the specification.
- Verification: Checked immediately before flooring installation using a straightedge or laser. Critical measurement is at the points of connection as the determining factor is the warranty on the connectors.

### Specification Gap & Resulting Issues

LVP requires flatter substrates than standard concrete tolerances provide. As a result, a slab may be acceptable structurally but still out of tolerance for LVP installation, leading to leveling work, delays, and potential warranty issues.

## Recommendations

- Plan for slab prep (grinding/patching) as part of construction. Based on conversations with some LVP installers, they are factoring in \$800 for leveling material plus a day in labor per room, on average, receiving this flooring.
- Code requires a 6-mil vapor barrier under basement floors. If the soils are historically damp you may want to consider upgrading this.
- Consider enhanced slab finishing methods when flooring-grade flatness is desired. The American Concrete Institute (ACI) provides multiple standards and methods for achieving higher floor flatness and levelness (Ff and Fl) values. For an additional cost, Coello and Associates can achieve flatter tolerances if you are installing this over our floor, but we must be notified of the need to adjust our specifications and be provided with specific requirements. The flooring installer would be responsible for measuring our floor at or before 72 hours after placement to verify requirements have been met. There should still be an expectation that some floor prep will be required by the installer.

I hope this is helpful in setting us all up for success when your client is considering this flooring alternative. Coello and Associates team members are always available to fulfill your clients' dreams.

Sincerely,

*Michael Coello*  
*Coello & Associates, Inc*