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' (3.03m) 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 a 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 888-480-9138.

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