Calculation of Expansion Requirements

Following are step by step procedures for determining the amount of expansion allowance plain sawn maple or plain sawn oak flooring requires.

Note: There are three factors required for the calculation:

1. Width of area in inches (width of area refers to the direction perpendicular to the direction of the strip flooring).
2. Current average moisture content of the strip flooring (take 6-10 readings).
3. Anticipated maximum average moisture content the finished floor will experience throughout subsequent annual environmental cycles. (Consult the accompanying USDA map).

Step 1:

- Subtract the current average moisture content from the expected maximum moisture content. This will represent the variance moisture content.

Step 2:

- Multiply the variance moisture content by the width of the area. The result of this computation will be referred to as ''X''.

Step 3:

- Multiply "X" by .00125, or the average expected gain for each strip of flooring (nailed) per 1 % change in moisture content per 1" face width. This will give us the total amount of expansion required in inches.

Example:

- The gymnasium is 90 feet wide (1080 inches).
- Current moisture content averages 8%.
- Expected maximum moisture content is 11 %.

Step 1: 11%- 8% = 3% variance

Step 2: 3% x 1080" = 3240

Step 3: 3240 x .00125" = 4.05"

Result: This floor will require 4.05 inches of total artificial expansion to provide adequate expansion allowances for acclimation to 11 % moisture content.

Note:

A. If the installer is using 1/16” washers, simply multiply 4.05 x 16 (washers required to provide one inch expansion allowance). This will give the number of washer rows required to provide 4.05" of total expansion.
B. If the current moisture content of the strip flooring exceeds the anticipated maximum, the wood must be allowed to dry prior to installation.

Aacer Flooring cannot be responsible for any unsatisfactory or adverse conditions or effects that may result from the use of these guidelines. It is always necessary that:

1. The moisture meter is in good condition and accurate.
2. A true average of the moisture content conditions is being used.
3. Routine moisture content moisture checks are periodically made to determine if any changes in the average moisture content have occurred.
4. All washers used are consistent and of the proper width.
5. The anticipated maximum average moisture content is accurate.
6. All calculations are correct.