

# TECHNICAL BULLETIN

## Understanding Dry Cupping in Engineered Hardwood Flooring

Engineered hardwood flooring is a natural product that reacts to environmental changes, particularly humidity. One common issue caused by moisture imbalance is **dry cupping**. This bulletin explains what dry cupping is, its causes, and recommended corrective actions, based on guidance from the **National Wood Flooring Association (NWFA)** and our installation standards.

### WHAT IS DRY CUPPING?

#### Definition (NWFA):

Dry cupping refers to the concave shape that appears when the edges of engineered wood planks rise above the center. This happens when the top layer loses moisture faster than the core, causing shrinkage and pulling the edges upward. It is most common in dry environments and results from environmental factors.



### CAUSES OF DRY CUPPING

#### Low Relative Humidity:

Prolonged exposure to humidity levels below the manufacturer's recommended range causes the wear layer to lose moisture and shrink. This shrinkage creates stress on the core, lifting the edges and producing a cupped appearance.

#### Ply Separation:

In severe cases, excessive stress can cause layers within the plank to separate. This is more frequent in dry climates or during extended dry seasons.

#### Rapid Surface Drying:

It may also cup when exposed to rapid drying conditions, often accompanied by gaps between boards.

### Improper HVAC Systems:

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### Radiant Floors:

Radiant heating systems that are defective, or do not comply with our recommended maximum temperature, or have overheating spots due to poor system installation, the installation of rugs (trapping heat).

## RECOMMENDED SOLUTIONS

### Dry Cupping Without Delamination:

Increase relative humidity to within our recommended range. Over time, the flooring may return to its original shape.

### Dry Cupping With Delamination:

Boards showing delamination can be replaced individually. All repairs must be carried out only after the cause of the cupping has been identified, corrected, and the floor has returned to its original shape.

### Environmental Control:

Maintain indoor conditions as per or guidelines. Keep temperature between **60°–80°F (16°–26°C)** and relative humidity between 35%–65%.



## MOISTURE IMBALANCE AND ITS EFFECTS

Cupping in engineered hardwood occurs when low humidity causes the wood to lose moisture and contract, creating stress between the hardwood layer and the core. This can lead to board splitting and delamination.

To prevent such issues, maintain indoor humidity between **35% and 65% year-round**. Using a humidifier is recommended during dry periods. In most cases, planks will return to their original shape once humidity levels are stabilized above 35% for an extended period.

# INSTALLER AND OWNER RESPONSABILITIES

## **Before installation :**

- Ensure the work environment and subfloor meet minimum requirements.
- Inspect and confirm subfloor moisture content.
- Install flooring under normal living conditions (35% - 55% relative humidity).
- Perform final inspection of all flooring components (grade, finish, color and manufacturing quality) before permanent installation.
- Once installed, any flooring component is considered accepted by both the installer and the owner — regardless of the owner's presence during installation — and therefore will no longer be eligible for warranty coverage.

## **Subfloor Conditions :**

Before starting the installation of your wood flooring, thoroughly assess the job site to ensure that both the subfloor and the ambient environmental conditions of the building meet the required standards.

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## IN SUMMARY

Dry cupping is a clear indicator of low humidity. Wood naturally expands and contracts with moisture changes, which can lead to surface splits and delamination. **To prevent these issues, maintain relative humidity between 35% and 65% year-round throughout the home**, including the basement. If the floor has not been permanently damaged, cupping may self-correct once proper humidity levels are restored; though this process can take two entire seasonal cycle.

For further assistance, please contact our technical support team.