## Checks (Solid Flooring or Sawn/ Sliced Engineered Flooring)

**DEFINITION:** A lengthwise separation of the wood cells that normally extend across the rings of annual growth (parallel to, or along the wood rays), as results of stresses from the drying process. Checks may be acceptable in all flooring grades, however, the length and extent of the check is determined by the manufacturer for each particular grade product. Identification of the type of checking cannot typically be determined without destructive testing and/or third-party analysis. When checks develop during the manufacturing drying process, they are identified into three general categories:

**Surface-Checks -** Surface checks are separations in the wood fibers that usually occur in, or adjacent to, the wood rays on the faces of plainsawn (flatsawn) boards. These separations occur during the early phases of the drying process where the external and internal stresses cause the wood to tear itself apart.



End-Checks - Like surface checks, end checks occur in, or adjacent to, the wood rays, but on the ends of the boards rather than the face. These separations occur due to the normal movement of moisture along the length of the boards, where the ends of the boards dry more rapidly leading to stress fractures on the ends of the boards.



Internal Checks (Honeycomb) - An internal defect in the wood that may not be visible on the surface of the board, but occurs in the core (inner part of the board) of solid boards. These checks can become exposed when the boards are sanded or milled. They can also become exposed on the surface of the board with a loss in moisture or changes in RH after installation.



## **CAUSES:**

- Checks usually develop as a result of drying stresses from the seasoning process that exceed the tensile strength of the wood.
- Checks may become apparent with improper handling and maintenance practices, such as:
  - Inoperable or lack of RH control within the structure, reducing the humidity levels to below the manufactured tolerances.
  - Excessive moisture used to clean the floors.
    Excessive moisture would be described as steam or standing water/solution remaining on the floor or able to seep between the boards during the cleaning process.
- Checks may develop or become apparent with improper management of direct heating sources, such as radiant heating systems, surface heat from uncovered windows, or heat registers.
- Checks may develop or become apparent with extreme conditions, or excessive cycling of very high and very low moisture levels (outside manufacturer's recommended levels) within the installed area over an extended period of time. These conditions may be seasonal or regional.
- Checks may develop or become apparent with the process of drying a flooded floor from improperly monitored or misused on-site moisture remediation systems and procedures.
- Checks may telegraph through to the finished surface of the wood causing less elastic finishes to display fine linear cracks in the surface of the finish film precisely in the same location as the underlying anomaly.

## **CURES:**

- Checks are permissible in all flooring grades at the time of manufacture. Check with the manufacturer's grade standards and recommendations for addressing. No repairs may be necessary.
- Maintain the environment within the flooring manufacturer's requirements. When conditions are not specified by the manufacturer, maintain temperature between 60°-80°F (15.6°-26.7°C), and relative humidity between 30%-50%.
- Correct or redirect heating sources from the flooring.
- Increase the moisture levels within the facility to reduce the visible appearance of the checks.
- Isolation repairs such as wood filler, color-matched putties, or slivers may be used to address aesthetic concerns.
- Replacement of affected boards may be necessary.