

Specifying Commercial Floors

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 - IDCEC = 1 CEU
 - ASID
 - IIDA
 - IDC
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- Questions answered at end of presentation



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Course Description



This course assists architect and design professionals in understanding the variables that should be considered when specifying commercial wood floors for their client projects.

Learning Objectives



- Recognize differences specifying residential vs. commercial wood floors
- Understand wood floor benefits in commercial spaces
- Identify the most common subfloor used for commercial wood floors
- Explain Janka Ratings, how they determine durability
- Discuss sound control systems for commercial wood floors
- Determine finish types best for commercial spaces
- Recommend maintenance for commercial wood floors



Residential vs. Commercial



Residential vs. Commercial



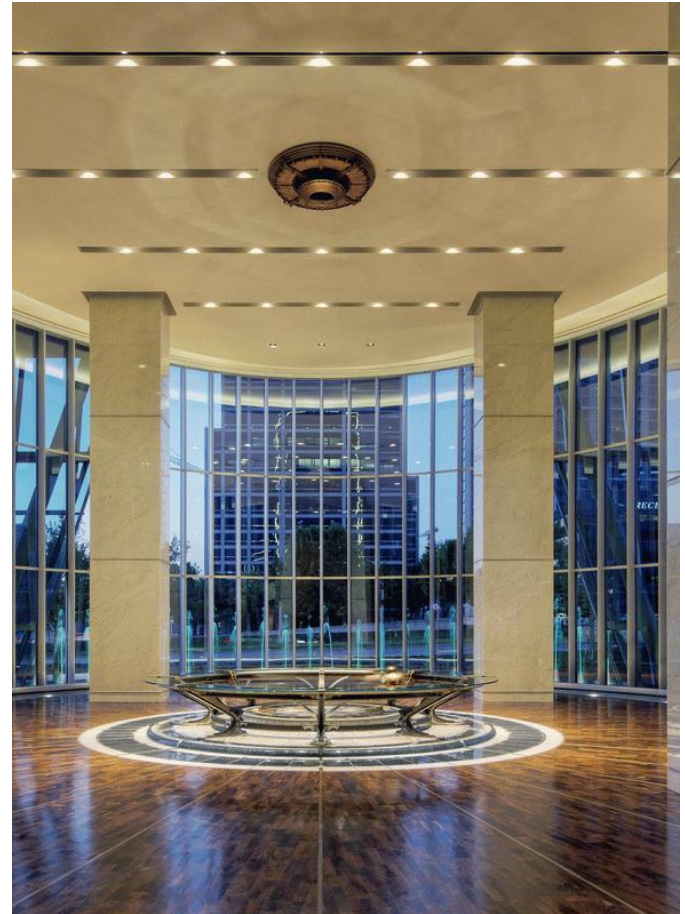
- Restaurants
- Shopping malls
- Office buildings
- Schools, libraries
- Churches
- Sports, concert arenas
- Museums
- Apartments, condos



Residential vs. Commercial



- Steel frame construction
- Concrete slab subfloor
- Engineered best in commercial settings



Residential vs. Commercial



- Engineered wood floors
 - Multiple layers
 - Very dimensionally stable
 - Less expansion, contraction





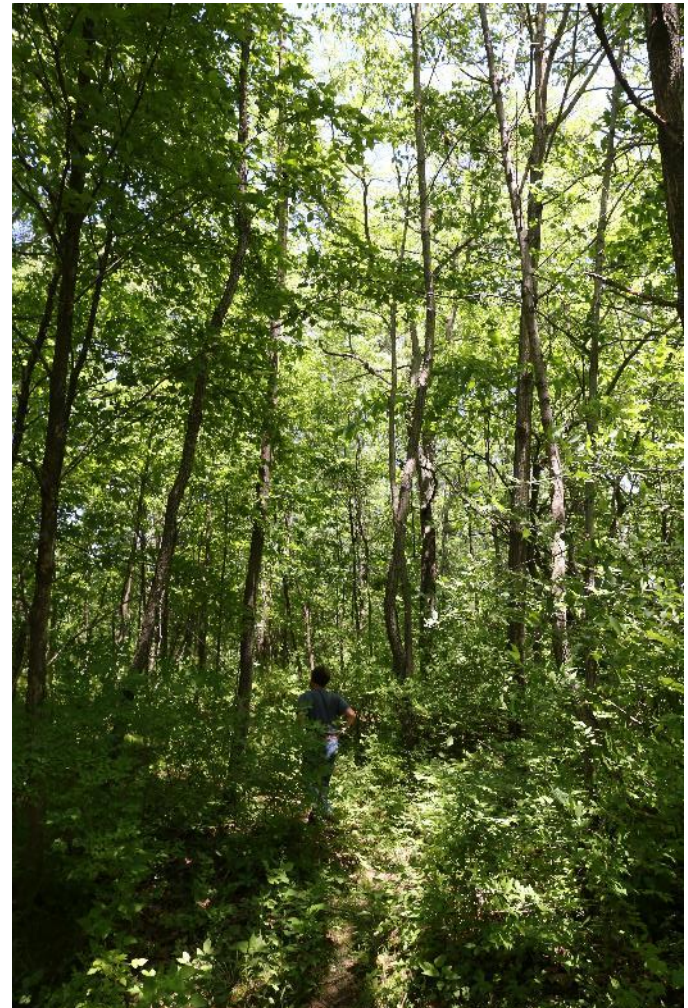
Wood Flooring Benefits



Sustainability



- USDA Forest Service
 - 1.6 trees planted per tree harvested
 - Standing volume more than double since 1950s
 - Responsible forest management
- 40-60 years to mature
- National Association of Home Builders
 - Wood floors last 100+ years
- Inventory not needed for 40-60 years
- Rapidly renewable for life cycle



Environmental Impacts



- Renewable flooring material
- Sustainably managed forests in North America
- Low environmental impact
 - Factory: forest naturally regenerates raw material
 - Sun: renewable energy source
- Carbon neutral
 - Produce oxygen during growth
 - Store carbon during service life
- Less water, energy used manufacturing
- End of service = fuel, recycled
- Last 100+ years
 - Less replacement, raw material





- Improves indoor air quality
- US EPA
 - Wood doesn't harbor allergens, microorganisms
 - Doesn't collect dust, animal dander, outdoor pollutants, etc.
- Low VOC colorants, finishes
- US formaldehyde laws
- Research your supplier

Wood as a Flooring Option



Low
VOC



- Low VOC, formaldehyde emissions
- CA = CARB
- CARB establishes strict VOC regulations
- Model for rest of country
- Reviewing for federal standard

Wood as a Flooring Option



- Increases Value
 - Real estate agents report commercial structures with wood floors sell faster, for more money
 - Increase can be up to 10% more than structures without wood floors





Commercial Subfloors



Commercial Subfloors



- Concrete
 - Cost-effective
 - Fire resistance
 - Energy efficient
 - Sound control



Commercial Subfloors



- Concrete
 - Slab must be flat
 - 1/8" within 6' radius
 - 3/16" within 10' radius
 - Grind high spots
 - Fill low spots
 - Self-leveling compounds



Commercial Subfloors



- Concrete
 - Moisture testing
 - Relative humidity
 - Calcium chloride
 - Calcium carbide
 - Vapor retarders



Commercial Subfloors



- Concrete
 - Glue-down installation
 - Many adhesives are multi-functional
 - Moisture control
 - Sound control
 - Crack isolation
 - Excellent long-term performance



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Janka Ratings



Janka Ratings



- Force required to embed a .444-inch steel ball to half its diameter in a piece of solid wood
- Rates all solid wood species
- Northern red oak used as base value due to its prominence in the flooring industry

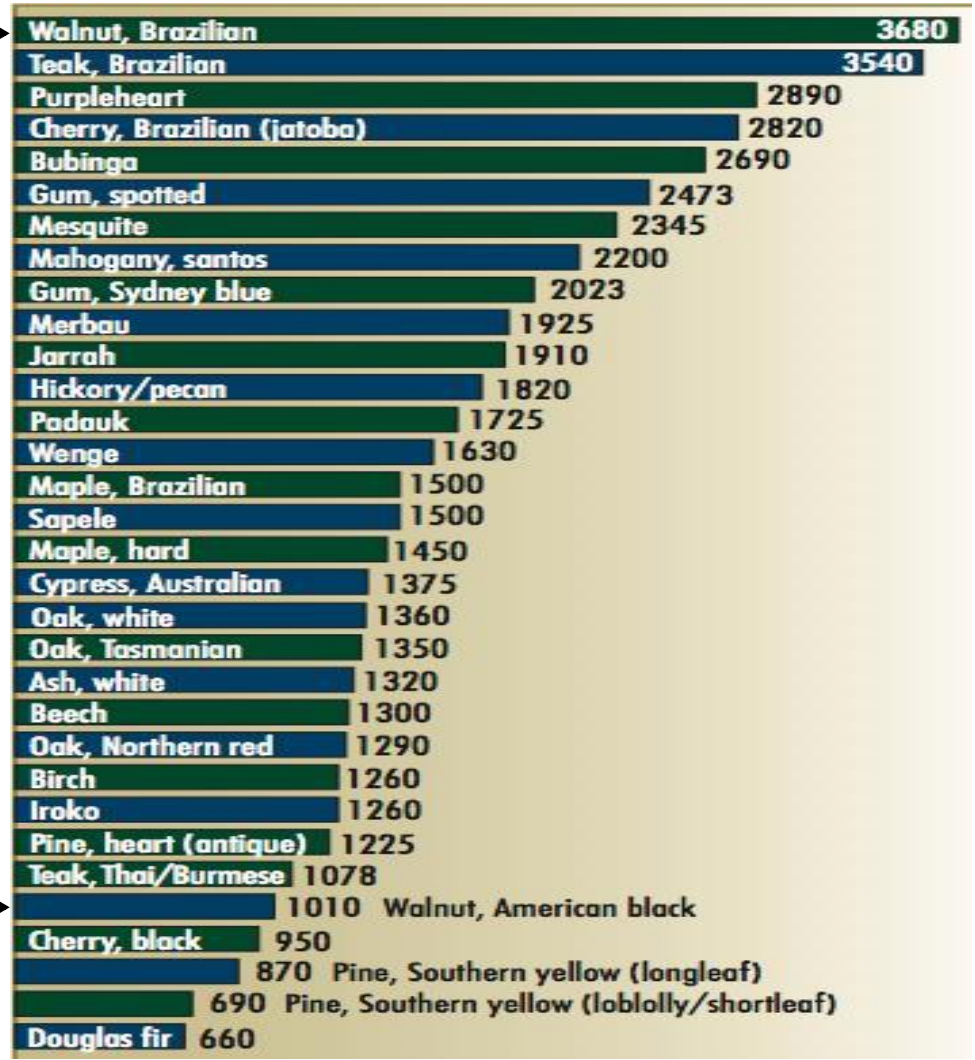
Walnut, Brazilian	3680
Teak, Brazilian	3540
Purpleheart	2890
Cherry, Brazilian (tatoba)	2820
Bubinga	2690
Gum, spotted	2473
Mesquite	2345
Mahogany, santos	2200
Gum, Sydney blue	2023
Merbau	1925
Jarrah	1910
Hickory/pecan	1820
Padouk	1725
Wenge	1630
Maple, Brazilian	1500
Sapele	1500
Maple, hard	1450
Cypress, Australian	1375
Oak, white	1360
Oak, Tasmanian	1350
Ash, white	1320
Beech	1300
Oak, Northern red	1290
Birch	1260
Iroko	1260
Pine, heart (antique)	1225
Teak, Thai/Burmese	1078
Walnut, American black	1010
Cherry, black	950
Pine, Southern yellow (longleaf)	870
Pine, Southern yellow (loblolly/shortleaf)	690
Douglas fir	660

Northern Red
Oak = 1290

Janka Ratings



Brazilian Walnut = 3680

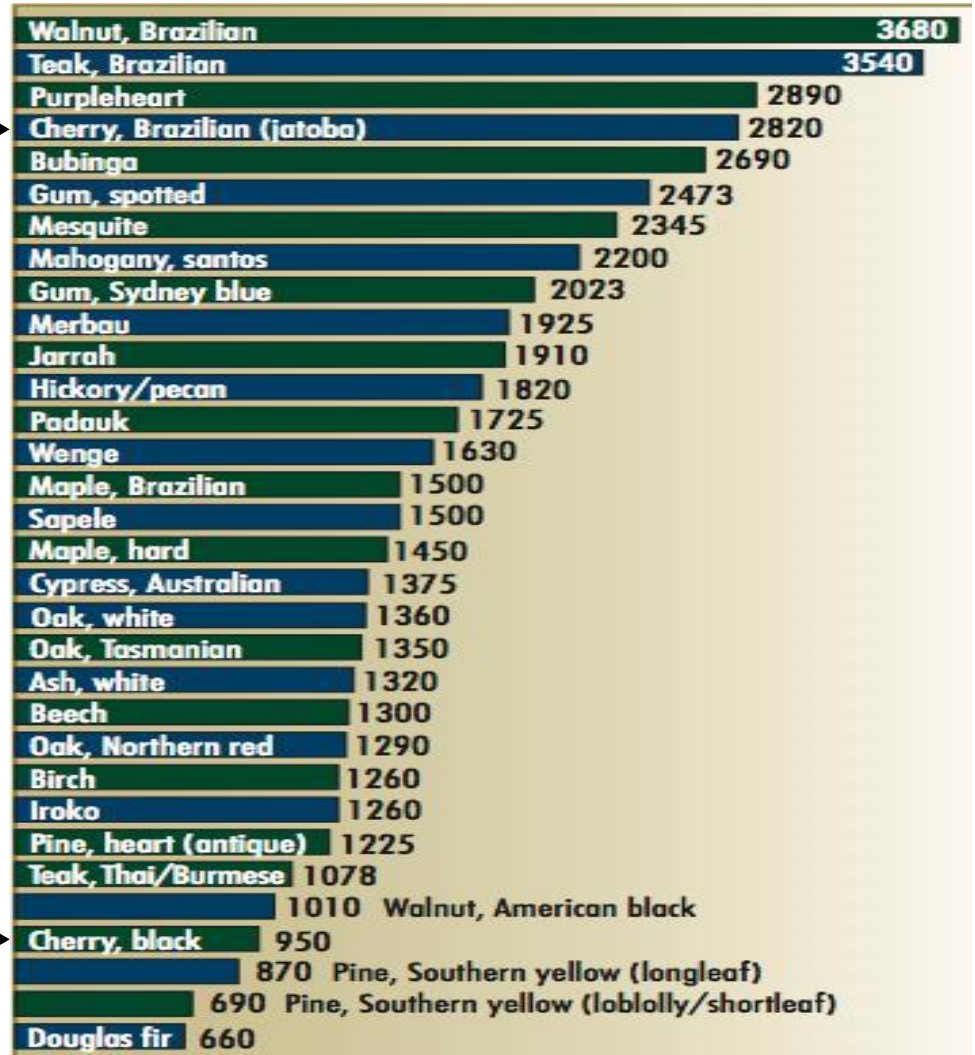
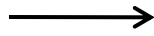


American Black Walnut = 1010

Janka Ratings



Brazilian Cherry
(Jatoba) = 2820



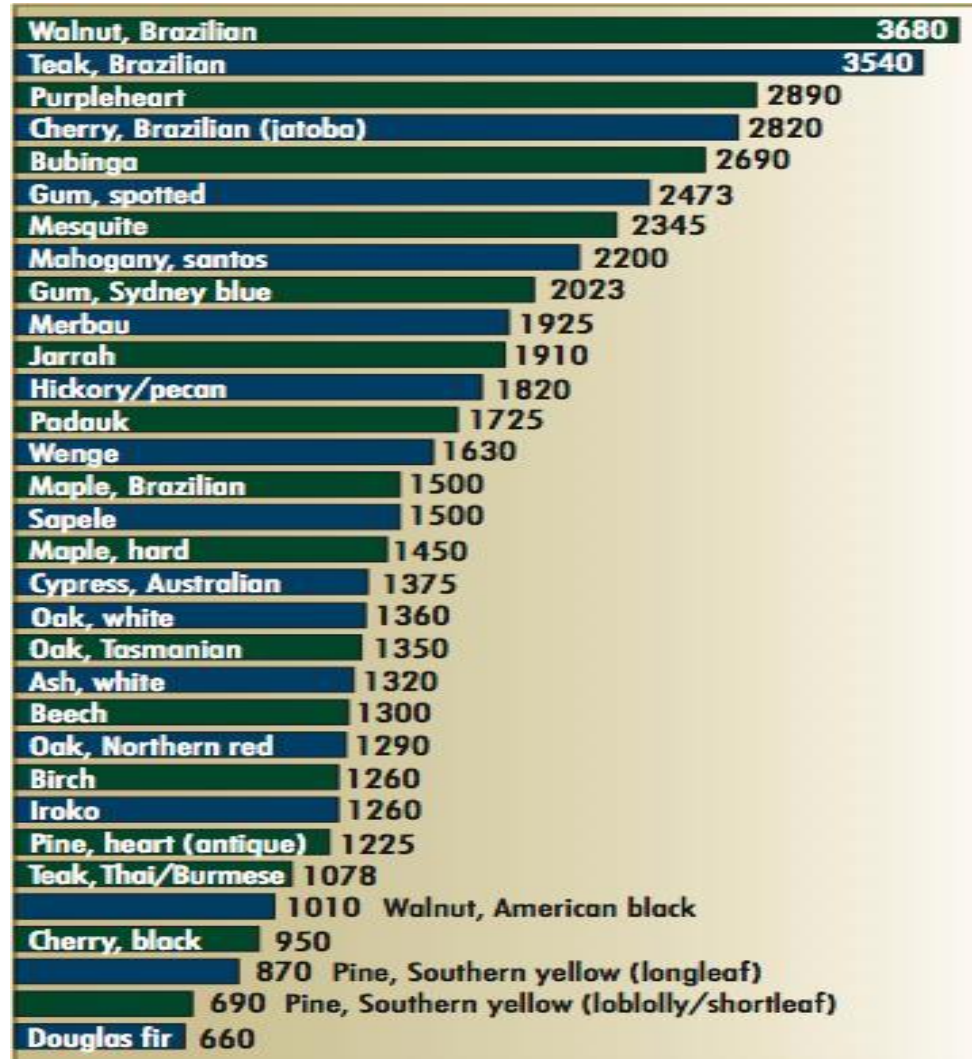
Black Cherry = 950



Janka Ratings



- Hardwood Rating
 - Do not apply to engineered flooring
 - Do not apply to cork
 - Do not apply to bamboo



- Wood is renewable raw material that regenerates
- Wood floors can last 100+ years
- Uses fewer natural resources than other flooring options
- Laminate flooring is not made using wood
- Saw cuts include plainsawn, quartersawn, riftsawn, livesawn
 - Cut affects appearance, performance of wood
- Flooring types include solid, engineered
 - Solid wood floors should be installed only above, on grade
 - Engineered wood floors can be installed above, on, below grade
- Wood floors should be acclimated to job site
- Installation methods include nail-down, glue-down, floating
- Radiant heat, other extreme conditions, can affect floor performance

Thank You

The logo for the Northwest Florida Area (nwfa) is located in the top right corner. It consists of the lowercase letters 'nwfa' in a white, sans-serif font, with a small green leaf icon integrated into the letter 'a'. The background of the top right corner of the slide features a photograph of a young child sitting on a couch and reading a book.

This concludes this course for:

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A photograph of a bedroom interior. In the foreground, a wooden floor with a herringbone pattern is visible. To the left, a bed with a plaid blanket and white pillow is partially shown. In the background, a dark desk with a white object on it is visible. To the right, a white curtain hangs. The text "Questions?" is overlaid in white on the floor.

Questions?