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THE MAGAZINE OF THE NATIONAL WOOD FLOORING ASSOCIATION

FEB/MAR 2020



WOMEN IN THE INDUSTRY



CONSTRUCTION ACOUSTICS IN FLOOR SYSTEMS

DESIGNING AND INSTALLING RADIANT FLOORS

DOMOTEX USA PREVIEW

nwfa

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THE MAGAZINE OF THE NATIONAL WOOD FLOORING ASSOCIATION

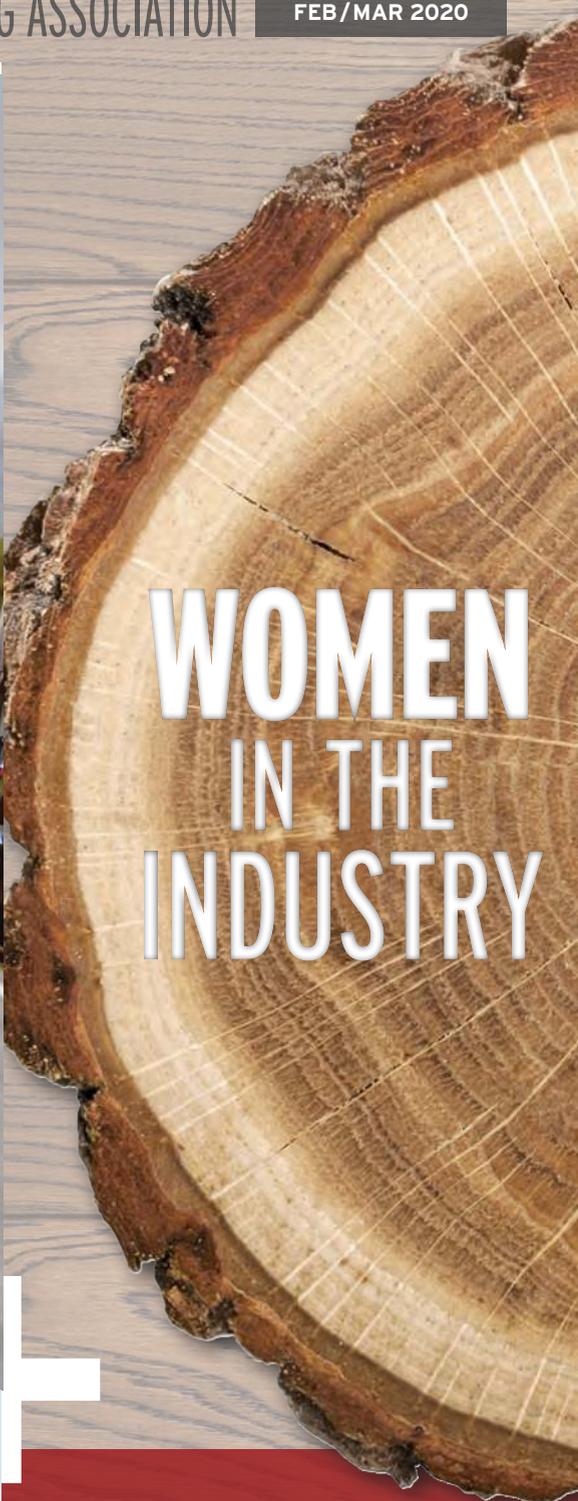
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Women in the Industry

By Libby White Johnston

Whether they're on the manufacturing line, installing floors, managing company finances, selling products, marketing, or the CEO, there are many women leading the way in the wood flooring industry. Here's a look at some of their stories.

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Construction Acoustics in Floor Systems

By Brett Miller

Minimizing impact and airborne sound in any type of multi-family dwelling begins in the design and specification phase. Having a general understanding of the basics of sound control systems ratings, and what they mean as they relate to flooring selection, is crucial.

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Designing and Installing Radiant Floors with the New NWFA Guidelines

By Mark Eatherton

If you are in the radiant floor heating business or the hardwood flooring business, it is important that you understand these new guidelines and the limitations they impose on radiant floor heating systems. The details must be recognized, surface temperature limitations followed, and a system developed around the product's specifications.

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CEO's Message

By Michael Martin

Now there's a WetJet specially designed to care for hardwood floors.



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INFLUENCING THE WOOD FLOORING INDUSTRY

Welcome to the first-ever
"Women in the Industry" edition
of *Hardwood Floors* magazine.

When I started in the wood floor industry 37 years ago, I didn't know any women in our industry. The trades in general, including wood flooring, seemed hostile to women.

Ironically, in all my years of contracting, I dealt almost exclusively with women. They were the primary decision makers when selecting the choice for wood flooring in the home.

Now, as our industry is changing at such a rapid pace, more and more women are moving in and really influencing our industry to change in very positive ways. Women are playing key roles in design, sales, finance, leadership, and many other aspects of the business.

Several women have been instrumental in my career. My first exposure to the bigger world of wood flooring was training under Janet Sullivan at Lenmar. She took me under her wing and graciously introduced me to all of her hard-won connections in the industry.

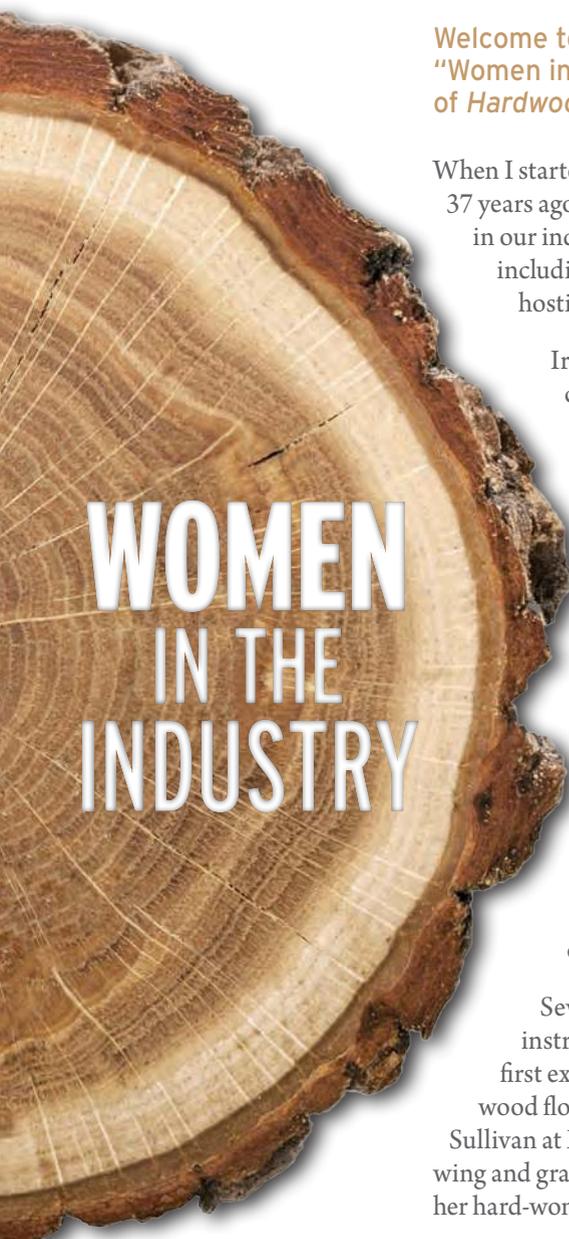
Barbara Titus, who is the first winner of the NWFA Women's Industry Network Award (2019), has been an inspiration to me with all that she has accomplished at Sheoga and with leading the way for NWFA's support of the Gary Sinise Foundation. You'll read more about Barbara and Janet in this issue of the magazine (starting on page 30).

My wife of 37 years, Katherine Lanz Dupra, was by my side when I started our first wood floor contracting company in 1983, and when we launched Installers Warehouse in 2008. She also was instrumental in the creation and launch of Revel Woods in 2017. Katherine has always been there to counsel, create, and support.

In 2018, Katherine retired from a 30-year teaching career and joined IW and Revel Woods full-time. She makes interpersonal relationships smoother and more productive. Her ability to read people helps in all of our interactions. Her teacher training allows her to break down complex tasks and make them teachable and scalable. These are huge contributions to both companies.

Revel Woods' focus on the independent interior design community is a perfect match for her creativity and her ability to connect with others and build relationships. There is no way we could be having the success we are enjoying without her contribution. People tolerate me, but they really like her!

It's past time that we began recognizing the contribution of women in our industry publicly. I am grateful for all of the women who are currently involved in NWFA and would welcome any women who think they might be interested in leading our industry into the future. ■



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PID

A Fashion Makeover

By Burt Bollinger

When an internationally known fashion house's flagship Madison Avenue retail location needed a dramatic style makeover, hardwood flooring from PID Floors in New York City, was a critical component that helped dress the site in a new sense of luxury, elegance, and warmth.

For decades, the Carolina Herrera brand has been known for exceptional personal style and for dressing various first ladies, including Jacqueline Kennedy Onassis, Laura Bush, and Michelle Obama.

"It's a very high-end couture business, and they have a very distinguished fashion customer who comes in," explains Charles Hicks, PID Sales Manager. "It's a salon environment where the client will go in and sit down, and clothing is brought out and presented. It's not a busy, rushed experience; rather, it is quite private and exclusive."

The project started when a designer reached out to PID Floors with the details of the flagship store's remodeling

All photos courtesy of pidfloors.com

project, which had a specific vision of what they wanted for the new and refreshed interior design of the retail location.

“The new hardwood flooring was to be located on the second and third floor of the boutique. We looked at the interior designer’s request and compiled a selection of samples that we thought they would like. We brought samples to their offices and met with the design team. During that process, we discussed colors and some ideas they had regarding millwork,” explains Hicks. “The approach for us was that this was like a painting, and all of the components would need to blend in a most beautiful way.”

“We wanted to have the warmth of the wood and elegance of the pattern, bring everything together. We knew we could contribute to a very luxurious environment with beautiful clothes, an exquisite floor, and the softness of the colors. It was like a puzzle, and with the right wood and the right color, we knew it was one that we could complete,” says Hicks.

The wood that PID Floor used was a select grade North American white oak cut into a herringbone pattern.

“As far as color, we felt a warm tone was the proper approach, and what we developed was something that is almost the color of natural white oak. It has just a little bit of a tint to it,” explains Hicks.

The end result was a floor that brightened the space with a heightened sense of elegance.

“The installers were true experts in their craft. Even though the pattern had to be very exact, overall, it was an easy installation,” says Hicks. “The clients were genuinely impressed at the result of the installation. They loved the look of the new flooring and how it meshed with the overall bright and fresh new look of the boutique.”

Much like a beautiful and timeless Carolina Herrera dress on the runway, “the floor has a real wow factor,” says Hicks. ■

COLOR:

Custom Light Brown

PATTERN:

Herringbone

CONSTRUCTION:

Engineered | 4-Side T&G |
Baltic Birch Plywood Core

SPECIES:

North American White Oak

GRADE:

Select & Better |
Rift & Quartered Cut

SURFACE:

Wire-Brushed |
4 Side Bevel Edges

FINISH:

Matte Polyurethane

DIMENSIONS:

5/8" Thick | 4" Wide |
24" Fixed Length

INSTALLATION:

Glue Down Installation, PID
Connect Plus Adhesive



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SHARING HER STORY

By Burt Bollinger

Emily Morrow Finkell is providing her customers with American-made hardwood flooring with a very personal touch. With the launch of Emily Morrow Home, she has infused her life-long love of interior design into a series of made-to-order flooring collections that both tell stories and bring her unique life experiences into customers' homes.

This life experience includes more than three decades as an interior designer and flooring expert, including serving as Shaw Industries' Director of Color, Style, and Design.

"I've worked with a lot of wonderful people who taught me a lot. I've learned so much about curating products into a collection and launching a brand. I've learned the importance of knowing how to tell a story and how to make it easy to understand," explains Morrow.

Morrow's first step to build her story outline was in-depth research. To do this, Morrow traveled the country, visiting with friends and flooring experts to seek out their input on what they wanted to see. She came away from those conversations knowing that they wanted something unique...something that could not be found at big box locations.





“Those I reached out to wanted a brand that spoke to quality. However, they also wanted something they did not have to inventory, but rather work with sources that know the art of working with the design trade,” says Morrow.

In addition to a brand that met these criteria, Morrow says she knew she wanted to speak to the idea of social responsibility and giving back. It’s a story that she has been able to tell through Emily Morrow Home’s manufacturer, American OEM’s unique set up, where the hardwood flooring is made-to-order in a plant located inside of a medium-security prison in Tennessee.

“Working with American OEM not only helps these men become reformed citizens, but they also become trained skilled craftsmen,” says Morrow. “By the time they are released, not only have they been paid, but they are frequently able to get jobs with us after they are released. It’s a program my husband, Don Finkell, developed in eight plants during his career in manufacturing hardwood flooring.”

From a practical perspective, Morrow also believes this unique manufacturing process leads to stunning visuals.

“It gives us so much design flexibility, and when so many dedicated hands can come together on a product, it allows us to do amazing things with wood. For example, some of our designs feature heavy scrapes, with black rubbed into the scrape. That said, for customers who have refined tastes, we also provide more traditional looks,” says Morrow.

The unique manufacturing approach provides her collection to designers in a somewhat non-traditional way.



With the launch of Emily Morrow Home, custom collections are integrated into interior design with made-to-order flooring collections that tell stories and bring unique life experiences into customers' homes.



“Rather than having to inventory all of this in their warehouses, because the team can turn orders quickly, buyers don't have to commit a lot of capital for truckloads or freighters,” explains Morrow.

As another way to make her brand unique and stand apart from others on the market, Morrow says it was vital that she told personal stories with color, style, and design.

“It’s important that every style has a personal story behind it,” says Morrow.

As one example, she was even able to gain color inspiration from her family trip to Kenya.

“I was enjoying being unplugged, in the middle of the Serengeti plain, and was filled with inspiration by the great migration of wildebeests. From the two weeks on safari came our color of the year for 2019, Tusker Taupe, as well as our other newest colors, Great Migration, Moon River, and Serengeti Spirit.”

SPREADING THE WORD

For Morrow, the final piece of her brand’s puzzle would be how she communicates her brand’s story to the world. In addition to creativity and finding inspiration from life experiences, Emily Morrow stresses the importance of digital marketing as a way to share her brand’s unique story.

“Social media is essential, and everyone should be engaging with consumers through it. My advice with digital marketing is that we should make it personal if at all possible,” explains Morrow. “Today, there are so many ways to reach out to not just retailers and designers, but end-users to create demand and brand recognition. Ultimately, everyone has to do it their way and do what makes the most sense for their customer base, but everyone should try to find a way to tell their brand’s own unique story in as personal a way as possible.” ■

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CONTRACTOR CORNER

- The Flooring Contractors Association (FCICA) has launched an improved, mobile-friendly website at fcica.com. The website highlights FCICA resources, and allows visitors to search a directory by company, location, categories, keywords, and more.
- The NWFAs has launched a new "Real Answers" podcast series featuring Michael Martin, NWFAs President & CEO and Chris Zizza, founder of C&R Flooring Inc., and past Chairman of the Board of the NWFAs. Listeners will gain actionable advice and insight based on Chris' more than three decades in the hardwood flooring industry. Look for new episodes on hardwoodfloorsmag.com.

Crafting a COMMUNITY CONNECTION

By Burt Bollinger

A hardwood flooring company known for its artistry was recently able to support the arts and give back to its hometown community in a rather unique and serendipitous way. The result was a newly refinished floor for a cultural events center and enhanced relationships with the community, suppliers, and manufacturers.

"At Artistic Floors by Design, we always try to be connected to our community, and as such, we are members of the Parker Arts and Cultural Events Center, also known as PACE," explains Joni Rocco, co-owner of Artistic Floors by Design Inc. in Parker, Colorado.

"My best girlfriend also happens to be the director of membership. She and I were planning to attend a dueling pianos charity event there for fun. I waited until the day of the event to open the email that had the ticket and event information on it, and it was only then that I noticed the event was a fundraiser that was put on to raise money to refinish the center's dance floor," says Rocco.

Rocco learned that numerous ballet, tap, and modern dance classes left the 2 1/4" maple floor in dire need of repair. The floor had taken a tremendous amount of abuse since its construction several years prior.



Joni and Joe Rocco, co-owners of Artistic Floors by Design Inc. in Parker, Colorado.

Photo courtesy of NWFAs

"I quickly talked to Joe (Rocco, co-owner of Artistic Floors by Design Inc.) about the opportunity to help, and he gave two thumbs up and was 100 percent sold on doing the work and donating the product and the service," explains Rocco. "Our intention and tag line have always been 'because art is not just for walls.' With PACE having so many performing arts take place there, it felt like a very neat tie-in to our slogan."

Rocco says her friend was both overwhelmed and surprised when she heard the news.

"I was so shocked she didn't realize we could help refinish the dance floor. She said that it's not something she would have asked from a friend, but furthermore, she only thought we did floors inside of houses and not commercial work as well," says



Before



After

Rocco. “While most of the work we do is for residential remodels, for us, wood is wood, no matter where it is located. It also made sense to give back to the community that has supported us tremendously over the years.”

Describing the scope of the donated work, Rocco explains, “We didn’t fill the floor. Instead, we just refinished, as there were some gaps from the original installation and because it is in somewhat of a warehouse setting, so there is not a lot of control the building has over the HVAC system. Maple expands and contracts and is not as dimensionally stable as some other species of wood, and we didn’t want filler popping out and irritating people. That said, the floor looks much better now.”

The reaction to the renovation from both PACE staff and dancers to the new floor has been universally positive.

“People have been so thrilled with the job we did. The PACE staff was ecstatic. We also had reactions from the dancers that were very positive, and they did a very nice thank you video for us,” says Rocco.

While the refinished floors benefited PACE and Artistic Floors by Design by strengthening

their bond with their community, Rocco says the project also helps them forge even stronger relationships with business partners.

“The beauty of refinishing and using the finish that we used is we have also built a relationship both with our supplier and the finish manufacturer. The finish we used on the floor is Loba Supra, which is their

two-component, commercial grade water-based finish,” says Rocco. “So, not only were we able to build relationships with our clients and our community, we were also able to create stronger relationships with our suppliers and our manufacturers.

Rocco says another essential benefit of donating work is the positive perception it can give your business in the hearts and minds of the community.

“Because our industry isn’t as heavily regulated as other industries in the construction sector, it becomes a beneficial opportunity to position your business to show that you are an active and engaged community member,” explains Rocco.

“When you’re working with residential clients, they don’t quite know where to go to get the help that they need. It’s a way to position yourself as someone who is transparent, someone who is actively engaged in the community, and that offers some peace of mind. You can communicate the fact that your company is involved in the community, that you’re not going anywhere, and that you’re here for the long haul,” advises Rocco. ■

MANUFACTURER MEANDERINGS

- AHF Products is celebrating the 85,000-square foot expansion of its manufacturing facility in Beverly, West Virginia. The plant, formerly owned by Armstrong Flooring, is the largest pre-finished solid hardwood flooring plant in the U.S.
- Uzin Utz North America announced the addition of Jerome Mester as their new Environmental Health & Safety Specialist. Mester brings more than 30 years of health & safety engineering experience to the Uzin Utz North America group.
- Karastan, long known as a carpet brand, is expanding its reach with the launch of its first-ever hard surface line.
- AkzoNobel announced it will provide a capital infusion of \$55 million to its High Point, North Carolina, industrial coatings manufacturing site. The reinvestment aims to transform the site by adding innovative technologies and infrastructure.

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DISTRIBUTOR DOINGS

- The North American Association of Floor Covering Distributors (NAFCD) is partnering with the International Wood Products Association (IWPA) to host IWPA's Wood Trade Compliance Week, February 24-27, 2020, in Nashville, Tenn.
- Horizon Forest Products has announced the promotion of Craig Servance to Operations Manager at its Raleigh, NC location.
- City Floor Supply announced the opening of a new branch location in Newark, DE.

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AN Aquatic Adventure By Burt Bollinger

When Patrick Derry of Awesome Hardwood received an unexpected phone call from a local competitor asking for help with a repair project, he surmised what he would soon be facing was likely not a common challenge. What he didn't realize at the time was that the mental challenge of the work would eventually test him more than the repair itself.

"This was a project located inside a residence at the Ritz Carlton in Sarasota, Florida, that demanded both very calculated decisions and tremendously calculated execution. It also was a project that demonstrated the need to trust both my peers as well as my instincts," explains Derry.

Inside the home was roughly 2,400 square feet of wood on top of a concrete substrate with cork sound protection, and floated double-layer plywood. The wood floor was a multiple width $\frac{3}{4}$ " rift & quartered white oak. It included oversized, long-length herringbone and chevron patterns with curved border inlays. There was also a portion of the floor where Derry had to reproduce and replace custom inlays that also had matching curved border edges with the same multiple width herringbone in the middle. The project involved the replacement of a water-damaged section of flooring. The floor had been damaged by a ruptured tankless water heater.

"The damaged portion of the floor was a 200-square foot area from the utility area down a long stretch of hallway, spilling into the living room. In these areas, the floor was severely damaged and buckled. The damage was so severe it caused the floating sub-floor to lift four inches off the floor."



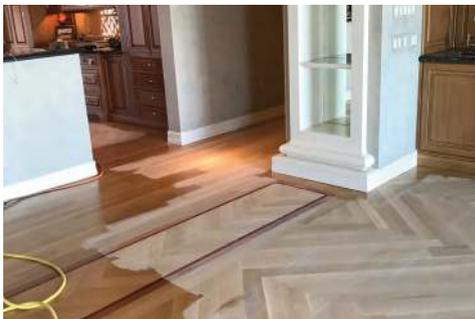
All photos courtesy of Patrick Derry of Awesome Hardwood

Derry's first step was to begin moisture testing to gauge the extent of the damage and reach out to the homeowner to learn more about the floor.

"In speaking to the homeowner, there was a sense of urgency as he was anxious to move in. Knowing that I could not rush the job, I was very relieved to learn the previous owner had kept detailed receipts on the purchase of the floor and the installation that had been done approximately 15 years earlier. This helped as I was able to call up the mill that produced the wood originally. They remembered the job, as it was a unique, custom order."

The next step for Derry was identifying and sourcing replacement exotic wood for the damaged wood inlays.

"I was very concerned about my ability to source some of the exotic wood for some of the inlay details; however, there was a local exotic lumber mill, Advantage Lumber, that came through for me. I came in with scraps I had removed from the damaged floor, and we spent hours going through hundreds of



foreign species until we nailed down the species I needed.” Having quickly sourced and purchased the proper materials, Derry ensured that all the necessary demo work was done, and the damaged areas were dried out before acclimating the wood inside of the residence.

Unfortunately, removing the old wood was not as simple as it first appeared. “There was marble casing from floor to ceiling with the fireplace that we could not take apart, as the marble itself was irreplaceable. We had to surgically remove the damaged wood from underneath the marble. It was a delicate, very white-glove process that I could not rush,” explains Derry. Once the water-damaged wood had been completely removed, the reinstallation of the floor was a straightforward glue-nail assist using cleat nails and Wakol sausage adhesive.

“To blend everything in, the new materials were thicker than the original flooring. This was partially because the floor had been sanded before, but also due to the properties of the rift and quartered wood, which shrink and swell in thickness more-so than in width. The homeowner was concerned about this height difference, but this was something we were able to easily correct with the sander,” explains Derry.

While the homeowner’s concerns about the appearance of the floor were alleviated, Derry had some concerns of his own about the original installation and making sure his work matched the rest of the existing floor, for better or worse.

“Installing the exotic wood inlays, I had to match the way they had originally installed their curved edges. It was a unique design, but the original installation was mediocre. I had to remind myself that I was not there to judge; rather, I was there because of my expertise to exactly reproduce what was there before the floor had been damaged,” says Derry. Once the installation was complete, his final task was refinishing the entire floor to blend in the repaired area. For guidance, and to reassure the concerned and anxious homeowner that his floor was in the best of hands, he turned to a representative from the company who produced the finish.

“I had the territory rep for Loba-Wakol come out and help me apply the 2K Supra finish. A lesson I’ve taken from this project is that it can be beneficial to have a product representative come out and assist in assuring a high-end client that the product we are using is the right one for the job,” explains Derry.

Looking back on the project, Derry says he learned a lot of other valuable lessons.

“Frankly, the real challenge was making sure I had sourced the right materials and making sure all of the moisture had evaporated and that everything was settled. It was critical to not rush through this process,” says Derry.

“The most important thing we can do as hardwood flooring experts is to be confident in our abilities. Once you doubt yourself, you leave it up to others to dictate your emotions. You have to be firm, not rush, and do things the way they need to be done. The project will turn out better.” ■

RETAILER ROUNDUP

- IKEA’s parent company is nearly doubling its U.S. forestland portfolio with two recent land acquisitions, including one in East Texas’ Piney Woods. The most recent purchase of 42,000 acres, which includes the Piney Woods land, follows a separate deal for 18,000 acres of forest in Southeast Oklahoma.
- AHF Products is transforming its entire line of domestically produced engineered hardwood with the new Densitek™ core, a high performance composite material which provides improved dent resistance and faster installation when compared to traditional plywood core. The conversion will be completed March 2020, across its family of brands, including Bruce®, Hartco®, Capella®, and Robbins®.

INDUSTRY INSIGHTS

GOVERNMENT AFFAIRS 

WOMEN IN FORESTRY USFS CHIEF CHRISTIENSEN

The forest products industry has a long and storied history. Many in the industry love to point out that wood, quite literally, built the United States. From sawn logs and lumber to railway ties to wood flooring and other finishes, wood is a vast part of our story. The story has also tended to trend toward the masculine with thoughts of brawny lumberjacks, teams of lumber sawyers, and skilled craftsmen, but that is only part of the story. Women have long been right there with their male counterparts, and in this day and age, the stereotypes and characters in our story are absolutely trending toward an industry that is ready and willing to work with anyone, male or female.

One of the most prominent women working in and for the forest products industry today is U.S. Department of Agriculture Forest Service (USFS) Chief Vicki Christiansen. Chief Christiansen has more than 39 years of experience both on the ground and in leadership. This includes 26 years working for the Washington State Department of Natural Resources, including serving as the Washington State Forester; time spent as the Arizona State Forester and director of the Arizona Division of Forestry; and almost a decade as a part of the Forest Service as Deputy Director of Fire and Aviation Management and Deputy Chief for State and Private Forestry – with oversight of Fire and Aviation Management, Tribal Relations, Forest Health Protection, Cooperative Forestry, Grey Towers and Conservation Education. These positions have included many years as a wildland firefighter and fire manager with special expertise as a fire-line blasting advisor, amongst countless other credentials. Chief Christiansen



Photo courtesy of U.S. Forest Service

holds a B.S. in Forest Management from the University of Washington (1983, cum laude). This experience and these exemplary credentials made her an easy choice to be selected by USDA Secretary Sonny Perdue as the 19th Forest Service Chief.

This job is no easy lift with a total USFS workforce of more than 25,000 permanent employees overseeing the conservation and working use of 193 million acres of national

By Dana Lee Cole



forests and grasslands; supporting the world's largest forestry research organization; and working with states, tribes, and others to sustain all forests (per her USDA USFS biography). It has also taken the ability to change and modernize with the times by increasingly recognizing the business needs of all of these moving pieces and increasing active forest management, conservation through shared stewardship, while all the while caring for the people under her supervision and those using the lands for which she is responsible.

In an interview with the National Association of Conservation Districts, she made note that "one of my first actions was to finalize a body of work we'd been working on in earnest for a couple of years...and that's to have no question on what we stand for, how we serve, what our values are, and what our purpose is. Because when you have a segmented organization, everybody's viewpoint of who we are and how we show up can be different. We call it "This is who we are: Values-based, purpose-driven, relationship-

focused organization." This includes a real strategy to create a culture of inclusion and diversity driven by working hard, support, and respect.

The Hardwood Federation has met with Christiansen and found her to be well-versed on our issues, including federal forest management reform and the environmental sustainability of hardwoods. She brings a common-sense approach to managing both her large agency and the vast tracts of lands under the U.S. forest system. Steering a boat as large as the USFS is a daunting task, but the new Chief is up to the task. We look forward to working with her to ensure the health, diversity, and productivity of our nation's forests...including the use of more hardwoods in domestic and international markets! ■

Dana Lee Cole is Executive Director at the Hardwood Federation, a Washington, D.C.-based hardwood industry trade association that represents thousands of hardwood businesses in every state in the United States and acts as the industry's advocacy voice on Capitol Hill. She can be reached at dana.cole@hardwoodfederation.com.

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Building Strong Foundations

This issue of *Hardwood Floors* celebrates the talented and dynamic women in our industry who have gone before us and work amongst us. They smoothed the path, opened doors, and showed other women the way forward. I am so inspired by these women, and would not be where I am today without their wisdom or guidance.

Looking back on the lessons I've learned, and taking stock of how many influential and passionate women have inspired me never to stop growing, I hope what I do today will inspire others in the same way. While my career has gone through a series of changes, I know my journey would not have been possible without the support given to me by women in the industry.

THE VITAL ROLE OF WOMEN IN FLOOR COVERING

I'm fortunate to have a unique perspective on the power of women in flooring history, starting from a very early age. Growing up in Dalton, Georgia, I've witnessed generation after generation of women entrepreneurs acting as trailblazers and role models. If you're familiar with the history of carpet, you'll know it all started in Dalton along "Peacock Alley" with the crafting of hand-tufted chenille bedspreads, an industry started by brave women like Dicksie Bradley Bandy.

During the depression, Dicksie and her husband's country store became indebted to the suppliers and were determined to repay every dollar. She

boarded a train to Washington, D.C., carrying a suitcase filled with chenille bedspreads to sell to large department stores. She came home with enough money to repay her suppliers and with enough orders to give several families an income for their craft. That simple cottage industry grew and evolved to the point where Dalton is now known as the "floor covering capital of the world."

In this industry, not only are many of my peers women, but the majority of our customers are as well. We speak of "Ms. Consumer" as making more than 91 percent of the purchasing decisions for the home.¹ With the purchasing power of women in the United States ranging from \$5 trillion to \$15 trillion annually, we certainly must consider "her" in our business decisions², and we certainly must consult women on what goes into a new product launch.

WOMEN INSPIRING OTHERS

As I look back on my career path, I am grateful to the incredible women who so generously opened doors and encouraged me to go further and to do better.

In 2001, Evelyn Myers knew that I'd moved back to my hometown, but that I was still new to the area as an interior designer. She invited me to be a guest designer in her Judd House Designer



Dicksie Bradley Bandy

All photos courtesy of Emily Morrow Finkell



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All photos courtesy of Emily Morrow Finkell

"Peacock Alley" in Dalton, Georgia.

Showhouse, which would provide invaluable networking opportunities. If not for her invitation, I might not have ever had the chance to meet the many contacts who later became my bosses and colleagues at Shaw.

LESSONS IN RESILIENCE, PAYING DUES

Looking back, some of my early jobs were excruciating. One example was working for a family-owned women's wear manufacturer whose owners would inadvertently exhale their cigarette smoke into my eyes causing me to leave work many days in tears. At the same time, they also gave me the chance to work with fabric, colorways, and people that would be selling the apparel across the U.S. That experience was priceless. Soon, I found myself training salespersons about the coming collections.

Along the way, I learned about perseverance, resilience, and the importance of hard work – even when it seemed like I was being pulled in many different directions at once. Balancing competing priorities had been modeled by my mother, a fantastic entrepreneur in her own right. As I began my own journey

into motherhood, I carried with me the power of the examples and lessons that only magnified in importance over time.

While I loved the work I was doing, after the arrival of my firstborn, I was inspired to take a huge leap. The result was that my own interior design business was born. It was the culmination of all that I had learned and experienced up until then. That business operated in West Georgia for nearly 12 years.

Those years allowed me the experience of putting family first. It's a lesson I've tried to live by since. I learned to be a mother first and foremost, and I had the flexibility and freedom to schedule design appointments around the schedules of babysitters, mothers' mornings out, and my children's evolving schedules.

ANSWERING OPPORTUNITY

The women in my life have taught me so many powerful lessons that I try to pass on to those who I have the fortune of knowing. One of the most important things I was taught is that like doors, opportunities can open and close quickly. Recognizing

'I hope what I do today will inspire others in the same way. While my career has gone through a series of changes, I know my path to success would not have been possible without the support given to me by women in the industry.'

the opportunities requires a certain kind of “sixth sense” to know when to take them. Unfortunately, too often, opportunities can seem daunting and present themselves as “risk.”

This lesson became a huge blessing as I faced a professional crossroads in 2002. Having just become a single mother, and after operating my own interior design business for many years, I was encouraged to move into the corporate world to provide the benefits my children and I would need. While there was risk involved, it was a leap that I was well-prepared to take for my family.

So when asked if I could direct a large group of corporate professionals and juggle continually changing business priorities, I actually laughed out loud. That had become second nature to me. For years, at any given time, I had teams of painters, carpenters, flooring installers, or tradespeople going in and out of businesses and homes, on time and budget, all while being a mother of two children.

THE IMPORTANCE OF FAMILY

I hope that my experience demonstrates to other women – and men – in the industry that you can prioritize family

and still have an enriching and successful career. That is perhaps the most important lesson of all, and one I hope to be remembered for, the same way I remember all of the incredible wisdom and support that was shared with me.

I encourage all of us to prioritize family and to allow everything else to fall into place. Following my own advice, I opted to exit a life of constant travel while working for a massive company, to instead revel in family. I chose to instead take a moment to savor my time being a new wife, a mother, and an empty nester.

When the time was right, I again took another risk, following my instinct, and formed a new enterprise. Who encouraged me to take that step? It was the same woman who inspired me nearly thirty years prior – my mother. ■

Emily Morrow Finkell is an interior designer and CEO of EF Floors & Design LLC in Dalton, Georgia, a provider of hardwood floors and home furnishings, and an NWEA design contributor. She can be reached at emily@morymorrowhome.com.

SOURCES: ¹ GIRLPOWER MARKETING
² NIELSEN CONSUMER, 2013

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BUSINESS BEST PRACTICES

SALES SAVVY 



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Sales organizations are facing familiar challenges at unprecedented levels. There are top-line pressures impacting your organization's profitability. These top-line pressures include "sameness," technology, and a culture of cheap.

"Sameness" is the commoditization of products and services. "Sameness" is a combination of blending in and a lack of differentiation. Organizations sound, look, and feel the same. If everyone is the same, buyers focus on price when making decisions. Differentiation is a constant challenge. Our research shows that only 39 percent of salespeople believe they offer a solution that is meaningfully different.

When attempting to stand out, salespeople look at their competition and copy them. This creates more of the same. By focusing too much on the competition, you limit yourself to the edge of their creativity. Use your competition as the motivation to improve, not as the benchmark from which you improve. To battle sameness, answer this question: "What are our definable and defensible differences?"

Technology has given buyers greater access to information. Professional selling is a people business, but technology has de-personalized the experience. Technology has made purchasing more transactional. Technology has given birth to a plethora of online sellers offering customers multiple choices.

After reading this article, google the term "flooring contractor" or "flooring supplier." You will get millions of results and plenty of pricing information. With technology, buyers have more transparency. In fact, many buyers scour the internet to establish a cheap anchor price. This cheap anchor price sets an expectation. It's no wonder salespeople face constant pricing pressure.

We live in a culture of cheap where the word value has become a euphemism for the word cheap. A culture of cheapness intensifies pricing pressure. Buyers are trained to look for cheap prices. Retailers use low prices to attract shoppers. Once shoppers enter a store or go online, retailers reinforce cheap prices with clearance aisles and coupons. Buyers are taught to focus on price. When was the last time you watched a commercial and the company bragged about high prices?

Cheapness is now entertainment. You can watch *Extreme Couponing* on TLC or *Down East Dickering* on A&E. In each case, the focus is on cheap prices. These shows have glorified haggling and price shopping.

Salespeople have always faced the threat of a cheaper competitor. Today's sales professional faces the same challenge at unprecedented levels. It might seem like price is the only way to compete, but it's not. Our internal research



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shows that price is not the most important aspect of the solution. Buyers only focus on price in the absence of value. Here are some ideas to help you compete more profitably in today's selling environment.

FOCUS ON SMALL WINS

When salespeople are approaching a new opportunity, it can be exciting. They are motivated and inspired to capture the big opportunity. Big opportunities excite, inspire, but eventually frustrate salespeople. Capturing a large opportunity takes time. There are setbacks and resistance. The best way to stay motivated and engaged is for salespeople to focus on the next best, immediate outcome they need to achieve. These next-best outcomes are called small wins.

Value-Added Selling is a consistent process. It's not just one sales call, it's a campaign filled with small wins. Small wins are concrete outcomes that lead to moderate progress. One small win might seem unimportant, but several small wins will generate momentum. Big opportunities are captured through small wins. Rather than focusing on the big victory, just focus on achieving the small wins that will lead to that big victory.

UNDERSTAND THE BUYER'S NEEDS

The best way to understand the buyer's needs is to ask questions and listen. Ask the customer, "What do you expect from our products, our company, and our people?" Customer expectations are the true benchmark of satisfaction. Value-added sellers aim to exceed their customers' expectations, but you cannot exceed expectations until you know what they are. From the very beginning, understand what your customers expect from your solution.

The three dimensions of value include the product, company, and people. The customer has different expectations for each dimension. If you understand their broader expectations, you have a better understanding of their needs. Asking this question also enlarges the conversation beyond just price.

Ask the customer to elaborate further with this question, "Fast forward to the end of this project. What does the ideal outcome look like?" When making a purchasing decision, most buyers want the best long-term solution. Yet, they get hung-up

on short-term issues like price. To effectively sell your value-added solution, the buyer has to think long-term. When a buyer thinks long-term, they are less focused on price because they focus on outcomes.

SELL YOUR PERSONAL VALUE

Why should the customer buy from you, the salesperson? It's shocking how little time we spend selling our personal value. In a recent study, we surveyed buyers about the importance of the salesperson. This group of buyers admitted that the salesperson represents 25 percent of the total value. If you're not selling your personal value, you are missing 25 percent of the reason why they buy.

If you're unsure about the personal value you bring, ask your best customers. Use these questions to generate a discussion with your top customers:

- Why do you buy from me versus other salespeople?
- How am I different than other salespeople?
- What can I do to create more value?

Our research on top-achieving salespeople shows that customers will brand their salespeople. They will refer to them as their "go-to rep" or the "in-house expert." How would your customers brand you?

Sell your personal value by solving your customer's problems. Price is less important when you solve a problem. Our research suggests that top-achieving salespeople are some of the best problem solvers. However, the customer's problems are not always visible. Understanding the customer and your solution will make solvable problems more visible. To become a better problem solver, fully immerse yourself in the customer's needs and become the expert in your industry.

You can still compete aggressively and profitably by selling value and not price. Value-Added Selling requires the commitment of everyone in the organization. Although the principles of Value-Added Selling remain timeless, some of the tactics have changed. Due to sameness and technology, buyers appear to be more price sensitive than ever. To overcome these challenges, salespeople must adopt a small-wins approach and understand the buyer's needs. And, remember, you bring 25 percent of the value. ■

Paul Reilly is a speaker, sales trainer, and co-author of Value-Added Selling, fourth edition (McGraw-Hill, 2018), and host of The Q and A Sales Podcast. For additional information on keynote presentations and seminars, call 636.778.0175 or email paul@reillysalestraining.com. Visit tomreillytraining.com and signup for a free newsletter.

BUSINESS BEST PRACTICES

LEGAL 



Very often, there is confusion regarding what a copyright actually is, how to obtain a copyright, and the rights included with a copyright. A copyright is a property right in an original work of authorship. Examples of works that qualify for copyright protection in the United States include an article, book, photo, music, or software. These are often referred to as “works.” Copyright protection automatically arises at the moment a work is created. As discussed later in this article, registration of a copyright may be beneficial, but is not required to obtain copyright protection.

RIGHTS OF COPYRIGHT OWNERS

Copyright owners have an exclusive “bundle” of rights in their specific work, including, but not limited to, the right to: (i) reproduce the work (i.e., the copyright owner has the sole right to make copies of the work); (ii) prepare derivative works (i.e., the copyright owner has the right to modify or revise a work); and (iii) distribute the work (i.e., only the copyright owner has the right to sell the work).

For example, Howard previously wrote a book entitled, “The First Edition of the Finest Wood Flooring.” If Howard had a desire to create a second edition of this book, copyright law will allow him to prepare a derivative work and write the second book.

WHAT CANNOT BE PROTECTED BY COPYRIGHT?

The categories of works that are not able to be protected by copyright include:

- Ideas, methods, systems, processes, and concepts
- Names, titles, and short phrases (i.e., a domain name, name of a product or service)
- Typeface, fonts, and lettering
- Layout and design (i.e., formatting of a website page, book cover, or poster)

Know Your (copy) Rights

Considerations Regarding Copyright Law

By Barbara F. Dunn & Matthew E. Misichko



- Forms used to record information (i.e., address book, time card, or bank check)
- Familiar symbols and designs (i.e., the suits in a deck of cards, the peace symbol, or religious symbols)

Determining if a work can be protected by copyright is a fact-intensive inquiry. There is the possibility that a limited, narrow aspect of an individual's work can be protected by copyright. The key question that the U.S. Copyright Office must be able to answer "yes" to is, *"Is there a sufficient amount of original authorship in this work?"*

It is also important to consider whether the work can be protected under different intellectual property laws including trademark and patent law. For example, a slogan such as "Wood Washed So Good!" is not protected under copyright law, but would be protected by trademark law.

WORK MADE FOR HIRE

As mentioned, the person who creates a work owns the copyright to that specific work. However, if a company engages a contractor or vendor and the company desires to own all copyrights in any works created by the contractor or vendor, then the doctrine known as a "work made for hire" applies. Under a work made for hire, the ownership rights associated with the work of a contractor or vendor automatically transfer to the company. A specific work made for hire clause will be included in the agreement between the company and the contractor or vendor specifically confirming this arrangement.

Sometimes, certain works of a contractor or vendor are not covered by the U.S. Copyright Act. In order for the company to absolutely assure itself that it will own all copyrights in the works created by the contractor or vendor, the company will include an assignment clause in the agreement. If the work is not deemed a "work made for hire" under the U.S. Copyright Act, then the assignment clause steps in and assigns all copyright rights of those works created by the contractor or vendor to the company.

For example, Fun Floorwax Company hires Stuart, a freelance photographer, to attend the Galactic Floorwax Conference on behalf of Fun Floorwax Company. Stuart takes pictures of various booths at the conference, as well as the panel discussion.

Under copyright law, the individual who actually takes the picture is the copyright owner. However, in the agreement

between Fun Floorwax Company and Stuart, a section includes language requiring Stuart to transfer ownership of the photographs to Fun Floorwax Company. By owning the pictures, Fun Floorwax Company can reproduce or display the photographs on its website. Although Stuart took the photos with his camera, the work made for hire relationship means that Fun Floorwax Company owns all copyrights in the photographs taken by Stuart.

Additionally, if the photographs taken by Stuart include individuals, Fun Floorwax Company should obtain consent from those individuals for Fun Floorwax Company to use their image and the photographs for business purposes of Fun Floorwax Company. It is also best if Fun Floorwax Company can receive a copy of any photo release entered into between Stuart and such individuals.

REGISTRATION OF COPYRIGHT

Registering a copyright with the federal government is not required, but is recommended. Applying for a copyright is simple and straightforward. Any individual wishing to register their copyright should visit copyright.gov/registration/. The "Registration Processing Time and FAQs" link includes vital information.

A copyright notice or copyright symbol communicates that an individual has ownership over such work. This is usually accomplished by including the word "Copyright" or a C in a circle to illustrate that the work is copyrighted. Use of the symbol is recommended, but not required.

Advantages of registering a copyright include: (i) having the possibility to file a copyright infringement lawsuit; (ii) being eligible for statutory damages and attorneys; or (iii) a presumption of truth regarding the information provided in the copyright registration certificate, including one's ownership of a copyright.

COPYRIGHT INFRINGEMENT

Copyright owners must continually determine whether others are using their protected work without their permission. If a copyright owner learns of any unauthorized use of its copyright, then the copyright owner can seek a claim for copyright infringement and, if the copyright is registered with the U.S. Copyright Office, petition for damages in federal court.

The following is a standard analysis used to determine if copyright infringement has occurred. First, the non-owner of a copyrighted work must have access to the original work



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Legal (Continued)

and the non-owner's work must be "substantially similar" to those aspects of the original work that are protected by copyright law.

Second, in order to determine what is deemed "substantially similar," most courts implement an "ordinary observer" test. This test determines whether a typical lay person would recognize the non-original work as having been copied from the original work. If the lay person determines the non-original work has been copied, the non-owner of the copyrighted work has committed copyright infringement.

A defense to copyright infringement is "fair use." This exception is very limited in its application and should not be consistently relied on as a defense. Recent court decisions have increased the limitation of the fair use doctrine.

Having the right to control certain uses of a created work is the cornerstone of copyright law. Upon its inception, the bundle of rights gives a copyright owner broad discretion to use the work in the future. Copyright law provides protection for people to benefit from their intellectual and creative works. It is an important concept to utilize and to obtain broad intellectual property rights for your organization. Each organization should ensure that proper measures are put in place to protect all copyrighted works and to require permission to be sought if such works want to be used by non-owners. ■

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BUSINESS BEST PRACTICES

MARKETING 

WHY WOMEN

Matter to Wood Flooring Marketers

Women are responsible for about 70-80 percent of all consumer purchasing through their buying power and influence. This often-cited statistic has appeared in publications including Inc., Forbes, and Bloomberg, as well as many other credible sources. Even if the reality is closer to 50 percent, it would be unwise to underestimate or ignore this valuable market segment, especially in home purchases like flooring.

Women have the ability to greatly impact the profitability of flooring companies, installers, and refinishers. Here's why:

Women are influencers. Even if a woman isn't the one completing the transaction, she often has a strong vote or veto power in what products, services, or brands are purchased.

Women create a multiplier effect. Women represent multiple markets – their children, spouses, parents, friends, and extended family, to name a few. Almost half of adults in their 40s and 50s are part of the “sandwich generation” – adults with living parents older than 65 years of age and adult children, according to Senior Living.

Women are waiting longer to get married. Researchers with the Population Reference Bureau found that, in 2018, the national average age at which women first marry is 27.6. U.S. Census figures indicate that, in 1968, that average was 21. That's 6 years longer that women are the sole decision-maker about things such as buying or improving homes.

Women are waiting longer to have children and are having fewer children. In 2017, the number of births for every 1,000 women of childbearing age was 60.2, down 3 percent from the previous year, and a





record low, according to the National Center for Health Statistics. That leaves more disposable income and more time for home projects.

Women tend to have higher expectations for customer service, says Bridget Brennen, author of “Why She Buys: The New Strategy for Reaching the World’s Most Powerful Consumers.” And when companies or service providers rise to meet the challenge, service improves for everyone, and the company’s reputation improves.

More specifically, women play a significant role in buying decisions when it comes to home improvement. According to a TraQline survey of more than 500,000 consumers annually, nearly half of the time (47 percent) flooring purchase decisions are made jointly by men and women. And when the decision is made individually, women edge out men, 28 percent versus 25 percent.

These findings are consistent with a survey of homeowners by Service Magic, a web-based service that connects homeowners with prescreened home-service professionals. The survey found that a majority of homeowners (65 percent) say they make home improvement decisions as a team.

CONTENT MATTERS

Today’s marketing must focus on the total customer experience, which starts before they reach out to a contractor or flooring specialist. To do well, marketers must understand the customer’s psyche – their needs, wants, and motivations – then speak to them in a way that gets and keeps them interested in the company or its products and services.

- Answer their questions in blogs, Q&As, podcasts, newsletters, and social media.
- Make your website a source of information. Demonstrate your knowledge so your prospective customers will trust you and want to do business with you.
- Be transparent in your communication and don’t withhold information to get a chance to “pitch” or sell your services. Your website (for example) may be the only chance you get.
- Be willing to invest some time up front in phone calls and consultations. Consider it an opportunity to start building a relationship.

- Ask customers, especially women, to write positive reviews on Yelp, Houzz, Angie’s List, or HomeAdvisor.
- Respond to negative reviews and try to resolve issues with unhappy customers.

Not sure if online reviews matter? According to a 2016 BrightLocal Consumer Review Survey, a whopping 84 percent of people trust online reviews as much as the recommendation of a friend or family member. Further, 90 percent of consumers read 10 reviews or fewer before they feel they can trust a business.

MEDIA MATTERS

In addition to addressing women’s questions with quality content, consider using media that are preferred by women.

- Of all the people on the internet, 83 percent of women use Facebook. Further, 84 percent of online users age 30-49 are on Facebook; and 72 percent of online users have incomes of more than \$75,000, according to Facebook.
- As of September 2019, Pinterest reported that 70 percent of its users are female.
- Instagram reports that 52 percent of its audience is female.

Also, options include strategically targeted Google Adwords, email marketing, or video marketing. For companies targeting less digital-savvy customers, consider advertising in highly visual media such as regional or local home and design publications, targeted cable networks and programs, or direct mail.

MORE THAN MARKETING

Being truly successful at marketing to women takes more than good content and well-placed ads. Marketers must be careful to understand that women are not a homogenous group, and avoid stereotyping. Just as with any target market, women need to be segmented, not just by age or income, but also their needs, wants, and aspirations. Consumers won’t settle for products or services that fail to address their unique needs. Nor should they. And that’s the challenge for all marketers. ■

Katrina Olson is a marketing consultant, trainer, writer, and principal of Katrina Olson Marketing + Training. Reach her at katrina@katrinaolson.com.



Women in the Industry

By Libby White Johnston

Whether they're on the manufacturing line, installing floors, managing company finances, selling products, marketing, or the CEO, there are many women leading the way in the wood flooring industry.

During the 2019 NWFA Expo, the first-ever NWFA Women's Industry Network Award was presented to Barbara Titus of Shoega Hardwood Flooring. It was then that *Hardwood Floors* began planning this special issue of the magazine to recognize the women of our industry and share some of their stories.

The timing is no coincidence, as March is Women's History Month in the United States. Additionally, March 8 is International Women's Day, an annual day across the world designed to celebrate the social, economic, cultural, and political achievements of women.

On the pages that follow, you will read about women who are part of our great industry and find out how their careers began, what they enjoy about working in wood flooring, and the ways they are contributing to improving the trade and their communities.

Leading the Way

A CONVERSATION WITH
CURRENT AND FORMER NWFA LEADERSHIP



CHRISTINE **Coates**

President
Coates & Associates Inc.
Novato, California

From 1996 to 1997, Christine Coates was the chair of the NWFA's Board of Directors. She served on numerous NWFA committees, including membership, *Hardwood Floors* magazine, and certification. Coates was also a founding member of the Australian Timber Flooring Association (ATFA), which provides resources and training for wood flooring professionals in Australia.



JULIE **Russell**

Communications & Marketing Director
Glitsa, a division of Rudd Company Inc.
Seattle, Washington

Julie Russell is currently the vice-chair of the NWFA's Board of Directors and the chair and board liaison for the *Hardwood Floors* publication advisory committee. Throughout her 25 years in the industry, she has been involved in NWFA training schools and served on a variety of committees, including the taskforce responsible for rewriting the NWFA Sand and Finish Guidelines in 2016. Russell also has served on the American Coatings Association (ACA) Architectural Coatings Committee.

How did you enter the wood flooring industry?

Coates: Through my father, Jack Coates, at Golden State Flooring. My first job was cleaning the office, then bookkeeping, and finally, sales.

Russell: In 1994, I came to Glitsa American from a Seattle-based public affairs company. I was hired for an administrative position, and quickly took over marketing efforts for the company. My grassroots and lobbying background helped Glitsa secure an Architectural and

Industrial Maintenance (AIM) category for our main line of finishes, conversion varnishes. Glitsa provided me the opportunity to participate in NWFA, which opened the door to a greater understanding of the industry as a whole, and a finer understanding of individuals that make up the industry.

A CONVERSATION WITH CURRENT AND FORMER NWFA LEADERSHIP



Describe your current job responsibilities.

Coates: I am president of Coates & Associates Inc., which means I wear many hats – admin, sales, and marketing.

Russell: My current title is marketing and communications director for Rudd Company Inc. I direct the communications and marketing efforts for all of Rudd Company's brands.

Why do you enjoy working in the wood flooring industry?

Coates: I like the people, the wood itself, and respect the hard work of those who create beautiful wood floors.

Russell: The passion that people have in the industry, from manufacturer to installer and finisher. Everyone comes together to elevate the professionalism of the trade. I have been fortunate enough to have met smart, professional, kind, funny, and passionate people from all over the country, and Canada too!

What has been your experience with being a woman in the wood flooring industry?

Coates: Excellent. Sometimes it opens doors because builders, contractors, architects, etc., don't expect a woman to be knowledgeable about wood flooring. When I introduce myself, they are almost always polite and respectful, and once they listen for a few minutes, they become engaged.

Russell: I have had a very positive experience as a woman working in the wood flooring industry. I do my best to treat everyone with respect and have received the same treatment in kind. As a person working in the wood flooring industry, I own my job and responsibilities to those around me, and I try very hard to stay open to new ideas and new ways of doing things.

What are the most significant challenges and opportunities facing the wood flooring industry as a whole?

Coates: The greatest challenge is keeping and training excellent wood flooring contractors. There are opportunities in maintaining the skills, including sand and finish techniques that are essential to successful wood floor installations, and ensuring wood floors can provide a lifetime of value.

WOMEN IN THE INDUSTRY

Russell: One of the most significant challenges to the wood flooring industry is the popularity of wood look-alike materials. There are obvious challenges to wood flooring manufacturers and suppliers, but another challenge is that those materials allow less-qualified floor layers into the wood flooring installer's space. There are opportunities to educate the consumer on the benefits of real wood flooring from cradle to grave. Real wood flooring adds more value to your home and is better for the environment.

How can women make sure they have a seat at the table in coming up with solutions?

Coates: I think women do have a seat, and have contributed to the industry for many years. Many of these women are behind the scenes contributing to businesses owned by their husbands or family. They have been extremely influential in both the policies and financial success of business from manufacturing to distribution and installation.

Russell: Be prepared, know what you are talking about, and don't be afraid to participate.

Is there a woman who has inspired you and why?

Coates: Jonny McSwain (also a past NWFA Board Chair) and Vicki Dryden. Two strong, confident, knowledgeable women who supported me, trained me, and advised me in my career.

Russell: Our CEO, Laurel Jamison, continues to inspire me. She has been in the coatings industry for more than 40 years and still has more passion for it than anyone I know.

Tell us about the importance of mentorship and how that evolves throughout one's career.

Coates: Effective mentoring evolves with one's experience and readiness to listen or hear specific advice. As a mentor, I try to remember to focus on the skills that are pertinent at that point in someone's

career; there's no need to dwell on topics that aren't yet relevant. I know that as my mentors shared their vast experience and knowledge with me, what was most helpful was the advice dealing with the issues I was facing at the moment. Today, I find mentoring by personal example to be incredibly helpful professionally – particularly in figuring out lifestyles and work-life balance.

Russell: I was lucky enough to start my journey in the wood flooring industry with Bill Price, Sr. Bill was a born teacher and learner. He shared his knowledge and understanding with joy. I believe the relationship that I have with colleagues and younger staff is a direct influence of Bill's mentorship. Business is moving so quickly, and the people that make it all go now come from everywhere, not just from the last generation. To keep the trade strong, I believe that it is our responsibility to share what we know with the people in our organizations.

What advice would you give other women considering a career in wood flooring?

Coates: If you're new to wood flooring, get involved with your customers so you know their issues. Volunteer in the NWFA and the local community. Get yourself educated and please speak up with ideas, even criticisms.

Russell: It is a great place to establish your career with many opportunities to see the world. My advice is always to listen more than you speak. When you do speak, know what you are talking about. And, enjoy yourself; this industry is filled with great people. ■



BARBARA **Titus**

RECIPIENT OF THE 2019 NWFA WOMEN'S INDUSTRY NETWORK AWARD

Being a woman in a male-dominated industry can be a challenge. For Barbara Titus, Vice President, Operations & International Sales with Sheoga Hardwood Flooring & Paneling in Middlefield, Ohio, it's just another day at the office.

"In 1991, I was looking for a challenging position and found out that Sheoga Hardwood Flooring was seeking an accountant to assist them," says Titus. "I knew the founder of the company for many years and loved the thought of working in a rural environment close to my home."

Initially, Titus joined the company as a forensic auditor where she helped establish a sound accounting process and audit trail. As her responsibilities evolved, she also provided accurate financials to help determine profitable product lines and paths for growth and domestic expansion.

Fast forward to today where Titus' responsibilities include overseeing Sheoga's international expansion as well. "I am the primary contact for our international partners," she says, "and my responsibilities include international travel to support our distributors overseas."

Titus has a significant role at the office as well. Within her Operations responsibilities, she oversees the office team, supports

“We need strong, informed, and passionate women within this industry. There are plenty of opportunities ... for them to compete, thrive, and succeed.”

– Barbara Titus

the sales team and production staff, performs cost/manufacturing process accounting and reporting functions, prepares financial statements, and promotes growth and brand recognition. “I am very hands-on,” she says.

Facing challenges is nothing new to Titus. As a young woman, she spent much of her time in and out of hospitals facing a series of life-threatening illnesses. “For many years, my primary struggle was my health,” she says. “After 36 years of personal battles with a body that would not cooperate, I have been in remission for six years. And my, what a fabulous six years it has been.”

Focusing on her faith has kept Titus grounded and motivated to pay it forward. She was the catalyst behind NWFA’s involvement with the Gary Sinise Foundation R.I.S.E. program (Restoring Independence Supporting Empowerment), which provides custom, specially adapted SMART homes for severely wounded veterans and first responders. This past December, NWFA and its members provided product, logistics, and installation services for its 42nd home, representing a total value of more than \$4.56 million.

As if that weren’t enough, Titus also is involved in a project benefiting veterans closer to home. VALOR Retreat (Veterans Are Loved Owed Respected) is being built within a 197-acre private reserve located in Hocking Hills, Ohio. The retreat is designed to provide a tranquil respite for combat veterans, their families, and Gold Star families, at no cost, to recover from the ravages of conflict, to heal, and to reconnect with nature, their families, and one another. Titus is spearheading the \$2 million campaign to construct eight handicap-accessible cabins and a lodge on the property by 2021, with the retreat being fully operational by 2022.

“I have been blessed with the opportunity to help our



Barbara Titus receives the 2019 Women's Industry Network Award. Shown here with Chris Zizza, immediate Past Chairman of NWFA (left) and Jim Schumacher, 3M (right).

Photo courtesy of NWFA

veterans,” she explains. “The losses and sacrifices they make do not end when they return home. Many face the hardest battle when they return to civilian life. Only in the 20th century have we reached a point where our logistical and medical capabilities for survivability on the battlefield have surpassed our mind’s ability to deal with it. We must support those that have fought to defend us. They don’t ‘deserve’ our help; they have earned it.”

It’s dedication and vision like this – both in the industry and out – that earned Titus NWFA’s first Women’s Industry Network Award in 2019, and she encourages other women to step up as well. “We need strong, informed, and passionate women within this industry,” she says. “There are plenty of opportunities...for them to compete, thrive, and succeed.” ■

JOIN US FOR THE WOMEN'S INDUSTRY NETWORK BREAKFAST AT THE 2020 NWFA EXPO IN MILWAUKEE.

Thursday, April 30 | 8:00 - 9:30 a.m.

ELIZABETH

Baldwin

**Environmental Compliance Officer
Metropolitan Hardwood Floors Inc.
Kent, Washington**

Elizabeth Baldwin's path to the wood flooring industry began in an unlikely way – while she was an English teacher in Japan.

"I was teaching business English, which is how I met Maruhon, a Japanese wood products importer and distributor," Baldwin recalls. "After about a year, they hired me as an assistant buyer and I started traveling the world to find new products for them."

When she eventually returned to the United States, Baldwin was committed to the international side of the wood industry, and began working with Metropolitan Hardwood Floors Inc. in sourcing. Japan had begun restricting formaldehyde emissions long before other places, so when the California Air Resources Board (CARB) applied rules and regulations to the wood industry, Metropolitan turned to her to guide them in compliance.

As Metropolitan's Environmental Compliance Officer, Baldwin focuses on the wood and chemicals that go into the flooring, complying with rules and trade regulations, and meeting certifications and standards. You'll find her sharing that knowledge via blogs for *Hardwood Floors* magazine, presentations at NWFA and International Wood Products

Association (IWPA) events, at the Hardwood Federation's annual fly-in, and as a guest speaker or instructor around the globe.

When it comes to what she enjoys most about the wood flooring industry, it all boils down to the people.

"The Metropolitan team is amazing, absolutely great to work with in every possible way. Plus there are so many incredible people all around the world – our super suppliers who have embraced the compliance culture, our customers who run their businesses safely by sorting through a myriad of contrasting compliance claims, and friendly competitors who are working so hard to do things right," she notes.

To women who may consider a career in wood flooring, Baldwin advises: "Don't compromise where it counts. I'm not talking about never giving up a percentage point or price or something like that. I'm talking about being willing to walk away from a profitable deal when you know something is wrong with it. I'm talking about doing the right thing always, even when people aren't watching. I'm talking about standing up for yourself when people want to dismiss you. 'Walk the talk.' And don't be afraid to ask questions."



"One of the best questions I ever heard was one that Paul Anderson, one of the Metropolitan owners, taught me. He would ask at the end of a meeting, 'What questions should I be asking, that I don't know enough to ask?' I have learned so much using that question."

– Elizabeth Baldwin

JAMIE

Beckwith

"I love the wood flooring industry and women have an exciting role to play in it. As a woman in the industry, I am always interested in collaboration and lifting each other up."

– Jamie Beckwith

Owner and Founder Jamie Beckwith Collection Nashville, Tennessee

As the owner of an interior design company, Jamie Beckwith could not find the custom flooring pattern she needed for a client.

"I wanted to make a jigsaw puzzle floor for the client's children's playroom," Beckwith explains. "I decided I would have to design and build it myself. After creating the first prototypes, I was intrigued by the concept of a wood tile hybrid. That is how my company, Jamie Beckwith Collection, was born."

Beckwith says it has been a long and challenging road over the years. From physically staining and sanding products to marketing and sales, she has done every job in the company at one time or another. In her current role, she looks for more opportunities to grow the Jamie Beckwith Collection and creates new distribution relationships, while overseeing day-to-day operations.

"I like creating materials that are unique and diversified in our industry. I want to create products that

inspire clients and designers to think outside the box, and I enjoy working with wood. I like the organic nature of it, its beauty, and the warmth it brings to interior spaces," she adds.

She attributes the company's success to creating products that are visually powerful and design-driven, along with a focus on quality and customer service. The wood wall and flooring tiles are designed and produced in Nashville, Tennessee, and come in a variety of patterns, wood species, and finishes. Jamie Beckwith Collection is even a past winner of the NWEA Wood Floor of the Year Award (Best Manufacturer Factory Finished in 2011).

Beckwith donates products to charitable organizations and believes in helping up-and-coming women that are trying to break into the industry. She enjoys speaking about the challenges of both the industry and being a women entrepreneur, noting that perseverance is vital.

"I would recommend that women learn their craft, educate themselves, and be flexible," she says. "Keep your ears open to listen and learn. Once you decide on your field in the wood industry, keep focused, and remain confident in your abilities."



KATHLEEN

Freeman

Sales

**Absolute Coatings Group
North Brunswick, New Jersey**

When Kathleen Freeman was nine years old, she chose to go work with her father instead of helping her mother and sisters clean the house. By the time she was 13, her father had taught her how to sand and finish wood floors.

After graduating from high school, Freeman went to the Fashion Institute of Technology (F.I.T.) and majored in Fashion Design. During those years, she continued working with her father full-time and attending college part-time. Upon graduation, she began working with a fashion house in New York City.

“It wasn’t a very well-paying job, with pay of \$150 per week. I had to borrow money to go to work almost every day. I decided to go back into the wood industry and work for my dad, who at that time, paid \$150 per day. I’ve been in the industry ever since,” she explains.

“The wood industry has come so far with all the new and old techniques we can use, even if it’s a re-scrape and the clients want it natural. We make the room, home, or projects warm and inviting to each person that sees it and hardwood floors bring style to the projects.”

Freeman began working for Absolute Coatings Inc. in 2002, and currently handles sales, technical, and

troubleshooting for the company. She has been involved with NWEA training, and was the first woman to become an NWEA Certified Installation Professional and Certified Sand & Finish Professional.

She also uses those talents as a way to raise money for her church. During an annual fundraiser, Freeman donates a sand and finish process good for up to 500 square feet. It has become such a popular auction item that she even does the floors for those who don’t ultimately win the bid – with proceeds going to the church.

Freeman says women who want to work in the industry should love working with their hands and being creative.

“A hardwood flooring contractor must have their wits about them and be able to think on their feet if a problem should arise,” she offers. “Be open to try new ideas and test them out for yourself until it’s perfected to use on a future project. Try things that scare you and work through them for knowledge and understanding to set yourself apart from those who hate doing that type of work.”



“I look at being a contractor more along the lines of being an artist, because every job we do is a canvas, some small and some large.”

– Kathleen Freeman

GRETE

Heimerdinger

**Co-Owner and Vice President
Lignomat
Portland, Oregon**

If someone on the phone asks if there is a man they can speak to, Grete Heimerdinger will smile to herself. It happens on occasion – and she smiles because after working in the industry for more than 40 years, she knows a lot about measuring moisture with handheld moisture meters.

Heimerdinger was a teacher in Germany until 1975 when she and her husband came to the United States to start Hildebrand Lumber Dry Kiln Co. At the time, each dry kiln was sold with a control system from Lignomat Germany. After acquiring Lignomat USA, she took on the role of selling moisture meters.

“I had taught physics and math in Germany, so it was easy to understand the technology behind the moisture meters, and I always enjoyed explaining the theory, the purpose, and usage,” Heimerdinger says.

The company’s start in the wood flooring industry began many years ago after attending an NWFA Expo.

“We were the only moisture meter company at that time, and many people asked, ‘Why do I need a moisture meter?’” she recalls. “Based on this, I started to write leaflets and papers to explain the relationship

between wood moisture and relative humidity. In the meantime, the industry is now more knowledgeable about the necessity to use a moisture meter when working with wood floors.”

Today, Lignomat offers pin and pinless moisture meters, moisture meters for concrete, lumber dry kiln controls, and other wireless monitoring devices for moisture and humidity conditions.

Heimerdinger’s responsibilities with the company include development, research, advertising, press releases, customer service, and attending trade shows.

It all ties back into her roots in education, though. Heimerdinger still frequently writes articles about wood floors, wood moisture, relative humidity, and using a moisture meter – pin or pinless – the right way, to help inform the industry.

“I have always considered whatever I did as a service to my company and my customers.”

– Grete
Heimerdinger



LISA

Horvath

**Co-Owner
ATC Hardwood Flooring
and Real Antique Wood
Irvington, New Jersey**

Lisa Horvath was introduced to the wood flooring industry by her husband, Gary, but she quickly made her own mark.

“Together, we built ATC Hardwood Flooring to be a successful business. Twenty-seven years and still going strong! Then eight years ago, we opened Real Antique Wood, our reclaimed company that has grown into something we could have never even dreamt of,” Horvath says.

It was 2011 when Gary approached her about the problems he faced with sourcing reclaimed wood flooring. He wanted to provide customers with the history of the old wood, and Lisa encouraged the idea of opening their own reclaimed wood operation. Since that time, they have been astonished at the lives touched through their love of old wood.

The Horvaths were featured on an episode of CNBC’s *Billion Dollar Buyer*. They have also won NWEA’s Wood Floor of the Year award (Members’ Choice in 2015). Lisa Horvath shows her support of the industry by attending events such as product demos, grand openings, and the NWEA Expo.

Horvath’s team says she has commonly done the work of five people, and her creative and business-minded approach was necessary to turn the dream of Real Antique Wood into a reality.

One of her favorite parts about working in wood flooring is the customers. She feels lucky that they let her and her team into their homes, and that they come into their showroom to purchase reclaimed flooring and order special custom pieces. It’s not just the customers who Horvath appreciates, though.

“Last October, I was diagnosed with breast cancer,” Horvath explains. “So, my contribution to both companies took a back seat to my treatment and all that was – and is – to follow. We were so lucky to have awesome people/employees in our life. They took on all the responsibilities I was doing so I could concentrate on me! What a blessing that is.”



“I would tell any woman to go for it. We make such a big difference in this industry. We have a huge presence!”

– Lisa Horvath

KERSTIN

Lindell

"It's important to have fun and be positive in everything you do. Learn from mistakes and then look for where you can feel inspired and joyful."

– Kerstin Lindell

**CEO & President
Bona AB
Malmo, Sweden**

After completing a Ph.D. in polymer chemistry, a master's degree in chemical engineering, and a Master's in Business Administration (MBA), Kerstin Lindell began work as a lab manager and international project leader for UV technologies. Then, she spent eight years as a research and development manager for industrial wood coatings at Akzo Nobel. She joined Bona as deputy CEO in 2006 and one year later, stepped into her current role as CEO and president of Bona.

"What I appreciate about the wood flooring industry is also what drew me to Bona – the sustainable nature of the material," Lindell explains. "Not only does a wood floor offer a

beautiful aesthetic to any space, but it can also be refinished multiple times inherently lasting for decades. Unlike other flooring surfaces that are often torn out and thrown into a landfill, wood floors offer an option to renovate the surface."

She admires the innovative nature of the wood flooring industry, noting the importance

of working toward safer and better solutions for the industry. Lindell says she is proud that Bona offers sustainable solutions, and in 2019, the company celebrated its 100th anniversary.

"The wood flooring industry is ever-evolving, which offers endless opportunities for women. From science to business to marketing, this industry intersects with a wide range of skill sets and career paths," Lindell says.

Part of Lindell's inspiration is linked to the ways Bona contributes to the global community. To name a few, Bona plants 600 trees (one tree for every employee) annually through the Plant a Tree program. Bona is part of Hand in Hand's Village Uplift Program in India, and they work with the STEPS research program at Lund University to develop sustainable plastics. Lindell has received leadership awards, served on multi-national boards, and is currently the Consul for the Netherlands in Southern Sweden.

"Regardless of gender, it's important to not only follow your passion, but also to look for places where you can make a difference," she advises. "For example, right now, the wood floor industry is in an important position to influence the betterment of sustainability in our world. How are you engaging in that dialog, and where can you create change? These are the places where we can all better our careers and at the same time, better our world."



KRISTI

Maxwell Prince

“Don’t be afraid to try any career that you enjoy. If you are skilled in an area that is traditionally male-dominated, you should go for it and don’t look back.”

– Kristi Maxwell Prince

**Chief Financial Officer
Maxwell Hardwood
Flooring
Monticello, Arkansas**

After school and during the summers, Kristi Maxwell Prince worked at her family’s business, Maxwell Hardwood Flooring. She learned every job they asked her to do there, and after finishing college, she moved to Dallas/Fort Worth, Texas, to work as an internal auditor for Lockheed Martin Corp. and RadioShack Corp.

In 2001, she returned to Arkansas and began working again at Maxwell Hardwood. Today, she oversees the financial responsibilities of Maxwell Hardwood and other family companies. This includes all financial planning, forecasting, compliance, and supervising personnel in the main office.

“Work hard, but work smart, treat people fairly, and take care of your employees, customers, and suppliers,” she advises. “These are simple principles we strive for, but when you are in the thick of business, it isn’t always easy. Maxwell Hardwood is a company of amazing individuals who make it happen every day just doing their jobs.”

Outside of the office, Prince serves on the Monticello Economic Development Commission Board, the University of



Arkansas at Monticello Foundation Fund Board, the Arkansas Forestry Association Board, the Drew Memorial Hospital Foundation Fundraising Committee, and the NWFA Education and Research Foundation Board. She is a life member of the National Association of Junior Auxiliaries and volunteers with the youth group at Pauline Baptist Church. She also takes the time to speak about business ethics, soft skills, and job pathways at high schools in her community.

As for what she enjoys most about the wood flooring industry, Prince says, “There are few industries remaining that work as ‘handshake’ deals, and for the most part, the wood flooring industry can still be done that way. It’s about the relationships with customers, suppliers, and even competitors that make it great.”

KELLIE Hawkins Schaffner

“The network of friends I’ve gained within the industry has been wonderful. It’s great to know so many experienced people who are willing to help.”

– Kellie Hawkins Schaffner

President & CEO Waterlox Coatings Corporation Cleveland, Ohio

From a young age, Kellie Hawkins Schaffner began helping her father and grandfather in the Waterlox office. The company was founded by her great grandfather, R.L. Hawkins in 1910, and every generation of the Hawkins family has worked there since. Schaffner has held a variety of positions at Waterlox, including quality control lab manager, national sales manager, and vice president, before being named president, and CEO in 2018.

Doing so, she says took hard work, knowledge, and friendships.

“It takes a lot of work to manage a small business,” Schaffner explains. “I am involved in pretty much every aspect of our company, but I love it. My knowledge of wood floor finishes started early on because of my family, but there is always something new, so staying current on the latest trends and continuing to read industry publications is a must.”

As president and CEO, she handles the daily operations and oversees her family’s tradition of creating wood finishing products. Schaffner also stays busy when she’s away from the office by contributing to both industry and charitable causes.

“We donate products to countless woodworking events and schools throughout the United States. We’ve been a member of the NWFA since our first show in 1988 and continue to participate in trainings and trade shows each year,” she says.

“For fundraising, The Leukemia & Lymphoma Society is near and dear to our hearts. We provide a platform to our customers, vendors, friends, and families to help and donate. We’ve been instrumental in helping to raise more than \$1.5 million for leukemia and lymphoma research.”

Schaffner believes the wood flooring industry is a great industry for women and that it is family-focused, since many companies are family-owned, and have generations of family members working there. She enjoys the camaraderie of the industry and how everyone supports each other. One of her favorite parts, though, is working with wood floor artisans and helping them protect their craft with her company’s finishes.



GENIA

Smith

**President
Accent Hardwood
Flooring Inc.
Durham, North Carolina**

Wood flooring ran in the family for Genia Smith. However, she didn't have any on-the-job experience when she joined her father's company, Smith Hardwood Floors, at the age of 22.

"I got my start as a \$5.00 per hour edger person in 1981," Smith recalls. "I ran edges, a Super 8, and installed truckloads of unfinished parquet on slabs. We made our own zero clearance table saws out of plywood, a Skilsaw, and a switch."

She worked in that role for a few years before returning to school, during which time she continued working weekends and summers. Eventually, she decided to strike out on her own and founded Accent Hardwood Flooring in Durham, North Carolina.

"I had a Super 8, edger, and a buffer that weighed about 1,000 pounds," Smith explains. "I did all the work myself for a couple of years. I then hired my first helper, Robert Honeycutt, who is still with me today."

More than thirty years later, she still manages the company and handles sales calls. She is a member of NWFA, and the

World Floor Covering Association. In 2004, Smith was certified as one of only 20 wood flooring inspectors nationwide by NOFMA.

Giving back to the community is a central part of Smith's company. She has led workshops on renovations for the local Historical Preservation Society. And, the company has installed flooring at no charge in Habitat for Humanity homes, senior centers, and hospice homes.

Regarding the best things about working in the industry, Smith answered, "Seeing the transformation of spaces with wood flooring, plus all of the people I have met along the way including the people that work here."

She advises other women who may be interested in working in wood flooring or other trades to learn all they can and to not be intimidated and to learn all they can.



"I'm really happy to connect with other women in the industry. We've come a long way!"

— Genia Smith

JANET Sullivan

"I am very passionate about our industry and enjoy what I am doing. Each year at Expo feels like a family reunion."

– Janet Sullivan

Flooring Specialist Lenmar, a division of Benjamin Moore & Co. Baltimore, Maryland

Janet Sullivan first took a job in the accounting and payroll department of Lenmar Inc., then she was asked if she wanted to try sales. Today, after more than 35 years of selling the Lenmar brand through wood flooring distributors, it's safe to say she instead found a career.

"I leaned heavily on my customers to learn the business and to answer some of the technical questions from the contractors," Sullivan recalls. "I went to the NOFMA school, then later all the NWFA classes, until one day I was told I could not be a student any longer – I had to teach."

She also attended seminars at the NWFA Expo each year, served on NWFA committees and the board, and ultimately went back to school for chemistry, learning anything related to coatings. In her current role with Lenmar, Sullivan handles everything from sales and marketing to technical calls.

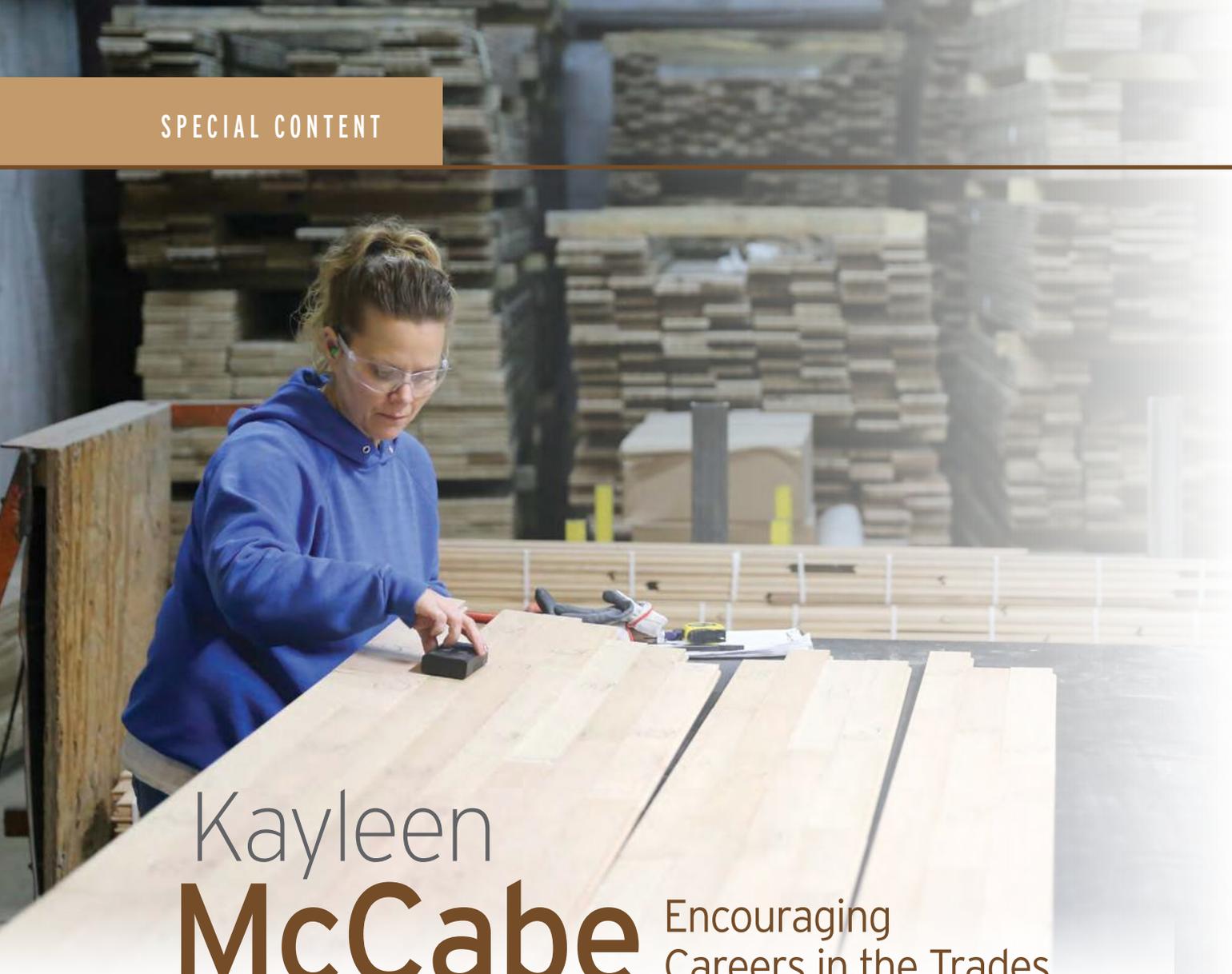
"I make sales calls on the distributors, analyze the markets, and look for future business. I prospect for the best customers to open the market for our products. I work with outside salespeople and contractors to teach



them all the features and benefits of the product line. I go out on complaint calls, and work with all parties involved to see it through to a resolution," Sullivan says.

While Lenmar sells into other industries, Sullivan truly enjoys the people in the wood flooring industry. She acknowledges it was difficult in the early days of her career, and that she really had to prove herself. Now she says the industry is a family; and that she has watched "the kids" take over family businesses.

"Today, it is a great time for women to enter into the wood flooring industry," Sullivan explains. "I have watched over the years as many women enter into this industry, and they are now enjoying the family of wood flooring professionals with rewarding careers."



Kayleen McCabe

Encouraging Careers in the Trades

For five seasons, DIY Network's *Rescue Renovation* showcased Kayleen McCabe's skills and passion for working with her hands. However, McCabe is much more than an acclaimed television host. She is a determined advocate of trade careers and education, as well as the NAWFA's apprenticeship program.



Kayleen McCabe

Through the McCabe Foundation, her work focuses on tightening the skills gap by encouraging young men, women, and veterans to consider careers in construction, advocating for women who want to succeed in traditionally male-dominated fields, and demonstrating to students that alternative paths to career success exist.

McCabe believes her passion can inspire future female contractors to see what opportunities are available to them after high school. "There is a great career for everyone out there, and there are multiple pathways to success. I grew up with the trades. For me, it was just a natural thing to do, and I never considered it to be an odd career. Looking back, though, what is frustrating is that I was never actively encouraged to do this career when I was growing up. I want to change that."

Speaking about her natural inclination to seek a career in the trades, McCabe credits her father. While his passion and expertise were

Photos courtesy of kayleenmccabe.com and NAWFA

an inspiration to her, she says he was hesitant about it being the “right” career for his daughter.

PHYSICALITY CONCERNS

“I wanted to go to tech school because my dad was a welder. As much as he inspired me, I also saw him go through carpal tunnel surgeries on his hand. I mention that because while my father knew it would be a great career for me, he was concerned about the physicality. There was a big push of ‘everybody go to college so you don’t have to do physical jobs.’ That kind of thinking was common, but the way I look at it now is that I am healthier than I have ever been because I work in construction,” says McCabe.

For women who may be concerned about working with things that are tremendously heavy or overly physical, McCabe believes hardwood flooring, in particular, is a career well worth exploring. “It is certainly physically demanding, but it keeps you in shape. It’s like doing yoga all day,” says McCabe.

A SENSE OF STABILITY

More critical than potential health benefits, McCabe believes a career in the trades also offers women a unique sense of stability that can benefit their lives in a wide variety of ways.

“There has always been this push of ‘a woman needs a stable job because she’s going to have a family someday.’ There’s the idea that a woman is going to need to take time off to have children and then come back to it. Later on, the prevailing thought is that a woman then needs a job that allows her to take time off to take the kids to school or the doctor,” explains McCabe. “While I don’t have kids, I do have a career that allows me to take time off when

I want. More importantly, the skills I have acquired have proven to be beneficial because I can take care of myself and my own home. I don’t have to rely on anybody.”

ADDRESSING THE WAGE GAP

McCabe says the idea of a wage gap is not something that applies when women seek out a career in the trades.

“Working in the trades, I’ve gained beneficial life skills. I’ve learned to be a better consumer, but I also make equal money. There is no wage gap. Knowing all that, why would you not recommend that young females look into going into the trades as a career?”

As for the idea of it being a somewhat intimidating, male-dominated field, she believes that, in reality, this is an unfounded concern. McCabe thinks that women in her line of work can make an existing team even stronger.

“There are a lot of industries seeking out female talent specifically because of our pace and attention to detail. Having more and more females on the job makes for a more dynamic job site. I think it’s more fun,” says McCabe.

IT’S NEVER TOO LATE

For women looking to enter into the trades, McCabe stresses that they can never start too soon or too late. The key is to pinpoint an area where they may have a passion and explore it as a possible fit.

“It’s never too late to start learning. As an example of that, I’m about to start welding. The toughest part just might be narrowing down what you want to do. My suggestion to women is to do a little bit of research and see what excites them,” advises McCabe.



All photos courtesy of NWFA

“There are so many opportunities out there to learn. Just look at all of the resources the NWFA offers. I don’t understand why anyone wouldn’t take full advantage of NWFA classes,” says McCabe. “If hardwood flooring is not your calling, then know that community colleges are also starting to offer a lot of different things. If you cannot decide, you can go there and dip your toes in.”

In addition to exploring these programs, McCabe advises students not to get discouraged by the cost of education.

“If you find something that you are passionate about, there’s a lot of opportunities to learn while you earn through paid apprenticeships like what the NWFA offers,” says McCabe. “Regardless of the path you take to get into the trades, I can’t stress enough what a wonderful career this is for both men and women. We come together like a family. I have been welcomed into this line of work because I want to learn, I understand that respect is earned and not just given, and I want to be a part of a team. With those things in mind, I believe anyone can be successful, regardless of being a man or a woman.” ■

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Construction Acoustics

in Floor Systems

Construction acoustics is the discipline that studies ways to control noise in rooms, buildings, and other environments by means of architectural design and acoustical construction methods. Construction acoustics is both a branch of applied acoustics and a division of structural physics.

Minimizing impact and airborne sound in any type of multi-family dwelling begins in the design and specification phase.

With the growing number of multi-family dwellings, having a general understanding of the basics of sound control systems ratings and what they mean as they relate to flooring selection, is crucial. How to utilize proper sound control/attenuation systems to be in compliance is vital in the design-build stages of projects. Non-compliance

A sound way to control noise

can be extremely costly for all parties involved, and often involves litigation.

A number of factors contribute to a room's sound insulating ability:

Floor/ceiling/wall construction and room size and shape.

Interior décor, such as wall hangings and curtains, and finishes and furnishings such as chairs, sofas, tables, and rugs.

Choice of **floor covering material**.

Use of a flooring **underlayment**.

The cumulative effects of all of these components are what provides the final sound characteristics of the space. No single component can fulfill

the requirements for the building requirements. These requirements consider the effects of the sum of these components.

In North America, there are two primary ratings used for sound control. They are Impact Insulation Class (IIC) and Sound Transmission Class (STC).

The protocol for specifying a flooring system is to first determine the IIC, or STC requirements, then work with the builder, architect, and specifier to identify a flooring and underlayment combination that aligns with the facility requirements.

IIC is a statistical measurement of the transmission of impact sound energy

AT THE SITE

Construction Acoustics (Continued)

through a floor/ceiling assembly system (such as footsteps, dropped articles, or furniture moving across the floor). The larger the number, the more sound attenuation you have. The scale, like the decibel scale for sound, is logarithmic.

- Delta IIC is derived by subtracting the IIC of the nominal 6" bare concrete from the IIC of the various tested assemblies. The higher the Delta IIC, the higher the performance level.
- Field Impact Insulation Class (FIIC) refers to testing procedures conducted in the field where sound is not as controllable.
- Apparent Impact Insulation Class (AIIC) refers to testing procedures conducted in the field within the space directly under the tapping machine where sound from associated support structures is attributed to the floor-ceiling assembly.
- Sound Transmission Class (STC) is a rating of how well a building partition attenuates airborne sound (such as voices, radio, or television) in the context of multi-family facilities. STC values are influenced by the solid mass of the structure, but are also dependent on isolation and resilience within the structure.
- Field Sound Transmission Class (FSTC) refers to testing procedures conducted in the field where sound is not as controllable.

Builders, architects, and specifiers often use lab and/or field tests when specifying floor/ceiling assemblies. Lab tests are a more-accurate model for predicting attenuation performance in a range of different construction types. Field tests are accurate only for the site where the tests were performed.

A NUMBER OF FACTORS CONTRIBUTE TO A ROOM'S SOUND INSULATING ABILITY:

1. Floor/ceiling/wall construction and room size and shape.
2. Interior décor, such as wall hangings and curtains, and finishes and furnishings such as chairs, sofas, tables, and rugs.
3. Choice of floor covering material.
4. Use of a flooring underlayment.



Acoustical underlayment systems are designed to create an isolation barrier between the installed flooring system and what lies underneath.

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When installing wood flooring in multi-family dwellings, in most jurisdictions, there are minimum IIC and STC values that the floor/ceiling assembly must achieve. It is necessary to take into consideration the building code standards including Uniform Building Code (ICC/UBC) or International Building Code (IBC), both of which call for minimum 50IIC (45IIC if field tested) and 50STC (45STC if field tested) values.

In addition to building code standards, many homeowners associations (HOA) have their own minimum standards written into their covenants, conditions, and restrictions (CC&Rs), which will supersede, and are often more-stringent than the minimum building code requirements. Specification of the proper sound control system with any floor covering change-out/remodel in existing buildings is just as vital in the design-build stages of new construction projects.

There are many different sound control systems and installation options when specifying the project. Installation methods may include floating, glue down, or nail down, but each method has its own unique variables to maintain the control of sound. Follow the flooring and underlayment manufacturer installation instructions and

ensure the product used is a part of an entire sound control system.

Acoustical underlayments are especially important when specifying and installing wood floors for multi-level structures like apartment buildings, condominiums, or within commercial facilities. The use of acoustical underlayments for wood flooring is important for impact sound (IIC rating) such as footfalls, objects dropped on the floor, etc. The type of sound control system used will be dependent on a number of variables, including the type of flooring used, type of substrate, concrete thickness, ceiling suspension, framing structure, and the entire floor/ceiling assembly.

Each acoustical underlayment system is designed to create an isolation barrier between the installed flooring system and what lies underneath. During installation, avoid hard surface transference points. The floor should not come in direct contact with any vertical obstruction. Never nail through an acoustical underlayment system, as doing so will compromise the specified IIC or STC ratings, as well as the long-term performance of the wood floor. The objective is to keep the entire floor assembly an isolated and independent unit. Some HOAs may have written in their CC&Rs to use acoustical foam in the expansion space, as well as acoustical sealant to meet their standard.

Acoustical adhesive systems are also available from many flooring adhesive manufacturers. These systems require a clear understanding of the application and how it influences the entire floor/ceiling assembly system. First, acquire third-party testing validation from the adhesive manufacturer for its published IIC and STC ratings. It is critical to

use the proper trowel to ensure application allows for the intended outcome. The trowels used for sound control usually are specifically designed to allow the flooring to remain adhered to the subfloor, while leaving dead-space beneath.

With any installation method, the moulding should not come into direct contact with the flooring. A small gap should be left between the moulding and the wood floor. The moulding fasteners should be driven into the wall, and not into the flooring.

Controlling sound within any installation project is not solely the responsibility of the wood flooring installer. Sound control is a cumulative function of all of the components of the flooring, subflooring, underlayments, ceiling assemblies, and wall assemblies. The builders, architects, and specifiers on the project take into account all of these components and plan the project by specifying products and systems that, together, fulfill the IIC and STC requirements for the building. It is only the responsibility of the flooring installer to use products that conform to the specifications, and to install them according to manufacturer instruction. ■

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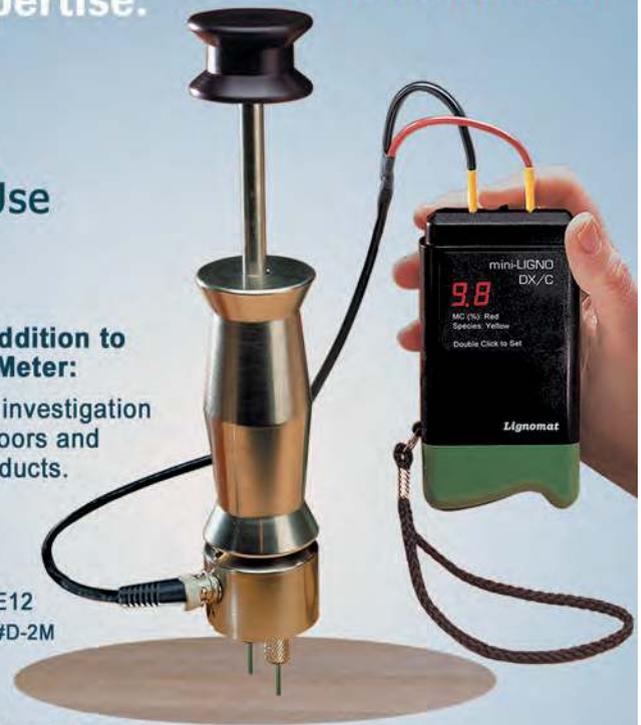
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AT THE SITE

Designing and Installing **RADIANT FLOORS** with the 2019 NWFA Guidelines

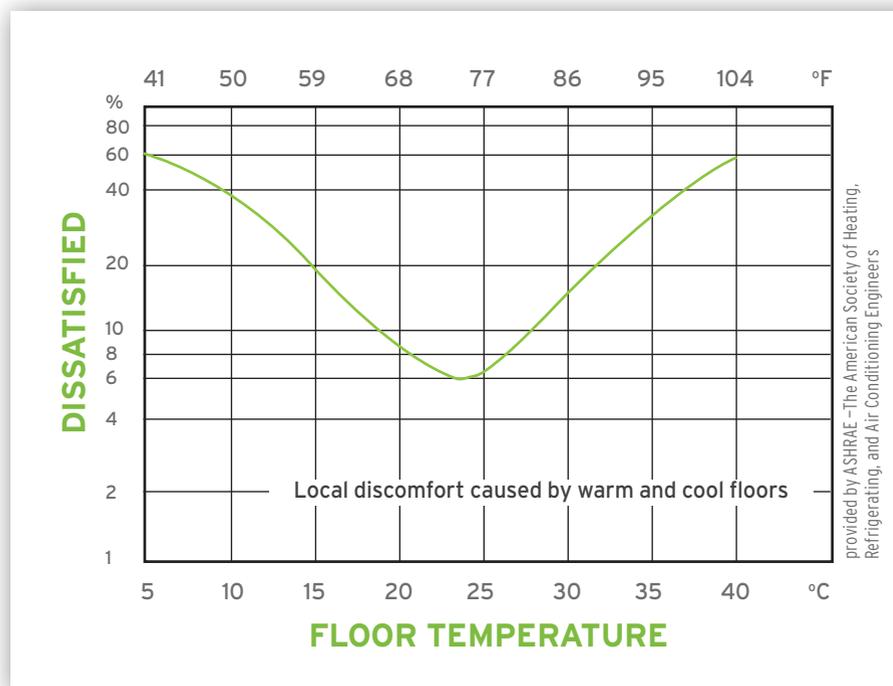
The National Wood Flooring Association (NWFA) put together a Radiant Heat Taskforce, made up of many experts from the radiant heating industry, including members from the Radiant Professionals Alliance (RPA). Together, the Taskforce developed maximum recommended allowable operating temperature guidelines for wood floors. The guidelines were developed in response to recurring failures of hardwood floors placed over radiant floor heating systems.

Failure analysis indicated excessive and extended radiant heating system operating temperatures, in conjunction with poor or no relative humidity control, and in some cases, missing or poor subfloor insulation, leading to longer than normal run times of both hydronic and electric floor heating systems. The net effect resulted in the wood product showing signs of cracking, checking, panelization, warping, and cupping.

If you are in the radiant floor heating business or the hardwood flooring business, it is important that you understand these new guidelines and the limitations they impose on radiant floor heating

systems. The new guidelines limit the maximum floor operating surface temperatures of the installed wood floor to 80°F.

When maintaining an indoor air temperature of 70°F, a radiant floor being maintained at a surface temperature of 80°F will deliver approximately 20 BTUs per square foot per hour, which is sufficient for most homes.



Floor Temperature Discomfort



By Mark Eatherton

As responsible comfort system designers know, the very first task in the design of a radiant heating system is to perform a heat loss calculation for the areas to be served by the system. Beyond the NWEA guidelines, radiant floor heating systems are often limited to a maximum recommended operating temperature of 85°F where prolonged human contact is expected, with the exception of bathing areas, locker rooms, and swimming pool surrounds, where temperatures are allowed to go as high as 90°F.

If the pre-installation heat loss calculation indicates that floor surface temperatures of 85 to 90°F are required to meet the heating load, then hardwood floors are not recommended in those areas.

85°F is not a physical limitation, but rather a human physiology limitation. When a human comes into contact with a surface temperature greater than 85°F, the hypothalamus gland (which regulates body temperature) believes your body is going to overheat, and it goes into cooling mode, which we recognize as sweating. Sweating is not considered comfortable by human comfort standards. According to the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), a floor surface temperature that creates optimal human comfort for most people lies somewhere between 70-80°F. The 80°F maximum surface temperature limitation was derived through the Radiant Heat Taskforce for wood floors only. (See chart on previous page.)

In newer homes with high R-value wall, floor, and ceiling construction using controlled energy recovery or heat recovery ventilators, the heat load calculations rarely exceed a 15 BTU per square foot per hour floor heat output. In this situation, the floor will only need to be maintained at a maximum operating temperature of around 77°F, posing

no risk to wood flooring. It is only in areas with extensive glazing, and older dwellings with lower R-value construction, that the load can be above 20 BTUs per square foot per hour, becoming problematic for a wood floor. In these scenarios, the designer must augment the floor's maximum threshold of 20 BTUs per square foot per hour with other means of heat delivery, or the warranty on the wood floor may be violated.

For example, depending on the construction methods being employed, the augmentation heat could be accomplished with a conventional hot water baseboard, if both the architect and homeowner are willing to accommodate the convectors and their associated esthetics, and provide a means of mounting the convector to a wall beneath the glazing system.

Generally speaking, for this to work, the designer of a hydronic heating system must provide a high temperature circuit (180°F) to allow for the convectors to perform to their maximum. If the glazing is run from ceiling to floor (which is quite often the case in mountain settings), it may be necessary to incorporate a subfloor convection system, using either a natural or forced-convection design. This may require major modifications to the structure to accommodate the subfloor convector boxes. Forced-convection takes up much less physical space than subfloor convective systems, but they bring the baggage of noise into the comfort equation.

Make certain that the consumer is aware of these issues (noise and/or structural modifications) before signing on the dotted line. If the heat source is limited to an operating temperature of

AT THE SITE

Radiant Floors (Continued)



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less than 120°F (air or ground-source heat pumps, for example), then the recommendation is to consider the use of a radiant ceiling and/or radiant wall heating system to augment the radiant floor's limited capacity, and/or the use of forced-air convectors. It is strongly recommended that this second heat source be controlled by a 2-stage thermostatic controller.

The NWFA guidelines recommend the use of a floor temperature-limiting type of thermostat, in addition to the air temperature sensing portion of the typical thermostat. They also recommend the use of a data logger to record the maximum floor operating temperatures for the purpose of assuring compliance with the temperature limitation guidelines, as well as warranty coverage by the wood floor manufacturer. It is also important to note that humidity control is strongly recommended. A humidified home results in a happy floor, and the occupants will be much healthier, too.

Finally, not all wood floor manufacturers limit their products installed surface temperature to 80°F. Check with the hardwood flooring supplier and the flooring manufacturer and make certain that your design is compatible with their recommendations. It is also suggested that you familiarize yourself, and your heating system designer, with the NWFA guidelines, which can be reviewed at nwfa.org/technical-guidelines.aspx.

The bottom line is that details must be recognized, surface temperature limitations followed, and a system developed around the product's limitations. If you are not responsible for providing the humidity controls or data loggers, make certain that the owners are made aware of this important detail to avoid possible issues with the finished product. ■

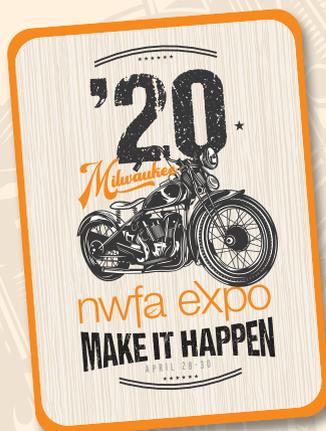
Mark Eatherton is Technical Committee Chair for the Radiant Professionals Alliance. He can be reached at markeatherton@mac.com. For more information about the RPA, visit radiantprofessionalsalliance.org.

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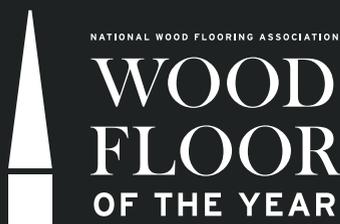
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PREVENTING CALLBACKS

in Wood Flooring Installation

Understanding How High Moisture Levels Affect Long-Term Floor Performance

Some of the most common pitfalls of flooring installation center around excessive moisture levels. Moisture at job sites is difficult to control and is particularly problematic when present at the time of flooring installation. Minimize the risk of future problems with wood flooring by following these recommendations, developed with input from the National Wood Flooring Association (NWFA).

NWFA Recommendations

Installation of the flooring material onto the subfloor/substrate requires significant consideration of the job site, including the ambient temperature and relative humidity at the time of installation. The complete list of variables that may affect a wood floor is noted in NWFA's Wood Flooring Installation Guidelines and Methods. In short, the following criteria should be met (see NWFA guidelines for more specific requirements):

1. **The building** should be conditioned to the level of moisture/humidity expected during service life.
2. **The subfloor** must be properly prepared prior to wood flooring delivery or installation.

3. **The moisture content** of the wood flooring and the subfloor should be within 2 percent for plank flooring (boards 3 inches or wider) and 4 percent for strip flooring (boards less than 3 inches wide).
4. **The subfloor** and floor system must be flat, with all components adequately attached, allowing no independent movements in the system that may create floor noise.

Typical Conditions Caused by High Moisture Conditions

1. **Flooring boards expand** as they pick up moisture from the air or from floor sheathing with elevated moisture levels. This expansion forces the flooring boards more tightly together. Specifically:
 - When expansion is restricted, flooring board edges can ridge upward, applying greater pressure to the fasteners located along the tongue of the boards.
 - Tight joints along tongue-and-groove and end-joints of flooring boards can create noises when rubbing against adjacent boards as a result of foot traffic.
 - Expansion areas around the perimeter of a room and vertical penetrations, such as columns or built-in cabinets, leave no space to permit the full expansion of flooring boards.
 - A common cause of floorboard cupping is excessive moisture on the underside of flooring that

results from insufficient conditioning of the subfloor panels prior to flooring installation.

- Expansion can also cause flooring to lift off the subfloor, which can lead to floor noise.
2. **Noise from the flooring** can occur any time the flooring is inadequately attached to the subfloor sheathing. This is usually caused by improper fastening schedules, improper fasteners, exposure to moisture, improperly selected subfloor material, or movement in the floor system beneath the flooring.
 3. **Subfloor sheathing panels** shrink as they decrease in moisture content, pulling flooring boards apart as the floor system dries out. This can lead to irregular, wide gaps between flooring boards along joints in the subfloor sheathing, and most commonly, noisy flooring systems.

Minimize the Risk

In new construction, moisture conditions are seldom optimal. In order to compensate for installations that may pose concern, consider some of these simple ways to minimize your risk and create a floor that will perform well for years to come.

1. **Check the crawlspace** to see if it is conditioned, or that there is a vapor barrier membrane in place on the crawlspace ground, and that it is



By Mary Uher

RECOMMENDATIONS TO MINIMIZE THE RISK OF CALLBACKS IN WOOD FLOORING INSTALLATION

Recommendations	Estimated Increase
Reduce moisture content of subfloor panels at time of flooring installation as recommended within 2% to 4% of flooring moisture content.	Basic requirements
Use 2" (not 1-1/2") fasteners in 23/32" subfloor.	25% increase in fastener penetration into subfloor over 1-1/2" fasteners ^a
Use 2" (not 1-1/2") fasteners in 7/8" subfloor.	50% increase in fastener penetration into subfloor over 1-1/2" fasteners ^a
Use 2" fasteners in 7/8" subfloor rather than 23/32" subfloor.	20% increase in 2" fastener penetration into 7/8" subfloor over 23/32" subfloor ^a
Use 15 gauge staples rather than 16 gauge staples.	15% increase in fasteners withdrawal capacity over 16 gauge staples ^b
Decrease spacing of flooring fasteners from ≥ 10" on center to 8" on center (o.c.)	20% increase over 10" o.c. ^c or greater fastener spacing
Decrease spacing of flooring fasteners ≥ 8" o.c. to 6" o.c.	25% increase over 8" o.c. ^c or greater fastener spacing
Locate fasteners within 1-1/2" from flooring board ends (not 3") if this does not cause end splits.	Good practice

- a. Resulting from the increase in the length of fastener that penetrates into the subfloor. Assumes 3/4" flooring boards with fasteners installed at a 45° angle at the board edge and located 2/3 of the way up from the bottom of the floorboards.
- b. Based on the difference in the staple withdrawal design values published in ICC-ES ESR-1539 for ISANTA.
- c. Resulting from the increase in the number of fasteners due to the reduced fastener spacing.

2. **Consider methods to remove excess moisture** from the framing/ floor sheathing and the rest of the interior of the building prior to installing the flooring (such as using an auxiliary dehumidifier in the short-term), in order to get everything to a moisture content that coincides with the flooring manufacturer's requirements.
3. **Follow the recommended fastener schedule** or consider augmenting the attachment by spacing the fasteners at closer intervals. For example, if the recommendations are fastening 8 to 10 inches apart, keep fasteners no further than 8 inches apart. (According to the NWFA Guidelines, tighter fastener schedules are acceptable as long as the tongue and core material of the flooring is not compromised or split during installation.)
4. **Make sure that the length and diameter** of the flooring fasteners meets or exceeds flooring industry and the manufacturer's recommendations. Flooring manufacturers typically recommend a minimum length of fastener. The greater the length of the fasteners' embedment in the wood subfloor or the larger shank diameter of the fasteners, the greater the fastener withdrawal capacity.
5. **The recommendation for fastening of solid wood flooring boards** is often within 1 to 3 inches of end joints. Keep fasteners within 1 to 2 inches of end joints, when possible, to better stabilize movement.
6. **Consider using an approved wood flooring adhesive** in conjunction with the recommended fastener schedule (glue-assist) for flooring being installed over conditioned spaces or with an approved liquid vapor-retarding system to control moisture mitigation.
7. **In some situations, it may be necessary to build in expansion rows** within the flooring system. This may include built-in gaps within the floor, t-molding transitions, cork, or other methods.

For additional information, visit <https://www.apawood.org/high-moisture-and-wood-flooring> ■

Mary Uher is the Region Manager, Field Services Division, at the Engineered Wood Association (APA) in Tacoma, Washington. She can be reached at mary.uher@apawood.org or 253.620.7400.

Experts weigh in on the use of

OSB

The latest 2019 NWFA Guidelines define high-performance oriented strand board (OSB) as: “OSB products that have obtained a third-party evaluation documenting greater strength and stiffness compared to either plywood or commodity OSB by virtue of their engineered design and makeup.”

To learn more about these products and how they may be used, we asked experts with Huber Engineered Woods, Louisiana Pacific (LP) Building Solutions, and Weyerhaeuser their thoughts on this category.

What advantages do you see with high-performance OSB products being used in home construction today?

Kelly Harmon, Senior National Product Manager for OSB and EWP for LP Building Solutions:

In today’s construction, with larger and more complicated homes, the cycle to get these homes to a “dried-in” state is taking longer. That means more exposure to the elements, which can compromise the performance of

some products used for the structural frame. Not only reducing performance, but also shortening the life of these products due to delamination, flaking, swelling, and lateral movement. This is the main reason that more and more builders are using a high performance OSB. This high-performance OSB will help resist the performance issues you could encounter with commodity OSB. In addition to protecting the floor while being exposed to the elements during construction, it also provides phenomenal nail/staple retention values due to the high density of wood strands, MDI resins, and waxes. This helps in the consistent performance that you will need when dealing with hardwood flooring.

Alex Kuchar, OSB Technical Manager for Weyerhaeuser:

High performance OSB absorbs less moisture, is more durable, and is easier to install. With more demanding floor finishes like hardwood and engineered wood flooring, a high performing panel will absorb less moisture when compared to the commodity OSB. These flooring products improve durability, and performance on the job site.

Mike Pyle, Director of Technical Services for Huber Engineered Woods:

High-performance subflooring panels typically have strength, stiffness, and fastener holding power that surpass commodity offerings and are validated in a published evaluation report by an accredited third-party agency. These physical properties directly influence the overall performance of hardwood floors, especially deflection. A lot of attention is paid to fastener holding power, which is important, but the bigger influencer of performance is subfloor stiffness. Squeaks from staples or cleats occur when a fastener can no longer bear the stress a sagging or bouncy subfloor puts on the fastener. The more you control the deflection of the subfloor, the less stress is transferred to the hardwood flooring fastener and the risk for squeaks is lessened. Diagnosing and fixing squeaky hardwood flooring can be costly in terms of time, dollars, and reputation. High-performing OSB subfloors deflect less and hold hardwood flooring fasteners better than commodity OSB, which results in lower risk of squeaky floors and unhappy homeowners.



What are the benefits?

Harmon: Exceptional fastener holding and the resin technologies used in these products provide exceptional strength, stiffness, and moisture resistance qualities that allow manufacturers to provide exceptional warranties.

Kuchar: The homeowner can feel the solid floor stiffness when they walk into a home. Having a higher performing OSB will give you less deflection, when compared to a commodity OSB, which translates to a 'solid' floor that consumers can feel. For the builder, high-performance OSB will absorb less water compared to commodity OSB. The builder will experience less panel swelling, which will shorten the dry out time. The lower moisture absorption will also lead to a better fastener performance when the finished floor is nailed to the subfloor.

Pyle: A few standout benefits of high-performance engineered panels are the reduced risk of squeaky floors and, overall, a better feel underfoot. This results in the ultimate benefit – happy homeowners and fewer callbacks.

How do these products affect the builder who implements a moisture management plan during the construction of the building?

Harmon: For builders who want high performance products that help mitigate issues with water and/or moisture, high-performance OSB used for subflooring provides that needed element to ensure the floors of the home will not have reoccurring issues and perform for a quieter floor to foot traffic. After all, most of the call-backs, floor performance issues, and headaches come from the subfloor



BIGSTOCK ©

that gets exposed to the elements during construction. So why not use a high-performance product to help minimize these issues?

Kuchar: Using a high performing OSB can lead to reduced call backs. Since they absorb less water and dry out faster, it can also mean a faster building cycle, which will save the builder time and money.

Pyle: The moisture relationship between hardwood floors and the subflooring is critical for quality performance and appearance for both the short- and long-term. Commodity OSB has a reputation for swelling and losing strength when it is exposed to rain during construction. Similarly, plywood is known for not staying flat and for delaminating when exposed to a lot of wet weather. Builders have to

think and plan how the products they choose will withstand the rigors that the construction process puts on them and if they can withstand the abuse. High-performance OSB subfloors are moisture resistant and durable enough to withstand the construction process. They typically have lower water absorption rates, which means they take in less water when rained on during the construction process. Less rain in the panel results in less water that has to dry out before hardwoods can be installed, which lowers the risk of problems in the hardwood flooring installation.

How should moisture testing be conducted on high-performance OSB?

Harmon: When measuring the moisture content of our single-layer structural subflooring in the field, either a hand-held pin-type or pinless meter should be used. The pin-type measures electrical resistance between the two pins that are pressed into the subfloor, and the pinless meter is laid atop the surface of the panel and uses the principle of electrical impedance to measure moisture content.

Kuchar: For testing moisture content of our products in the field, a pin-type moisture meter should be used.

Pyle: Use a pin-type moisture meter for measuring the moisture content of our subflooring panels. In order to get the most accurate reading, the user just needs to ensure it is set to the correct species setting. Most come with an OSB setting.

These high-performance subfloors are being used in more new construction buildings today than ever before. Be sure to understand the subfloor you are installing over to adequately prepare it for wood flooring installation. ■

TECH TALK

with



Avi Hadad



Kjell Nyman



Ben Totta

“What types of subfloor conditions do you see that can cause issues with the sanding process?”

AVI HADAD

One of the most common subfloor issues is lack of rigidity. The subfloor could be lacking proper support from the framing underneath, wrong thickness, or both. This weakness in the subfloor will cause sanding machines to vibrate during sanding, and could lead to chatter marks. Other issues might develop over time as the floor is walked on, creating micro deflection with use. The finish might stretch and develop tear lines on the seams, or just flake off from lack of adhesion.

BEN TOTTA

Working predominantly over wooden subfloor systems, we often deal with solidness/fastening issues. Poor subfloor fastening leads to excessive movement of the subfloor and flooring. This movement can allow for machine wheels to dip, creating side cuts and digs, which take extra attention to flatten. It also can mean filler may not hold well in gaps, and works its way out, often before sanding is completed. We try to recognize and avoid filling seams in these floors. Movement also often means squeaks, which are a nuisance to most anyone. The best time to address them is prior to refinishing the floor.

KJELL NYMARK

A common subfloor condition that can cause sanding issues is excessive movement due to deflection or loose subfloor boards. Excessive movement can cause chatter or wave. It's always advisable to ask questions about how the subfloor is constructed or look at the subfloor construction (when you are able to do so). A good question to ask either the builder or homeowner is, “How old is the home?”

Older homes may have a solid board subfloor. These subfloors were usually laid on a diagonal and fastened using common nails without the use of adhesive. The wood flooring that was laid over top of these subfloors was laid perpendicular to the floor joists and nailed using common or flooring nails driven in by hand. When this type of floor was hand nailed, they drove the nails directly into the floor joists (16” on center) to avoid the “bounce back” that would occur if you tried to drive the nail in between the floor joists. These boards may become loose over time and if the wood floor has been sanded a few times, the amount of deflection or vibration increases.



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HARDWOOD HINTS

By Rusty Swindoll



This is a good reminder for contractors who install engineered and solid prefinished wood flooring when using adhesives for full-spread and glue-assist: Always clean up adhesives that get on the face or ooze up between the edges during install. The quicker you clean it up, the less-likely it will get stepped in and spread. Adhesive left on the face of the wood flooring is hard to remove – especially days later – and can sometimes cause damage to the finish. Always follow the manufacturer’s recommendations for using an adhesive remover and clean up the day of installation. ■



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ADA Compliance with Subfloors

The Americans with Disabilities Act (ADA) requires most places open to the public are in compliance with their accessibility requirements for people with disabilities. The 2010 ADA Standards for Accessibility specifically outline the following design requirements for floors subject to this law.

302 Floor or Ground Surfaces

302.1 General. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.

EXCEPTIONS:

1. Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.
2. Areas of sport activity shall not be required to comply with 302.

Advisory 302.1 General. A stable surface is one that remains unchanged by contaminants or applied force, so that when the contaminant or force is removed, the surface returns to its original condition. A firm surface resists deformation by either indentations or particles moving on its surface. A slip-resistant surface provides sufficient frictional counterforce to the forces exerted in walking to permit safe ambulation.



Figure 302.3
Elongated Openings in Floor or Ground Surfaces

303 Changes in Level

303.1 General. Where changes in level are permitted in floor or ground surfaces, they shall comply with 303.

EXCEPTIONS: 1. Animal containment areas shall not be required to comply with 303.
2. Areas of sport activity shall not be required to comply with 303.

303.2 Vertical. Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical



Figure 303.2
Vertical Change in Level

Graphic courtesy of ada.gov

SOURCES: 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN. WASHINGTON, D.C.: DEPT. OF JUSTICE, 2010.

For more
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Visit:
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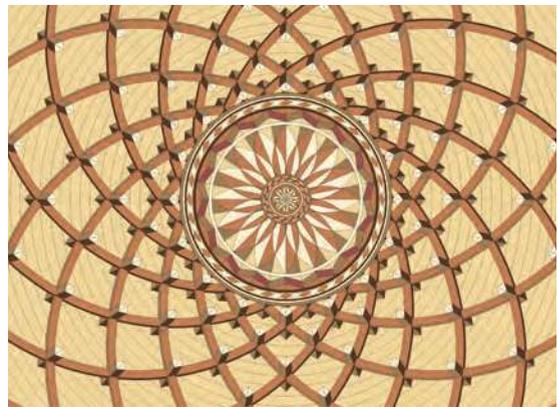
3 Days to CIM takes place four times a year in major cities around the US. For more info and upcoming dates, go to <https://www.fcica.com/3-days-cim>.

FEATURED CATEGORY:
BEST USE OF TECHNOLOGY APPLICATION

With the proper application of new and emerging technology, once impossible designs can leap into physical being and become tangible. Such is the case with this gorgeous Wood Floor of the Year by Czar Floors.

Visualizing the Impossible

By Burt Bollinger



INSPIRED BY M.C. ESCHER

M.C. Escher is a historical figure famous for his mathematically inspired woodcuts and lithographs. His artwork often revels in the visualization of the impossible. However, thanks to both the creativity and technological prowess of the designers and installers of Czar Floors, we can now see an M.C. Escher-inspired 3D drawing leap to life in a glorious living room installation.

ART AT YOUR FEET

“The design and installation of wood floors is an art form. We had our first inspiration many years ago from visiting Czar’s Palaces, Hermitage, in St.Petersburg, Russia. The floors there are the best attractions. Our original motto at Czar Floors was ‘Art at your feet,’” says Edward Tsvilik, Czar Floors Vice President.

PRODUCING THE IMPOSSIBLE

“For this Escher-inspired award-winning floor, the design phase was a tremendous challenge for us. We had to come up with a design that somehow blends our modern Escher-inspired 3D art with the Baroque style of the room and furniture. Thankfully, our craftsmen are experts at finding solutions for any difficult task. We have excellent CNC/machinery engineers and technicians that can do seemingly impossible things using equipment built years ago completely in-house,” explains Tsvilik.

In addition to their CNC equipment and skilled technicians, Czar Floors uses a wide variety of both custom and off-the-shelf software to assist with the development of their stunning designs. Some are standard computer software such as Adobe Illustrator, Photoshop, AutoCAD. Other, more advanced proprietary tools are used to help Czar Floors minimize waste when cutting lumber pieces.

“We also developed a few web-based software solutions that allow easy experimentation with designs. One called ‘Floor Designer’ allows us to design an entire room with the placement of borders, medallions, and parquet while calculating cost and quantity,” says Tsvilik.

DESIGN AND INSTALLATION

“For this Wood Floor of the Year winner, from beginning to end, the project took about four months. A lot of time was spent assembling the entire floor in our shop to ensure proper fit. The final installation itself was done in about three weeks. The 450-square foot parquet floor features a variety of wood species, including pear, merbau, walnut, wenge, maple, and white oak,” says Tsvilik.

On the reaction the floor has received, Tsvilik said the feedback has been overwhelmingly positive.

“That said, some have mentioned this is not a floor that they would want to walk on after a few drinks. Others who have seen the floor remark on the decision the home’s owners made in placing furniture over such a unique design,” remarks Tsvilik.

ADVICE FOR OTHERS

“We spent quite some time researching more than 150-year-old books on parquetry and marquetry. We’ve strived to learn from French and Italian wood floor artisans and furniture makers. It’s essential to us that we never stop learning. This is why the NWFA is such a great resource for us. My advice to others is to use every training opportunity and read all the manuals NWFA has for advanced installation. Also be sure to dedicate yourself to reading magazines, blogs, and watching YouTube videos dedicated to both the trade and new techniques,” advises Tsvilik. ■



CATEGORY DETAILS:

Entries in this category have installed floors utilizing advancements in technology (CNC, laser, etc.).

SUPPLIERS:

Adhesive: Bostik

Sanding Equipment: Bona, Festool

Finish: Bona

Saw: Festool

Sander: Lägler

INSTALLATION TYPE:

Glue-down

FLOORING TYPE:

Solid

FLOORING STYLE:

Parquet

FLOORING FINISH:

Job Site Finished

FINISH SHEEN:

Semi-Gloss

FINISH TYPE:

Water-Based

SPECIES:

Pear, Merbau, Walnut, Wenge, Maple, White Oak

SQUARE FEET:

450



(*Psuedotsuga menziesii*)

The *Psuedotsuga* (Douglas-fir) genus contains only about seven species of trees in North America and eastern Asia. Douglas-fir is a softwood species, meaning it is needle-bearing and produces pinecones. For the purpose of the wood flooring industry, we will only focus on the two species found in North America.



ORIGIN:

Douglas-fir grows primarily from the Rocky Mountains to the Pacific coast and from Mexico to central British Columbia. Most Douglas-fir production comes from California, Oregon, Washington, Vancouver, and the Rocky Mountain states.

USES:

Douglas-fir is used primarily for plywood, decorative veneers, structural beams and dimensional lumber, cooperage stock, formwork, packing cases, boxes, pallets, crates, marine piling, fencing, railroad ties, and wood flooring.

COLOR:

The color can vary based on age and location of the tree. The heartwood can vary from yellowish tan to light brown, and the sapwood can be whitish to tan or pale yellow to a reddish-white. Douglas-fir can change color dramatically when exposed to sunlight.

GRAIN:

The grain is normally straight, with an occasional wavy or spiral texture. Older-growth Douglas-fir has a tighter grain pattern that exhibits a distinguishable contrast between earlywood and latewood. The color transition is more gradual in faster-grown Douglas-fir trees. Most Douglas-fir wood flooring is cut into vertical-grain (quartersawn), bastard-sawn (riftsawn), or end-grain.

HARDNESS (JANKA):

620 lb/f

DIMENSIONAL STABILITY:

Above average - Douglas-fir has a dimensional stability factor of 4.8 percent (radial) and 7.6 percent (tangential), meaning this species may shrink/swell up to 7.6 percent of its given width, depending on how it's cut, when going from green (30 percent MC) to oven-dried.

DIMENSIONAL CHANGE COEFFICIENT:

.00165 (radial), .00267 (tangential)

SPECIFIC GRAVITY:

.45

NAILING:

No known problems when nailing Douglas-fir. Douglas-fir glues and bends well.

SANDING:

Douglas-fir sands satisfactorily when following the proper sanding sequence. It is a softer wood and normally cuts very easily with higher grit abrasives.

The sap in Douglas-fir can build-up on sandpaper, causing it to





ALL IMAGES BIGSTOCK ©

become loaded quicker than when sanding other species. Age, and sun-related color change on Douglas-fir run deep into the wood, and normally cannot be sanded out.

INTERESTING NOTES:

Douglas-fir is the official state tree of Oregon. Douglas-fir is named after Henry Douglas, a Scottish botanist who traveled to North America. The scientific name is in recognition of Archibald Menzies, a Scotch physician and naturalist who first discovered and described the tree in 1793 on Vancouver Island, British Columbia. The lifespan of the Douglas-fir tree can be anywhere from 500 to 1,000 years, and can grow as much as 200 feet tall, and up to 6 feet in diameter. Douglas-firs were used by Native Americans to cure common ailments such as stomach aches, headaches, rheumatism, and the common cold. ■

Sources: The Wood Database; Copyright © 2008-2016, Eric Meier |
Wood Handbook (Wood as an Engineering Material), USDA Forest Products Laboratory |
Wood Identification and Use; Terry Porter |
National Wildlife Federation

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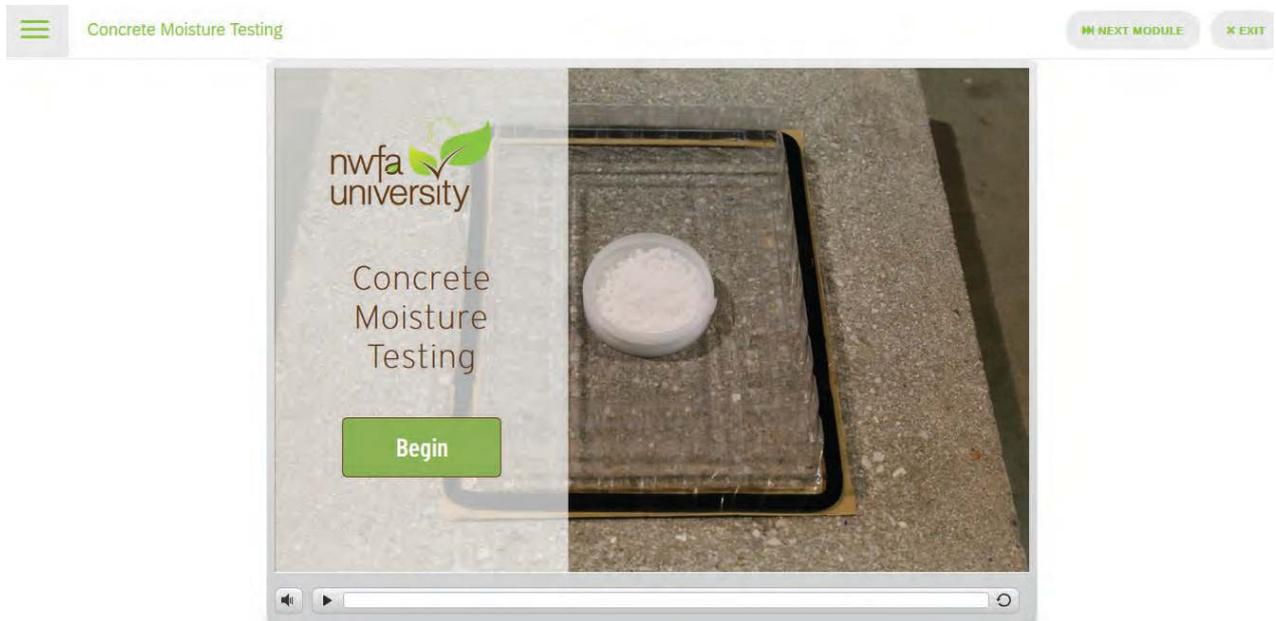


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March 3-5, 2020

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March 3-5, 2020

Intermediate Installation + CP Testing
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March 24-26, 2020

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Tualatin, Oregon

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Intermediate Sand & Finish + CP Testing
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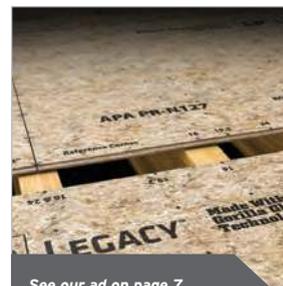


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This NWFA Member Exhibitor Listing is as of 1/3/2020, a show floor map is available on page 74. Companies in BLUE are advertisers in this issue. For a description of what they are displaying at DOMOTEX USA, see the Exhibitor Showcase on page 76. Visit domotexusa.com for the latest exhibitor listing.

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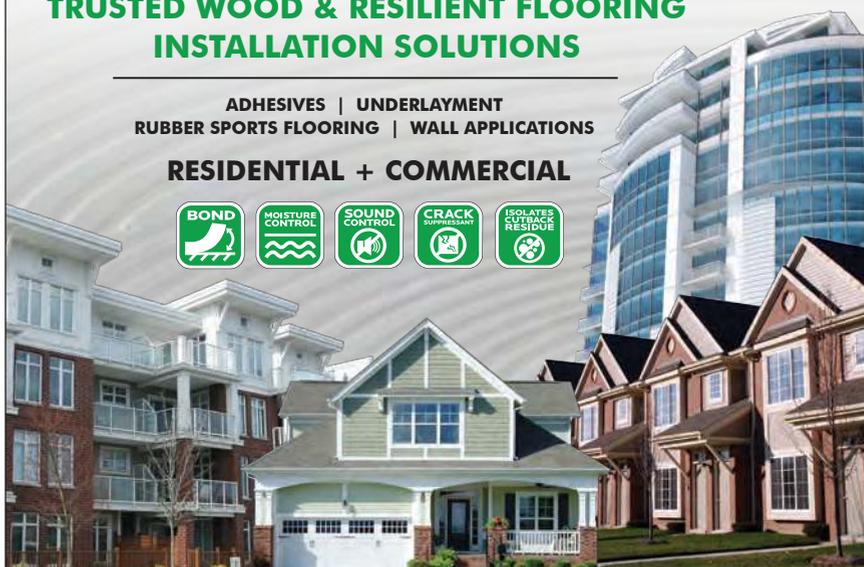
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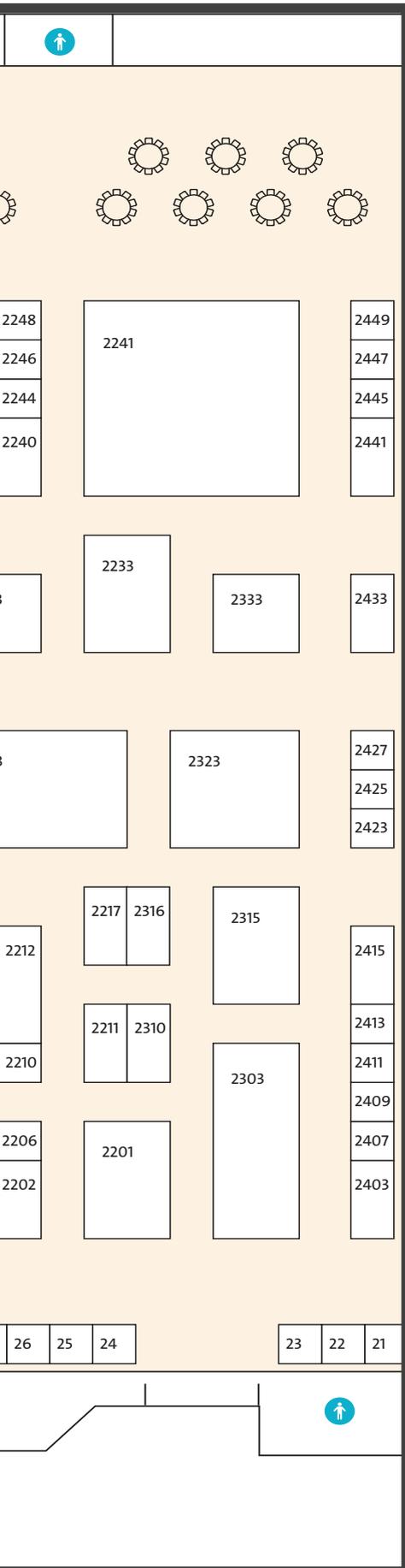
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DOMOTEX USA Floor Plan

-  Flooring Technology
-  Soft Surfaces
-  Hard Surfaces

HFM ADVERTISER/DOMOTEX USA EXHIBITOR PRODUCT SHOWCASE



See our ad on page 17.

AMERICAN OEM

Booth 1301

Crevasse | Aspen Estate

Combining real hardwood veneer with a 100% waterproof rigid core, Raintree is a revolutionary new hybrid flooring that blends style with performance. With a matte finish and brushed texture, Crevasse from the Aspen Estate Collection embodies laid back elegance. Our NINJA™ technology reinforces the natural hardwood wear layer to protect against moisture, scratches and indentation better than traditional wood flooring.
raintreefloors.com



See our ad on page 73.

DRITAC FLOORING PRODUCTS

Booth 1514

DriTac 8801 CoverGuard – Hard Surface Protective Foam

DriTac 8801 CoverGuard is a 1.85mm semi-ridged foam that provides scratch and dent protection for newly installed surfaces to prevent damage during and after the installation process. CoverGuard is scored and breathable, allowing sub-surface moisture to pass through. It restricts surface spills and water spots on the top of the film surface, while resisting tears and punctures with a fused film layer.
dritac.com



See our ad on page 76.

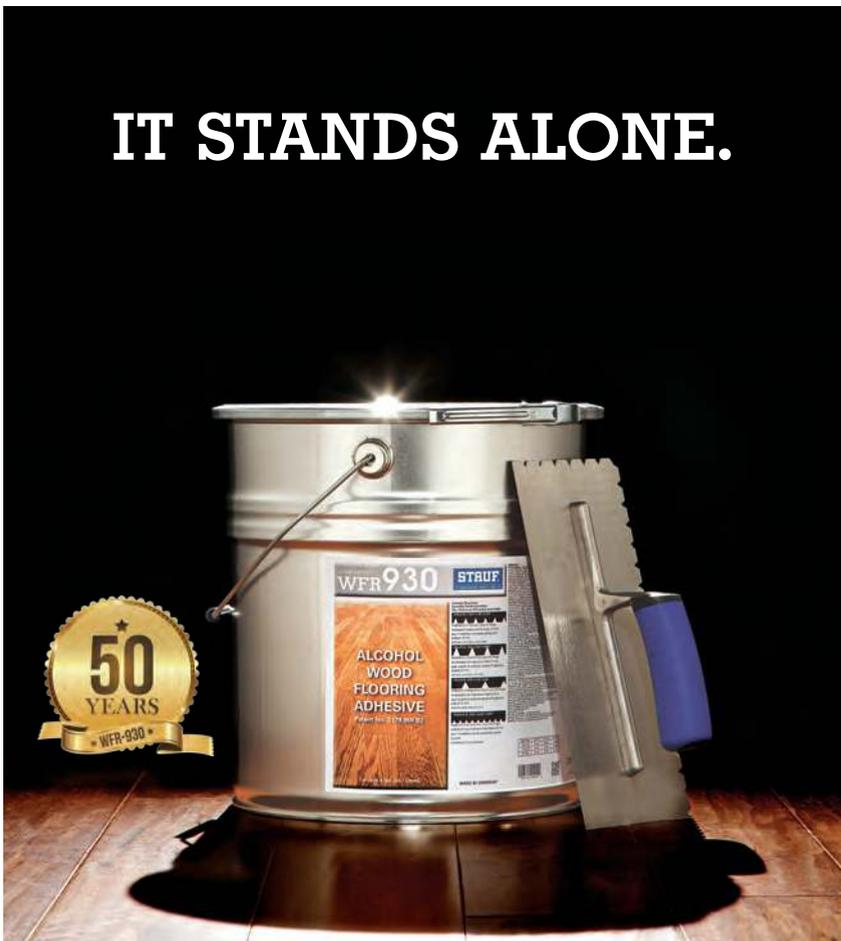
STAUF

Booth 1401

WFR-930

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staufusa.com

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www.staufusa.com 866.GLUEUSA



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ahfproducts.com



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bruce.com



DRITAC

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dritac.com



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festoolusa.com/service

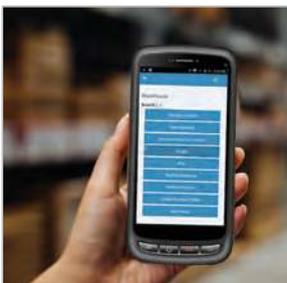


IQ POWER TOOLS

iQ426 HEPA Dust Extraction Vacuum

The iQ426 HEPA Dust Extraction Vacuum is engineered to meet OSHA's silica dust requirements for working in construction applications. With its airflow tuned cyclone technology, less than one percent of the dust ever reaches the filter, which means vacuum maintains optimum performance.
iqpowertools.com

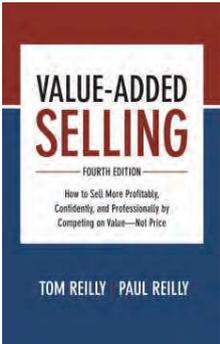
To be included for consideration in the New Products section of *Hardwood Floors* magazine, please send a high-resolution image and 50-word description to libby.johnston@nwfa.org.



ROLLMASTER

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The new integration of RollMaster Software with an Android handheld wireless barcode device promises to make warehouse barcoding even simpler, more affordable, and more efficient for flooring dealers across the U.S. and Canada. While launched with an Android device, the technology also works on iPhones and all other smartphones with the addition of an integrated barcode scanner attachment.
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WAGNER METERS

C555 Concrete Moisture Meter

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wagnermeters.com

hardwood floors

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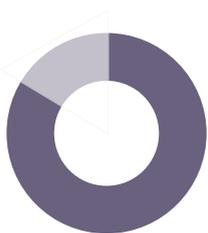


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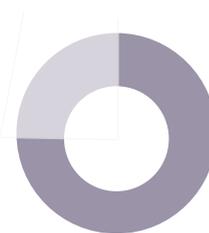
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Source: *Hardwood Floors* reader survey conducted by Signet Research Inc., October 2019

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FINAL COAT

A GUIDELINE
FOR COLLABORATION

As I reviewed the profiles of the women featured in this issue of *Hardwood Floors* magazine, it became clear to me that one of the things our industry does really well is collaborate. This is unusual, especially among competitors, but it is something I have witnessed again and again during my tenure at NWFAs.

Over the years, I have seen contractors travel thousands of miles to help competitors complete complicated or time-sensitive installations. I have seen distributors work together to meet the needs of projects that require large amounts of product, resulting in sales for their competition. And I have seen manufacturers join forces to advance initiatives that benefit not only themselves, but their direct competitors as well. It is really quite amazing, and speaks volumes about how NWFAs members come together to put the needs of the entire industry ahead of their own personal agendas.

One project that has involved a great deal of collaboration is the newly revised NWFAs Wood Flooring Installation Guidelines. During the course of the past year, the NWFAs Technical Standards & Publications Committee has worked diligently to conduct the most-comprehensive revision of the Installation Guidelines since they were first published in 1988. The individuals who developed these first Guidelines, as well as those who participated in several revisions during the past three decades, laid a strong foundation on which we could build. Here are some of the highlights:

- Content has tripled in size, providing more in-depth information on topics including job site conditions, acclimation/

conditioning, moisture testing, basements/crawlspaces, substrates, underlayments, layout, installation methods, maintenance, and repair.

- Architectural CAD drawings have been added to enhance learning and clarify descriptions.
- Photographs have been added to provide visualizations of specific instructions and to make these Guidelines multilingual.
- Artwork and illustrations have been updated and improved to augment comprehension.
- Responsible parties have been clearly defined, and include obligations for each.
- Regional Climate Variations have been expanded to include detailed information for every county in every state in the U.S. This information has been published into a supplemental technical publication and will be a valuable tool for determining temperature and humidity implications in different regions.

These new Installation Guidelines represent one of the largest and most-extensive collaborations in NWFAs history. Not only did NWFAs work with its members – of all member types – to research and update this publication, but it also worked with numerous other organizations that had significant expertise in specific areas. See a list of these at right.

That is quite a list of collaborators, and their efforts are evident in the new Guidelines, which should be hitting your mailbox any day. I am confident it will be a publication you will refer to again and again. ■

By Michael Martin
President & CEO, NWFAs

INSTALLATION
GUIDELINES
COLLABORATORS

- American Society of Concrete Contractors (ASCC)
- American Society of Heating, Refrigerating & Air Conditioning Engineers (ASHRAE)
- Building Science Corporation
- California Air Resources Board (CARB)
- International Building Code (IBC)
- The Engineered Wood Association (APA)
- International Code Council (ICC)
- International Concrete Repair Institute (ICRI)
- International Residential Code (IRC)
- National Electrical Code, as published by the National Fire Protection Association (NFPA)
- North American Laminate Flooring Association (NALFA)
- Occupational Safety & Health Administration (OSHA)
- Portland Cement Association (PCA)
- Power Tool Institute (PTI)
- Radiant Professionals Alliance (RPA)
- Stairbuilders & Manufacturers Association (SMA)
- Uniform Building Code (UBC)
- U.S. Department of Agriculture, Forest Products Lab (USDA)
- U.S. Department of Energy, Building Technologies Program (US DOE)
- U.S. Environmental Protection Agency (US EPA)



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† Can help prevent cupping caused by excessive subfloor moisture.

‡ Radiant heat systems will have a maximum moisture protection of 6 lbs. or 80% RH.

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