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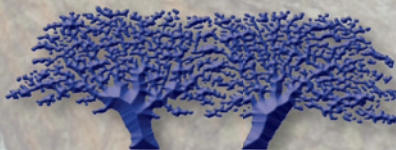


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Wood Floor Business Design Awards Readers' Choice
Legendary Floors of Florida LLC.
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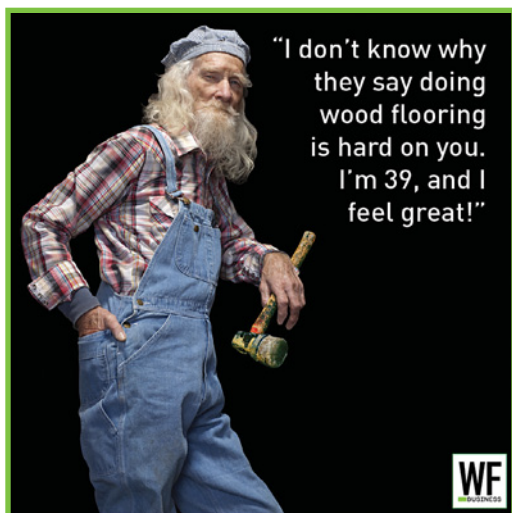
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SOCIAL



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IN THIS ISSUE

“That’s what it’s all about—being able to push the boundaries and let my guys do something new.”

— JOE ROCCO,
ARTISTIC FLOORS BY DESIGN

TO READ MORE, turn to page 46, where Rocco discusses some of the intricacies of his floor that won the WFB Design Awards Best Residential award.

WF By the Numbers

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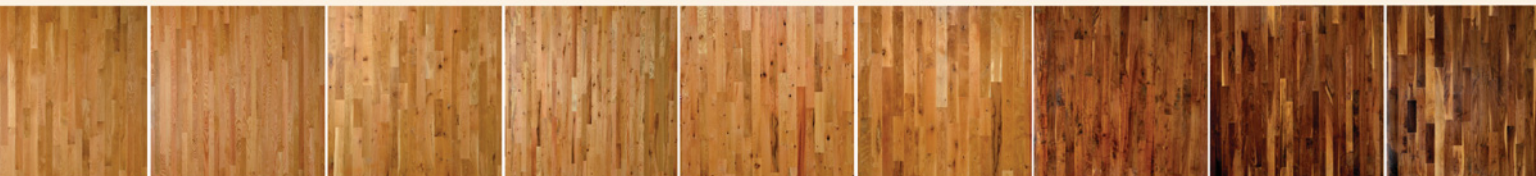
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CHANGE OF ADDRESS: In order to ensure uninterrupted delivery of *Wood Floor Business*, notice of change should be made at least five weeks in advance.

Direct all subscription mail to *Wood Floor Business*, P.O. Box 47705, Plymouth, MN 55447, call 800/869-6882 or fax 866/658-6156. For faster service, visit us online at www.woodfloorbusiness.com/subscribe. Single-copy price is \$8.

Annual Resource Book is \$50. Subscription price is \$40 for seven issues in the U.S.A. and Canada. *Wood Floor Business* is published bimonthly, plus the annual industry Resource Book in November, and distributed without charge to qualified individuals in the wood flooring industry. **POSTMASTER:** Send address changes to *Wood Floor Business*, P.O. Box 47705, Plymouth, MN 55447. Canadian Publication Mail Agreement #42330013. Printed in the U.S.A. © 2019 AB Media Inc. Reproduction in whole or in part is prohibited. ALL RIGHTS RESERVED. **ISSN 2475-4226 (Print), ISSN 2575-4242 (Online) Periodicals Postage Paid at Madison, Wisconsin, and at additional mailing offices.**

FROM THE EDITOR

By Kim M. Wahlgren



My favorite job

Hands down, my favorite assignment every year is interviewing the winners of our WFB Design Awards (and, for 20 years before that, the Floor of the Year winners). Through this I have gotten to know many of the most inspired and creative minds in the industry, including, shall we say, some real characters. This year I got to interview an old friend I've interviewed many times before, Chuck Crispin, whom I first met

when he was one of my instructors at the Advanced School in St. Louis way back in 1997. Thinking about this sent me digging into our archives, where I discovered this image I took of our panel from that school (Chuck's in



the red shirt). There are two other wood flooring legends in that photo: the late Allan Pyne (far left) and Daniel Boone (far right), then technical director at NWEA and now training manager at American Sanders. Allan had already won Floor of the Year awards three times before my tenure at the magazine, and in 1999 I interviewed him after he won yet another. Allan was a character, but he was not a talker. In fact, I believe he was my most difficult interview—ever. It went something like this:

Me: What was interesting about this job?

Allan: Oh, it was a pretty routine job.

Me: Was there something challenging about it?

Allan: Not really.

... and it went on just like that. It speaks to Allan's level of artistry that the complicated floor with a custom border, radial field, inlaid brass and inlay were "pretty routine." (If you'd like to see that floor and the article I managed to write, it's at wfbmag.co/allanpyne99).

I'm pleased to report that our Design Awards winners this year were more than happy to talk about their floors, and their level of work probably would have even impressed Allan (particularly the floor by his dear friend Chuck). To read about their artistry, turn to page 42.

Kim M. Wahlgren

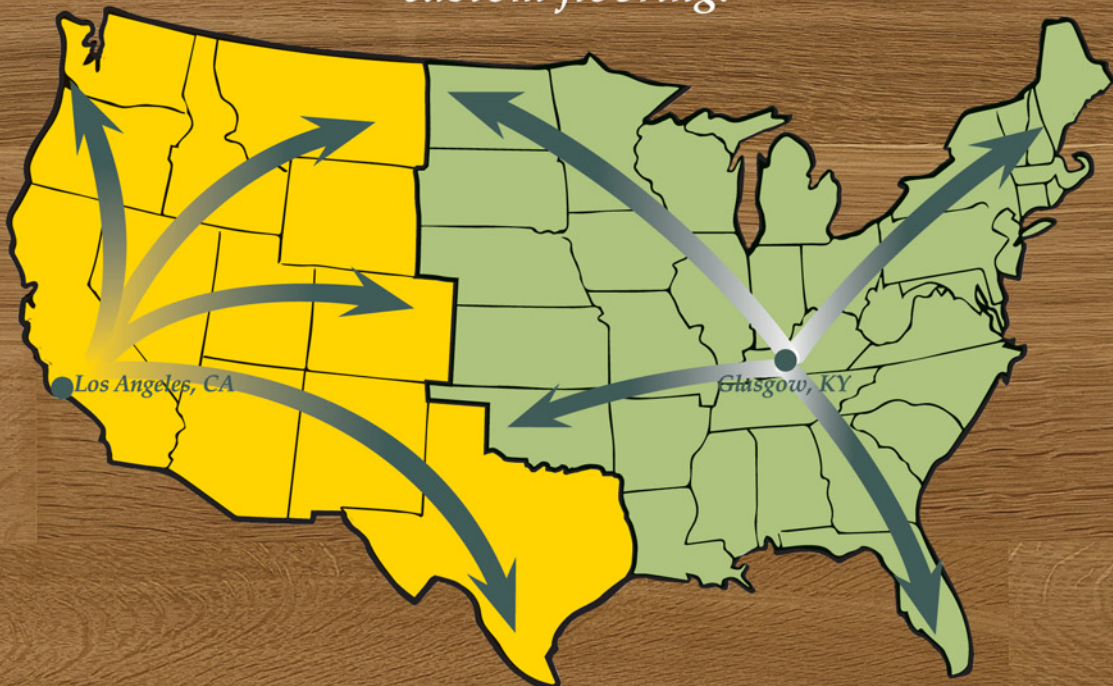
Kim M. Wahlgren



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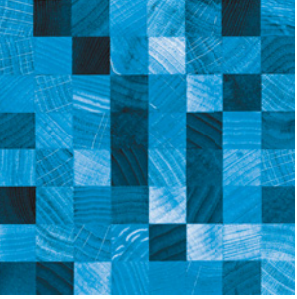
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WOOD WORKS



Jeremy Bitterman



Brad Feinknopf

Expanses of end grain in National Veterans Museum

Tony Stalford, owner of Sugar Grove, Ohio-based The Final Floor, has done a fair share of end grain installs during his 42 years in the industry, but installing 26,000 square feet in the National Veterans Memorial and Museum in Columbus, Ohio, was a new feat that included its fair share of obstacles. "There's not a straight wall in the building," Stalford says, noting that its huge, spiraling halls made it tricky to install the 1-inch-thick white oak end grain at the specified 49-degree angle. Having cut the pieces with a band saw, Stalford and his team began installing in the basement of the three-floor museum but quickly battled moisture issues with the concrete subfloor; the end grain began to lift. "It was kind of like rolling across piano keys," Stalford says of the loose pieces. After switching to an adhesive with a moisture control membrane, the install crew was back on track—but still balancing a tight schedule with other trades. "You're working basically right on top of everyone else," Stalford says. Sanded and given two coats of water-based sealer mixed with sawdust and two coats of water-based urethane, the remarkable flooring now rests as a monument to veterans and, clearly, a testament to tenacity.—R.K.



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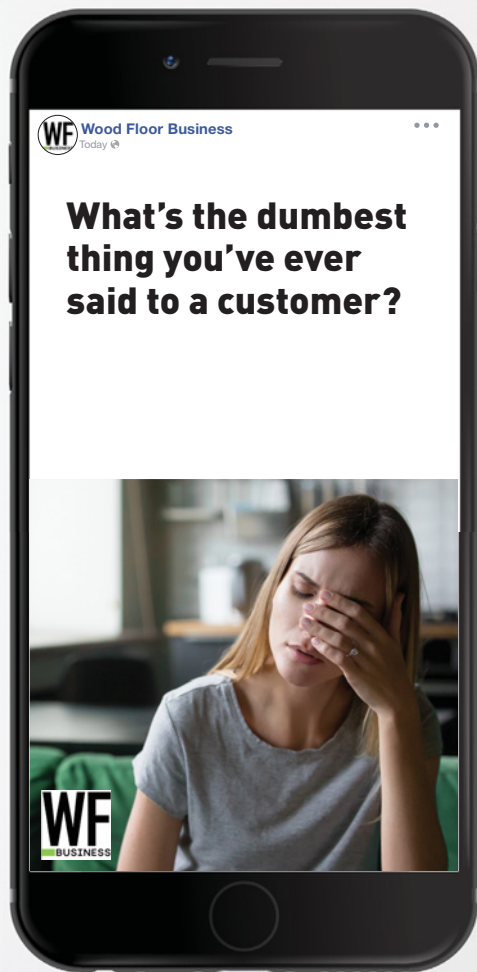
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Barry Oliver
Customer: Do you take credit cards? Me: [without thinking] The only place I have to swipe a card through, you don't want to see 😳. Did I just tell them to swipe my butt?

Trevor White
Eleven years ago I was standing in a woman's house, maybe a 300K dollar house, and she asked me if I could do the job. I replied, "I normally just do million-dollar homes, but since the economy crashed I suppose I could do yours." 🙄

Eric Olejkowski
"What moron installed this floor?" The owner goes, "Yeah, that was me!" 🤦

Ken Ballin
"Sure, I can get over there Christmas Eve. No problem."

Mitchell Canter
"Yeah, I can move your curio cabinets and all the crap in them."

Lou Buono Jr.
A woman asked me if the process was dust-free. I enthusiastically said, "Yes! The dust comes free with the job."

Ross Hansman
"Have your interior designer come over and give their opinion on the color."

Brad Fultz
"Piano? No problem!"

Gary Kuchinsky
"When are you due?" ... to a non-pregnant woman.

Jeff Haddick
"I promise..."

Micheal Seeley
"Pink with white overtone? That will look great."

Bob Patterson
(In the early days)
"Whatever his price is, I will match it."

Keith Christopherson
After picking out a stain color the customer asked if I could stain a small sample piece of wood she can take to pick out kitchen stools. Without skipping a beat, I replied, "Or you can always bring a stool sample here!" Thankfully she had a sense of humor and laughed.

Laura Fischer
"Have you tried looking on Pinterest?"

Dan Aeschliman
Customer: "Do you putty the holes in the floor?" Me: "Don't worry ma'am, by the time we're done with your floor we will have filled all your holes!"

Jake Schlichte
"Here's all 50+ color options."

Jorge Perez
"While moving furniture we found your dildo." 🤦
Should've just left that one alone.

Jarrod Wellmann
I told a bald lady, "No worries, today we'll try to stay outta your hair!" I felt terrible and I didn't mean it like that. 🤦

Gregory Dozorec
Years ago I asked a blind guy if he was happy with the stain color his wife picked out. He threw me off when he asked if I could get it any darker.

Wood floor pro finds a little puppy love



Before award-winning wood floor pro Bobby Humphreys founded Big Guy, Littles World Sanctuary, he didn't anticipate he'd someday wake up covered in 40 adoring Chihuahuas. "I never thought twice about little ankle biters," he says. Now, he's on a mission to rescue as many Chihuahuas as he can with his pending nonprofit. It was fate that brought Humphreys and his little "fellow misfits" together. Humphreys, who owns Frederick, Md.-based Wood Floors by Majestic, hit a rough patch several years ago when his marriage ended. As he fell into a depression, a friend asked if he'd babysit her Chihuahua, Lady. He reluctantly said yes, and when his friend returned, she found Lady curled up on Humphreys' lap. Humphreys began searching for a Chihuahua of his own and noticed many on Craigslist in desperate situations. He adopted one, then spotted another in need. This pattern repeated, and Humphreys began a nonprofit. Today, his Facebook page has more than 41,000 followers and he's even been contacted about a possible TV series. His passion for wood flooring hasn't diminished, however, and he still works on big projects when not growing his organization. And with red oak flooring in his home, he also appreciates an incidental benefit of the diminutive breed: "Even though they run through the house, they're just not big enough to really tear through the finish." To find more information or to donate to his nonprofit, go to bigguylittlesworld.com.—R.K.

CAPTION CONTEST

Winner



We asked you to submit your caption suggestions for this photo, and our online readers voted. Congratulations to winner Kevin Watts of Island Hardwood Renew in Gabriola, B.C. Aside from fame and notoriety, Watts will receive a Wood Floor Business T-shirt. Other favorite captions included:

"Is that how they sand a floating floor? Another glass of wine and I will take a whirl at it!"

— Nancy Devlin of About All Floors in Birdsboro, Pa.

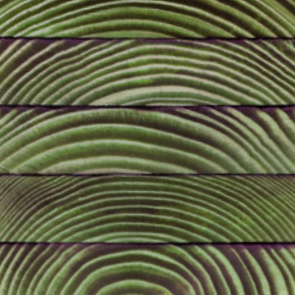
"I should have never told my wife I'd buy her a new car when I see a Hummel fly."

— Chuck Kutchera of Cincinnati

... and
your
next
chance
to win:



Now it's your turn again! Send your suggested caption to caption@woodfloorbusiness.com with "Caption Contest" in the subject line, then watch the WFB E-News for your chance to vote for a winner.



YOUR BUSINESS

“What do you need to start a business? Three simple things: know your product better than anyone, know your customer, and have a burning desire to succeed.”

—DAVE THOMAS, FOUNDER, WENDY’S

SOCIAL STUDIES

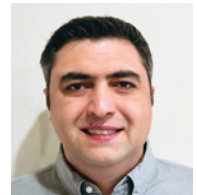
Generating leads via LinkedIn

A year ago, Javier Flores of Falls Church, Va.-based Madera Floors was skeptical of LinkedIn, thinking it was “more for ‘white collar’ people,” he says. But a friend, Jen Dalton of social media company Brand Mirror, turned him on to its potential. Today he has more than 1,500 followers and frequently generates leads from the site. His LinkedIn success began when he hired Dalton to update his inactive profile by detailing his experience, listing his skills and adding a professional headshot. Then he connected with 200 local architects, distributors and designers and began posting four times a week, sharing informative photos from jobs and short “how-to” videos. Flores has more than 10,500 followers Instagram but says his LinkedIn posts are less personal. “I use LinkedIn to brand my business, and Instagram to brand myself,” he says, adding that LinkedIn connects him with professionals who might not be on Instagram. “If you have a good profile and you’re posting good content, you’ll more than likely find success,” he says.

TRENDSPOTTING

Floating stairs in San Fran

Since the summer of 2017, 90 percent of Area Floor Works Owner Avo Sanasaryan’s remodeling projects in San Francisco have featured floating staircases, and the trend isn’t showing signs of fading. “That trend will continue going on for at least another year,” he says. While he likes the look of floating stairs, Sanasaryan notes that it’s also a practical design for the famously narrow houses that fill the City by the Bay. “When you have old, framed stairs, it’s always dark underneath,” he says. “But with the floating stairs, there’s light getting to the first floor.” Sanasaryan says floating stairs typically cost about 50 percent more to install than traditional stairs due to requiring twice the labor, but their elegance makes them worth the effort. “You can call it ‘trendy,’” he says, “but it’s also like a piece of art.”



What is trending in your area? Tell us about it by emailing us, along with a photo, at editors@woodfloorbusiness.com



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SCAN TO DOWNLOAD APP





By João Dias

From a borrowed palm sander to high-end pros in five years

IN 2012, I was 32 years old and working as a shipping agent at my father's company in Lisbon, Portugal, along with my father, brother and wife, Susy. When my mother passed away on Jan. 31

that year at the age of 56, I was faced with not only her death but the reality of having to shut down my grandfather's woodworking shop, which she had run, and letting go of the company's two master craftsmen I'd known all my life. I decided to take a leave from my father's company in order to manage the woodcraft shop and try to maintain the masters, as well as my grandfather's and mother's legacy. I believed if I stepped in briefly, the shop would run almost by itself with the customers who had been with us for six decades. I was wrong. What was supposed to be a one- or two-month rescue mission turned into a passion that is now a high-end wood flooring business.

After a year of running my grandfather's business, I decided to found a woodworking company of my own in order to fuse old techniques with new demands, and our company, Fino Oficio ("fine craft" in English) was born. At the same time, my wife and I started to build our house. Although we didn't do wood floors yet, when it came time to choose the floor, it could only be wood! We already knew the best way to go would be a glue-down installation since we were going to use radiant floor heating/cooling. Much to my surprise, all the professionals I contacted seemed genuinely afraid of gluing down my floor. Although Portugal has a rich tradition when it comes to woodwork, when it comes to wood flooring we have no association, no rules, no guidelines, and little training.

I started to study wood flooring, especially glue-down techniques on radiant systems. Two years passed, and again I contacted wood flooring companies. Every time I hung up the phone, Susy asked me why I didn't even ask for a quotation. My reply was the same: I didn't feel the trust I needed. We were stuck.

Then one of the contractors working at our house encouraged us to just install the wood floor ourselves. He basically said, "Stop whining! Just buy the damn floor, and I will help you and teach you." We went to our local retail store, bought the wood and a miter saw, and we were off. It took us three months to install 100 square meters (1,076 square feet) of solid pine flooring since we were doing it at night after work. We had no special tools or techniques ... nothing. But, by God, we did it.

When it was done, I felt something I'd never felt before: I was complete! I was



João Dias and his wife, Susy Dias, had to find their own way trying to build a wood flooring contracting business based on quality craftsmanship.

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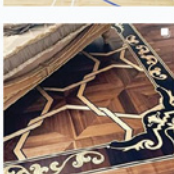
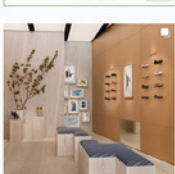
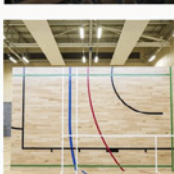
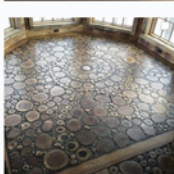
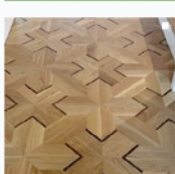
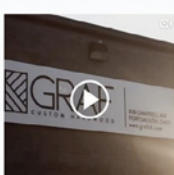
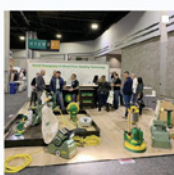
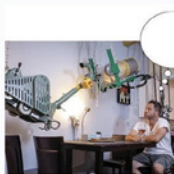


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YOUR BUSINESS LIVE & LEARN

looking at something done by us, something done with love, something beautiful. In the car at 2 a.m., I told Susy:

“I’m going to be a wood floor professional!”

“You’re crazy,” she said.

“Maybe, but I have to try!”

The next day a friend of mine asked if I knew someone to sand and refinish his floor. I told him no, but if he wanted, maybe I could do it. We agreed on a price, and after borrowing a palm sander, I went to the supermarket to buy an 80-euro (about \$90) vacuum and a pair of knee pads, and I was off. The job was difficult, but I knew I was doing what I should have done all my professional life.

After nine months sanding on my hands and knees, we were able to buy our first professional big machine. We had to lease a warehouse in order to practice with several square meters of different types of wood floors.

Although we don’t have wood floor training here in Portugal, we were able to do training with Bona in Madrid, and we were one of the first Bona Certified Craftsman companies in Portugal.

During 2017, the Pallmann brand was introduced to the Portuguese market, and we were one of the first companies to reach out in order to try their products and machines. We were honored take part in the Workcamp Parquet 2018 training held in Arcen, Holland, working alongside 45 top wood flooring pros from around the world. At the end Pallmann surprised our company by awarding us with the very first Iberic Pallmann ParkettProfi title (a professional certification), and we now fight day-in and day-out to honor the confidence they have given us. We have a mutual goal of wood floor perfection while using fewer and fewer solvents (in some cases, zero solvents).

We’ve also evolved by sharing experiences with fellow wood craftsmen scattered around Europe, the United States and Asia.

We now specialize in wide-plank glue-down applications of solid or engineered flooring on cold/heat radiant floor systems. The last couple of years we have been developing new techniques to help during glue-down applications, and we are also designing two machines specifically for these types of applications (we hope to have a prototype ready by the end of 2019). We are also partners with radiant-heat manufacturer Schlüter Systems Portugal.

We also specialize in sanding and refinishing very old wood floors like the ones in downtown Lisbon, some of which are more than 300 years old. To bring back to life something that appears to be beyond repair is one of the most amazing things this trade has to offer.

We strive to make it clear that we want to be recognized for our quality and customer care, not our price. Here in Portugal, the jobs are always quoted by the square meter, with prices usually given over the phone. How can you give an honest and accurate quotation to a client? We never understood that and never will.

We can honestly say that the wood floor business is by far the best thing that has happened to us. Yes, we are tired, we are stressed and, especially, we spend a lot of time away from home and our family, but all of this is surpassed by our customers’ genuine satisfaction and joy. To create is the key of life, and only five years into this business, we are honored to have created joy and happiness for hundreds of customers. Alongside the recognition from our peers, that is something that many times leaves us speechless.

After our journey in this industry, we feel that the only obstacle any wood floor professional has is himself! Do it with love and care, and in the end everything will fall into place. ■

João Dias and his wife, Susy Dias, are owners and managing directors at Lisbon-based Fino Ofício.



Is installer to blame for gapping walnut floors?

Homeowners' Issue

A new home was built during the summer. At the time of installation, the subfloor and the black walnut solid wood flooring were within the recommended humidity levels in the manufacturer's guidelines. That December the homeowners began to notice gapping in the floor. They expressed their concern to the retailer, who told them seasonal gapping between wood planks is normal. They accepted that until late March, when the gapping was occurring every 4 feet. The retailer and builder agreed the gaps widths were excessive and should be inspected.

Roy: The Inspector's Observations

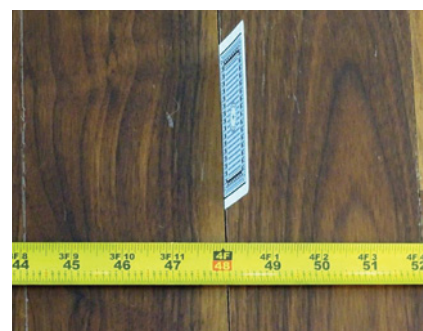
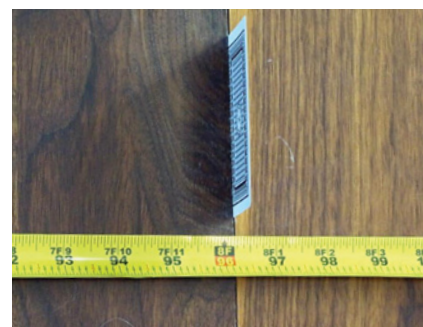
I did conclude there was normal seasonal gapping between individual planks throughout the wood floor. However, there were also large gaps of 1/8 inch or more approximately every 4 feet. Destructive testing performed at one of the large gaps revealed a subfloor joint where subfloor panels had pulled away from each other directly under the extracted plank. At the time of installation, the installer said the wood floor moisture content was slightly elevated at 7.5–8.5% and the subfloor moisture content was 10%. The wood floor's MC was 6.5–7.5% at the time of inspection, and the subfloor's MC had fallen to 6%. With no supplemental humidification installed in the house, I determined the subfloor panels shrank excessively and separated from each other, creating the large gaps. I concluded this was not a wood floor installation-related issue, but rather a structural issue.

Blake: The Attorney's Analysis

The facts indicate that the subfloor and flooring were within the recommended humidity levels at the time of installation and there were no other apparent

workmanship issues. It seems the culprit in this case is the excessive shrinkage of the subfloor panels. This problem commonly involves the homeowner failing to properly use the humidification equipment, but here there is no equipment to use. Any builder constructing a home in winter climates knows (or should know) humidification is necessary to reduce shrinkage of the wood products in a home. Either the design of the home was defective or there was negligence in failing to install proper equipment and educate the homeowners. In either case, the builder is responsible. ■

Blake R. Nelson is a construction-law attorney with Hellmuth & Johnson PLLC in Minneapolis. He can be reached at bnelson@hjlawfirm.com. Roy Reichow is president at National Wood Flooring Consultants Inc. and an NWFACP-certified inspector.





YOUR BUSINESS RETAIL

By Barbara Crowhurst

By the numbers: reevaluating your retail store

AS RETAILERS, WE'RE living in what I like to call the Era of Big Data. Without using data and analytics to compete with the likes of Amazon, your business is going to disappear.

But though the need to transform is more acute than ever, it's natural to be wary of change or unsure of how to start unraveling your business to take a hard look at it. How do you examine it in a way that makes sense and actually helps? The groundwork begins when you start figuring out your business's real story. And I'm not talking about the one on your website's "About" page—I'm talking about its numbers. Here are some of the basic numbers reports you'll need to effectively evaluate your business.

Profit and Loss: monthly updates on how you're doing

It's hard to overstate the importance of having a talented bookkeeper or accountant, as there are several incredibly useful reports to gather for your business—not the least of which is your Profit and Loss report. This report contains your total income and total expenses, and it should be run monthly. What makes me crazy is that the average business person I consult with does not ask

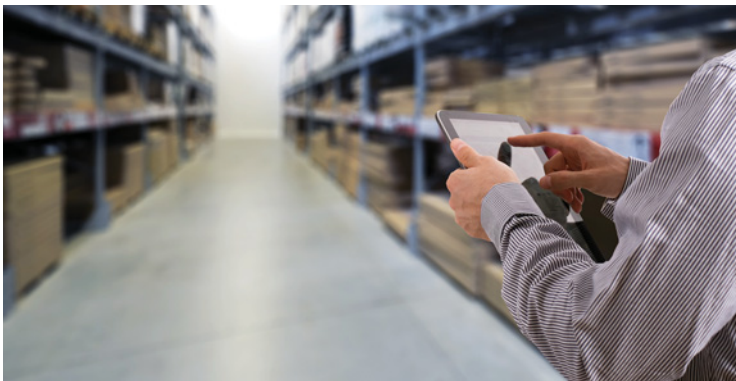
for this type of report for more than a year; they'll say, "I don't need to, I know it." Oh really? Some other retailers I speak with just keep it on pieces of paper. This report is the best way to see how your business is doing—take good care that it's correct!

Operating report: vital daily data

Operational reports are extremely illuminating, yet I've noticed few retailers do most of them. Here are a few of the essential ones:

- 1) **Daily Average Sale:** This is calculated by adding up the amount of money made today and dividing it by the number of sales.
- 2) **Daily and Hourly Traffic:** This can be tracked using a counter like they do at Costco.
- 3) **Conversion Rate:** An insightful report to have when it comes to setting sales goals.
- 4) **Sales by Percentage Against the Whole:** This shows you what your top selling products are and in what percentage against the whole of your business.
- 5) **Sales by Customer by Period:** This helps us realize who our customers are, how much money they spend with us, and when they've visited (remember: 80 percent of sales come from 20 percent of customers).

All of the numbers derived from these reports contain the information you'll need to start evaluating your business. But before you do that, you'll also need to take a long, hard look at another vital aspect of your business—inventory.



Inventory is just one report you should track regularly.

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Inventory: what you need and what you don't

If you find that what you're selling and what you're stocking are not the same thing, now's the time to begin asking yourself why. There's no misunderstanding on

my part that the average retailer carries inventory long after it shouldn't be in the store. I try to set a cut-off period of 12 months for inventory, as there is a ton of money tied up in it.

You can also consider what you

should be stocking more of. As you hear customers come in and ask for a product you don't carry, you have to ask yourself, are you going start stocking that item? Why not?

Sales targets: putting the numbers into practice

Now that you've figured out your numbers, you can begin putting them to use, beginning with your sales targets. I tell my clients to aim for 20 percent above the prior year's sales numbers.

So let's say sales were \$500,000 in 2018—20 percent is an additional \$100,000, meaning you'll earn \$600,000 in 2019. You're probably thinking, "Okay, Barb's nuts." But here's the way I look at things: We only increase our business one client at a time, right? So let's simplify things and focus on each individual client, looking at our numbers to find what our average sale is. Say our average sale is \$2,000, 20 percent of which is \$400. This means that when a customer spends the average \$2,000, you know that to hit a 20 percent increase, you've got to start showing more products to earn \$400 more. It's all about add-on sales.

Here's another helpful way to use your data: Let's say you and I have a goal of \$20,000 in sales for the day, with an average sale of \$2,000. That means we each have to make five sales. But what is your closing rate? Let's say we both have a 50 percent closing rate; each of us will have to talk with at least 10 customers each. Then you might say, "Barb, I don't have that many customers come into the store." BINGO! And there we have an issue we can work on: marketing.

Once you embrace the Era of Big Data and get these ideas into the culture of your retail store, you'll pinpoint numerous ways to improve—all thanks to simply knowing the numbers. ■

Barbara Crowhurst is a retail makeover specialist, business coach, writer, international speaker and trainer.



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Take advantage of social media tools for business accounts

BY NOW MANY wood flooring pros have put social media to work for their businesses: our State of the Industry survey results show that last year 85 percent of wood flooring

retailers were using Facebook for business and 25 percent were using Instagram. For wood flooring contractors, 57 percent were using Facebook and 29 percent were on Instagram.

An interesting stat we don't have is: How many of those accounts are set up correctly as a business account, not a personal account? It's still commonplace to see companies operating on social media with a personal account, but there are many reasons why your company should be set up as a business account, and many tools that become available to you once you do so. Here are some of the most important reasons to be set up correctly:

1) It looks professional

Most consumers today are familiar with following businesses (and reviewing them, too) on Facebook and Instagram, and it can look amateurish for your company if those consumers have to "friend" your company on Facebook (they'll even get notifications about your company's "birthday"—like they would for Aunt Susie).

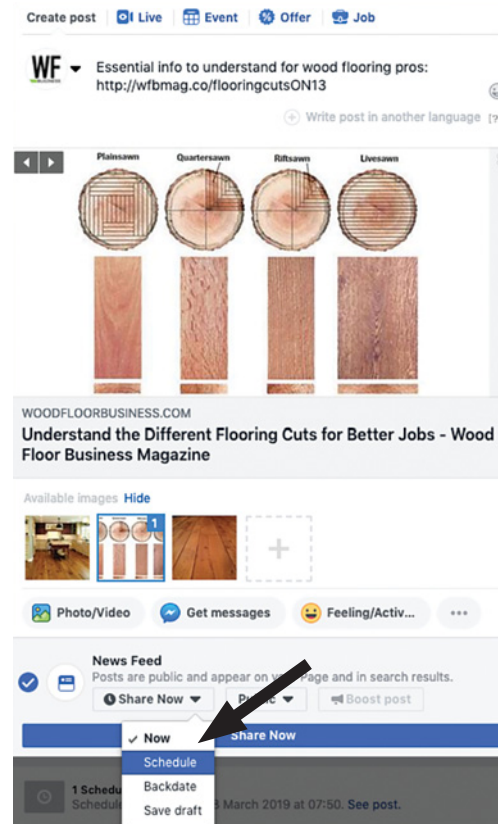
2) You can schedule posts

The ability to schedule posts is extremely helpful for time management, but you can only do so if your accounts are set up as business accounts.

Facebook makes it simple to schedule posts within the app either on desktop or mobile. When you create a post, instead of clicking "Share now," use the dropdown menu next to it to choose "schedule," then simply pick your date and time (see the screenshot at right). Once you've scheduled

posts, at the top of your posts on your page you'll see a box that tells you how many posts you have scheduled. If you click there, you'll see the list of posts and be able to change scheduled times and edit the posts.

Instagram doesn't allow you to post from desktop at all and doesn't allow you



With a business "page", you can schedule posts, which makes posting much less time-consuming.

■ YOUR BUSINESS MANAGEMENT

to schedule posts via desktop or mobile. To schedule posts on Instagram, you'll need to use a cross-platform scheduling app such as Hootsuite or Buffer (both have free versions).

3) You can boost/promote posts

Yes, you can create actual ads on either platform, but the simplest way to advertise your business on Facebook or Instagram is to simply "boost" (on Facebook) or "promote" (on Instagram) your posts. Once you've posted you'll see a bright blue box show up on the bottom right of your post that says either "Boost post" or "Promote," and it will walk you through choosing your budget, audience (you can target demographics and geographical areas) and duration. Many companies find it doesn't take a large investment to have an impact, although success hinges on having an interesting post to start with!

4) Multiple people can post to the account

With a legit business account, you can

give access to multiple people to post to the account, which can make posting less overwhelming. Just be sure you're coordinating your efforts so everyone knows what your strategy and schedule are (if you don't have them, consider creating a strategy and a schedule!).

5) You can see insights

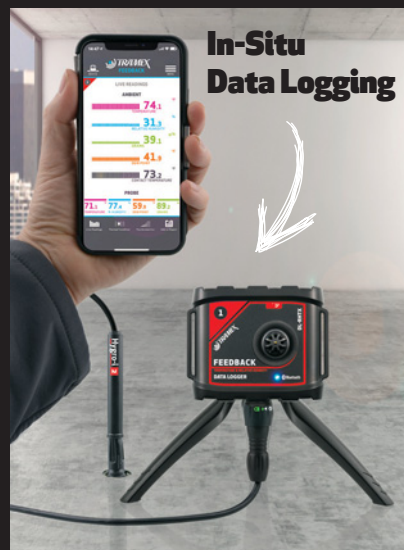
How many people are engaging (liking, sharing, commenting) with your posts? Which was your most popular post? What are the peak times when your followers are online? These stats and much more are available in your insights, which are available for all Facebook and Instagram business accounts. Taking even a brief dive into your insights is a good idea so you can see what content is working the best and plan future content accordingly. ■

Kim M. Wahlgren is the longtime editor of Wood Floor Business.

For more on setting up business social media accounts correctly, see the online version of this article at wfbmag.co/am19mgmt.

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“The hardest work about a building is to be found on a floor, and three days’ continuous labor of this sort will give lame back, sore knees and a wire edge temper to any but a saintly character.”

—F.G. ODELL

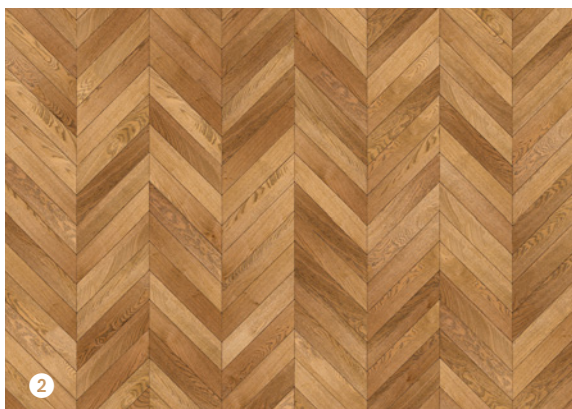
AUTHOR, “HARDWOOD FLOORS” (1906)

MINI-QUIZ

1 Which of the following can lead to streaks in your finish? (more than one answer possible)

- a. Skipping too many grits
- b. Using old finish
- c. Not cleaning your applicator well enough
- d. Applying finish too quickly
- e. All of the above

2 Name the parquet pattern.



3 True or False? Sanding perpendicular to the grain can help cut off gummy old finish.

4 You need to coat this floor, and the windows face due west. Is it best to coat it early or late in the day?

5 True or False? Finding rays that are more than 1¼ inches tall in a plainsawn piece of oak indicates it is white oak.



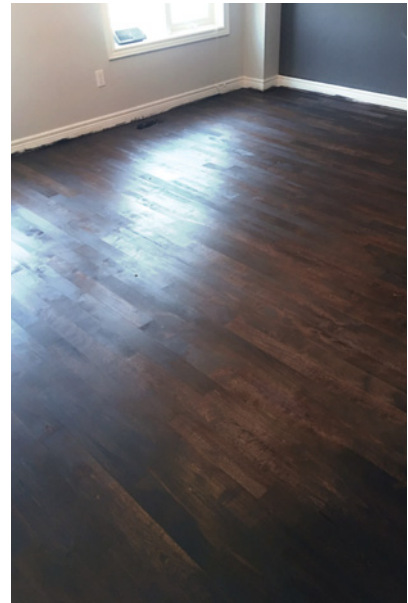
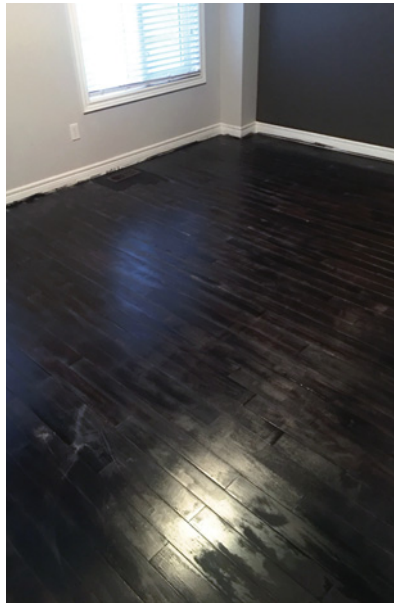
Answers: 1. a and c 2. Chevron 3. True 4. Early 5. True

→ Do you have a funny or bizarre job-site story, before-and-after pics or a Trick of the Trade to share? Email us at editors@woodfloorbusiness.com. If we use it in the magazine, we'll send you a WFB T-shirt.

WOOD FLOOR RESCUE

A do-over after a tile guy's dark stain disaster

Danny De Faria, who works at Antique Hardwood Flooring in Oakville, Ontario, sent us photos from a resand he did after the homeowner hired a friend who was a tile installer to sand the prefinished floors and stain and finish the floor. The result can be seen in the photo on the left. Not only was the wood floor a disaster, the dark stain covered



the white baseboards and even got on some carpeting (which he had covered with tape). "I think he must have rented a sander at Home Depot but didn't know how to properly sand, stain or even finish," De Faria says. De Faria and coworker Greg Ritchie started sanding on a slight angle using a Galaxy and a 40-grit Norton belt, then sanded straight with 40, working up to 100 on the big machine and a Super 7R edger before using a 150 on a Bona Multidisc and palm-sanding the edges. The final sanding was a 150 screen before using Saman water-based stain and tung oil. "As bad as the tile guy's sanding was, it did make it easier to sand off the prefinished," De Faria says.



TRICK OF THE TRADE

Trapping the sanding dust during transport

This issue's tip comes from Lou LiCausi of Finishing Touch Floors in Brooklyn, N.Y.

Simply put, buffers and big machines make a mess when leaving the job, even if you vacuum them out. I was thinking about what might help ... I first thought of booties, then shower caps. I called a company that makes sanding accessories and asked them to make a big shower cap to cover the buffer, but they said there was no market for it, and that was that. So then the other day I saw this giant shower cap thing on a cart in a building. I asked where I could buy one, and they gave it to me. It was perfect! It's an indoor elastic air conditioner cover you can buy anywhere, like Amazon. (I'm still looking for a good option for the big machine, though.)

TALES FROM THE FRONT

Other trades took sharing on the job site a bit too far

Many years ago, Ron Teljeur of Surrey, B.C.-based Acorn Wood Floors was working on a job with his late brother Mark. "We had been asked by one of the companies we subcontracted for to install and finish a floor in a brand new development. The problem was there was no power in this new subdivision, and they were just building the model homes. We told the builder that we needed major power to run our sanding equipment, so they rented a 20,000-watt generator to power our Hummel. Things started well, but by noon we noticed a lag on startup. We went outside to see 20-plus trades plugged in to our generator. My brother was not happy, so he just started pulling everything that wasn't ours. There was A LOT of swearing as the tools came to a stop, but we didn't feel like having to pay for a motor rewind for being nice guys."



Brothers Mark Teljeur (sitting) and Ron Teljeur pictured close to the era when this story actually happened.

Q&A

Grits for multi-head sanders

We just got a multi-head sander. What grit sequence should I use with it?

MARK DITTMER, Midwest regional manager at American Sanders, answers:

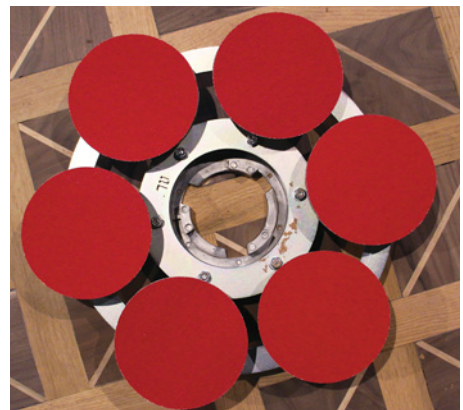
All the multi-head sanders on the market today have really changed the world of wood floor sanding, making the sanding process easier, and this is probably the most common question I get from wood flooring pros.

When I had my contracting business, for a typical floor we would sand with 60 and 100 on the big machine, then go right to 120 on the buffer. Most guys would use either a screen or a hardplate for their buffer, and the perimeters would have to be scraped and then hand-sanded (and now most pros use a random orbital sander for the wall lines).

Always going from the big machine to the typical buffer is no longer the standard process for many pros, but there isn't one answer on how to change your sanding process and grits once you start using a multi-head sander. Some contractors today are finding they can use their big machine less, stopping at 60 with their big machine and going right to their multi-head. Some are also finding that the multi-head sander is able to fix some imperfections left by the big machine, such as minor chatter.

Another helpful change with the multi-head sanders is that they get very close—about a half inch—from the wall. If you are working on a job that is new construction or otherwise has the base removed, you can eliminate the random orbital step entirely.

No matter which sequence you end up starting with on the multi-head, you still want to end with the same grits as you always have (most commonly 100 for natural floors and 120 for stained floors). Contractors also need to take into consideration the type of sandpaper they are using (black, red, blue, etc.) because different abrasives will leave different scratch patterns on the final sanding. In the end, you have to find out what you are most comfortable with on the particular multi-head sander you have (including with and without weights, if it has them). I always tell pros they need to get a variety of different discs and experiment until they find a process that works for them.



Multi-head sanders have changed the world of floor sanding.

Which tool or piece of equipment do you wish you had bought earlier?



1 John Feliciano

The American Sanders Epoch with HydraSand. Its multiple uses as a buffer and sander is second-to-none. The quality of my jobs ever since I purchased it has been so much better with half the effort.

Chuck Kutchera

The Fein Multitasker. Some uses are obvious. I've also used it to take out floors glued down to crack patch: I saw-cut the floor into smaller sections, put an old blade on and cut the bond from the glue and patch—no patch was pulled up.

2 Angelo DeSanto

My Diamabrush, of course. It removes the top layer of concrete—along with the dirt, residues and contaminants—so the bonding of adhesives, cementitious primers and moisture retarders is tenacious and permanent. I also use it to remove old, waxy finishes that normally gum up the sandpaper on sanders.

Robert Navon

A moisture meter.

Dave Medellin

Even though I exercise so my back is strong and ready for whatever, I would have to say the edger dolly.

Matthew Shumway

Good dust collection!

3 Daniel Van Auken

My set of Pro Knees. I wish

I would've got them sooner because all the years I've spent on my knees with no knee pads or cheap knee pads will probably catch up with me. Investing in proper safety gear is the most important thing I can do today along with taking good care of myself.

4 Mike Somodean

My Festool track saw. It makes easy work out of installing steps, doing repairs, cutting back for borders, etc.

Dax Williams

An air sled. It's one of those tools you won't use on every job, but when you need to move a refrigerator, you're glad you have it.

John Westphal

The Trio.

5 Kristian Liscik

The Bona Power Drive. It is my shortcut and time-saver for perfect looking floors.

Tim Moneke

The Festool Rotex 150—it's a game changer!!

Charles Brown

The Primatex nailers with the roller system. I have them now—heaven sent, I might add.

Luke Biello

The Silverline Pro 8.

6 Michael Todd Inmon

My ultra-quiet and oil-free air compressor from California Air Tools!!!

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ON THE JOB TROUBLESHOOTING

By Trevor Larsen

Gaps quickly appear ... and they keep getting bigger

The Problem

I was called to inspect the basketball floors in a new practice facility in a dry climate in the West because of concerns about gapping.

What Happened

Over the span of two weeks in August, a plywood anchored subfloor system was installed over the concrete slab covered by a 15-mil moisture barrier. During those weeks the $2\frac{5}{32}$ -inch solid maple flooring acclimated in the facility. It was then stapled to the plywood subfloor, sanded and coated. While the flooring was being installed the HVAC was temporarily running, door openings were temporarily covered by OSB, and wet work was still being completed in the building. By November, about a month and a half after all the flooring was completed, gaps were noticed between groups of boards throughout the installation. The flooring contractor said all moisture readings of

the flooring and subflooring and ambient conditions were in recommended ranges at the time of installation but could provide no documentation of them.

The Inspection

When I arrived in late November, from a standing position there was visible gapping between boards throughout the floor. The width of the gaps averaged 0.049 inch, and the MC of the maple ranged between 7–8%. The average board width was 2.231 inches. A data logger from the previous week showed the RH ranged from 14–25%.

Because we didn't have the data from the time of installation, I couldn't compare the MC and RH levels to those at the time of installation, but the boards measured under their expected manufactured width, and the RH was below the recommended range of 30–50%.

How to Fix the Floor

The initial recommended fix for this floor was to increase the RH, but due to the engineering of the building this was not possible—the facility was engineered as a “dry building,” meaning that moisture to help stabilize the RH would make the Sheetrock on the walls literally fall apart. Additionally, the air system uses fabric socks, which cannot handle moisture. As of this writing, this floor continues to separate, with some gaps exceeding $\frac{1}{4}$ inch.

In the Future

Buildings must be engineered to consider the requirements of all the materials, including the wood floor. If adding humidity is not possible, then the flooring must be acclimated to the expected RH before installation. ■



A data logger from the week before the inspection showed the RH ranged from 14–25%.

Trevor Larsen is at Payson, Utah-based BNS Hardwood Floors LLC.

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SHOWN: PLAIN SAWN WHITE OAK

MILESCRAFT KNEEBLADES ROLLING KNEE PADS

Mike Reissig at Colorado Springs, Colo.-based Legacy Renovation Inc. tried the KneeBlades rolling knee pads from Milescraft.

These knee pads are an interesting concept, so my partners, crew and I were curious to give them a try. Our first impression out of the box was their weight and bulkiness. They measure at just over 10 inches across, and the scale revealed the pair to be 5.2 pounds. Flooring pros who use the larger version of the Pro Knees, as we do, will not find this to be prohibitive. I usually alternate between the two Pro Knees sizes depending on the task, so I am used to the weight and size.

The roller base/frame looks to be extremely well-constructed and durable, which is probably why they are on the heavy side. The ball bearing casters all operate independently and allow for free movement. The rollers appear to be pressed into the frame. Milescraft included a parts list with the directions (all of which can be ordered and replaced), and in the event of a bearing failure, the company says replacements can be ordered and inserted by gently prying underneath with a screwdriver to remove and pressing the new roller back in.

These are designed to use as rolling knee pads or just knee pads, and the gel or substance they use as a cushion for the knee was very comfortable while using the roller base. The wide frame makes them very stable while in this mode. However, using them as just a knee pad was awkward and offered little to no support, as the outer shell has too much curvature and tended to roll the knee from side to side. The outer shell is also made of hard plastic, and we like to have something

more forgiving on the floor, particularly when it is finished. The company has a video showing a technician rolling on a prefinished floor, but we were too concerned about leaving wheel marks or catching an errant rock to do that.

For those of us floor pros with thinner legs, we sometimes find the straps barely have enough Velcro to attach—not so with the KneeBlades, which had enough for any size leg. There is only one attachment point, and considering how heavy and bulky they are, I wished they had another strap (like I'm used to with my current knee pads). We also fought with the latch mechanism that attaches the knee pad to the roller assembly. The majority of the time it would un-clip while rolling, and when we stood up the roller frame would fall off.

Overall, we agree with a lot of the things it says on the box about these knee pads. The wheels do allow you to glide around in minimal time, and it was fun to roll around from area to area instead of shuffling your knees like you do with traditional-style knee pads. But there are situations where you want to have stable contact with the floor, like if you are edging and want to have a knee down. The rollers don't offer the resistance necessary to anchor yourself. For now, these knee pads aren't going to see regular use from us. They are a cool concept, and if they come up with a version that resolves some of the issues we encountered, we would be interested in trying them again. I would like to hear some of your thoughts; if any of you have tried them, please leave your feedback at the online version of this article at wfbmag.co/am19toolttime.

Retail: \$59.99



The KneeBlades are designed to be used in rolling mode or as just knee pads; we found they were comfortable when rolling but not when used alone.

See a video and more photos in the online version of this article at wfbmag.co/am19toolttime.



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Powderpost beetles: small pests that can cause big trouble

By Michael F. Potter

THE CHAOS USUALLY starts with a call about some type of insect emerging from the wood floor you recently installed for one of your customers. From there, you might find out that one or more exterminators have already told your client (incorrectly) that their entire floor needs to be replaced, or at

least, resanded and sprayed with a pesticide. Unfortunately, these scenarios can and do happen to wood flooring pros, and they can threaten your very livelihood. Reading the facts in this article will help you understand these pests and how to develop a plan of action in case your floors fall victim to an insect invasion.

What are powderpost beetles?

Various insects infest wood within dwellings, most notably termites, carpenter ants and beetles. Similar-looking bugs that are not wood infesters also appear in buildings, so correct identification is crucial (see the sidebar “Mistaken Identities” on page 42). In respect to the wood flooring industry, wood boring beetles, specifically those called “powderpost beetles,” are the group meriting the most attention.

“Powderpost beetle” is a term used to

describe several species of small ($\frac{1}{8}$ – $\frac{3}{4}$ -inch-long) insects that reduce wood to a flour-like powder. The grub-like larvae make narrow, meandering tunnels in wood as they feed (see the photo on page 38). Newly emerged beetles mate and lay eggs beneath the surface of bare, unfinished wood. The eggs hatch into tiny larvae that bore in the wood, emerging as adults months to years later.

Warning signs

Because the adult beetles are cryptic and active mainly at night, customers are more likely to see holes and powder than the beetles themselves. Occasionally, a beetle might be spotted emerging from an exit hole or on a windowsill, since some are attracted to light.

Tunneling and development take place entirely below the wood surface, so infestations are normally missed during

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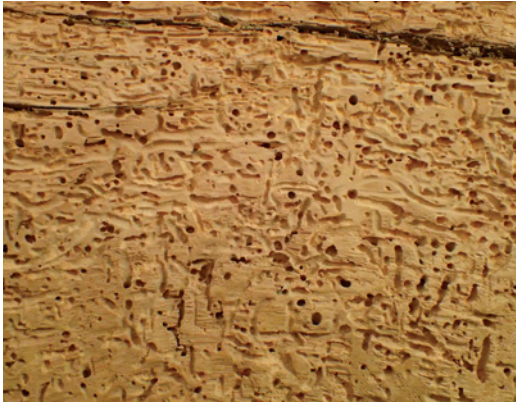


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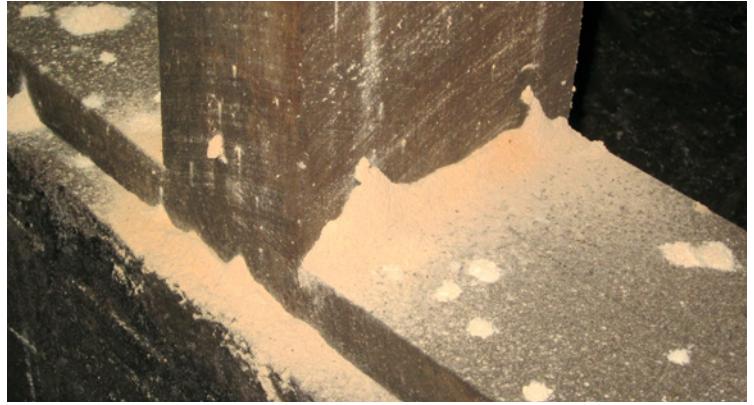
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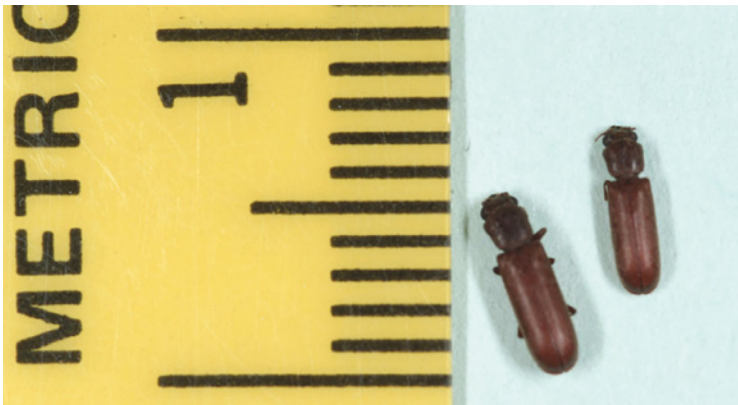


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Powderpost beetles make narrow, meandering tunnels as they feed, producing small round holes accompanied by wood powder.



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Lyctid powderpost beetles.



Tom Myers

the wood flooring installation process. Infestations are usually discovered after noticing powder, accompanied by small, round “shot holes” on the wood surface. These are exit holes where adult powderpost beetles have chewed out of the wood after completing their development.

There are different types of powderpost beetles, with different behaviors and warning signs. The most common types infesting wood flooring are lyctids and bostrichids. Lyctids tend to be more common, but both varieties can inflict damage.

A third category, anobiids, seldom infest indoor flooring because they require elevated wood moisture, although they are sometimes found in reclaimed wood from old barns, etc.

Lyctid powderpost beetle facts

These are small ($\frac{1}{16}$ – $\frac{1}{4}$ inch), narrow and elongated, reddish-brown to black beetles. Their emergence holes are round and about the size of a pinhead. The powdery dust feels like flour or fine talc and often accumulates in small piles near the holes.

Lyctids attack only hardwoods, such as oak, ash, walnut, hickory, maple and cherry. Because of this, lyctid problems typically arise in floors, molding, cabinetry and furniture. Tropical hardwoods are especially prone to infestation due to poor storage and drying practices before importation.

Lyctid powderpost beetles do not infest pine and other softwoods, so structural wood members are generally immune from attack. This is important to communicate to customers, who often worry that infestations in flooring will spread into walls, studs, etc. Lyctid beetles also avoid softwood plywood used for subflooring.

Lyctids do not infest wood via surfaces that are stained, coated, waxed or painted. After they emerge and mate, beetles locate susceptible wood to lay their eggs. Ten to 50 eggs per female are inserted into the tiny pores and vessels of unfinished hardwoods. Although they don’t infest wood through coated surfaces, beetles already within infested wood can emerge through subsequently finished surfaces. Before depositing eggs, female lyctid beetles “test” the suitability of wood; if the starch content





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Bostrichid powderpost beetles.

of the wood is insufficient, the females will not use it for egg laying. Lower starch levels also make it harder for the larvae to complete their development.

Lycitids are less particular about moisture than other types of powderpost beetles, and larvae can persist in wood with a moisture content as low as about 8 percent. However, at such low moisture levels, beetles develop more slowly, just as they do in older wood with declining starch content.

Infestations eventually cease and die off even without intervention. In newly seasoned wood with abundant starch and other nutrients, egg to adult development takes less than a year. As wood ages, starch content declines, and development slows to the point where some beetles may not emerge for two or more years, if at all. This is an important factor when weighing options (see “Remediation options” on the facing page).

Small numbers of lyctid beetles already in the wood may continue to emerge for up to about five years. Homeowners should be informed of this possibility, and that the prolonged emergence is due to diminished suitability of the wood rather than re-infestation by other beetles.

Bostrichid powderpost beetle facts

Bostrichids also cause problems in hardwood flooring, but less often than lyctids. Most species attacking wood products are brown to black ranging in length from 1/8–1/4 inch. Compared with lyctids, bostrichids are less narrow-bodied and flattened, and the head is oriented downward, appearing “hooded.” Many species also have tiny, rasp-like bumps behind the head. Like other powderpost beetles, bostrichids create circular 1/8–1/4-inch

holes in wood. Their wood powder is more meal-like than lyctid powder and tends to remain tightly packed in the holes and feeding galleries of the larvae.

Bostrichid powderpost beetles are more serious pests of hardwood than softwood, and they pose little risk to structural framing within homes. Similar to lyctids, bostrichids usually attack newly processed wood with high starch and moisture content. Tropical hardwoods and bamboo are especially vulnerable to attack, which often occurs before importation. Like lyctids, bostrichids seldom re-infest wood after the first generation emerges. Nonetheless, extensive damage can occur the first year due to a high initial population and rapid development.

Is the infestation active?

Powderpost beetle infestations often die out of their own accord. The first step is determining if the infestation is active. Here are some questions to ask:

Is there powder by the exit holes?

Active infestations usually have powder recently pushed out of some of the exit holes onto the flooring surface. Old, abandoned holes will have no accompanying powder and will have taken on the aged appearance of the surrounding wood.

Are the holes “angled?” Holes that appear to be on an angle suggest beetle emergence occurred before cutting and planing.

Is there stain or finish in the holes? If the floor was previously stained or coated, new emergence holes will have no traces of stain or finish inside the holes.

Another way to confirm that an infestation is active is to mark or seal any existing holes, sweep or vacuum up all existing powder, and recheck the wood for new holes and powder later on. Since beetle





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Active versus inactive infestations: The active infestation (on the left) usually has fresh powder accompanying the emergence holes. Inactive infestations like the one on the right have holes that were present before the wood was stained and/or coated.

emergence often occurs in spring or summer, it is useful to wait until then to determine if new holes and fresh powder are present.

Active infestations should not cause panic

Remember that beetle damage occurs slowly, and there is little threat to other wood items in the building. As noted previously, these kinds of beetles usually enter homes in manufactured materials such as flooring, cabinetry, molding, paneling, furniture, etc. Infestation occurs after logs are sawn into lumber and the wood sits in storage, or during transit and distribution. Therefore, it is prudent for suppliers and installers to inspect incoming materials for signs of beetles before turning them into finished products. Wood that is suspect should not be used, especially if emergence holes or powder is present.

The majority of powderpost beetles emerge from wood flooring in the first few years after installation. Damage can be significant if large numbers of eggs were initially inserted into the wood.

There are various reasons why powderpost beetles have a hard time re-infesting flooring and other wood items within homes. As wood ages, levels of starch, moisture, and other nutrients decline to the point where the pests can no longer complete their development, and the declining number of adult beetles that do manage to emerge have a hard time finding mates. Propagation and spread are further diminished because most interior surfaces are sealed/finished—once stain, finish, etc., is applied, wood surfaces are no longer suitable for laying eggs. Although undersides of floors, cabinets, and furniture remain unfinished, declining starch and moisture makes re-infestation via these areas unlikely.

The same is true of any beetles attempting to lay eggs in former emergence holes; sealing the holes further prevents this possibility.

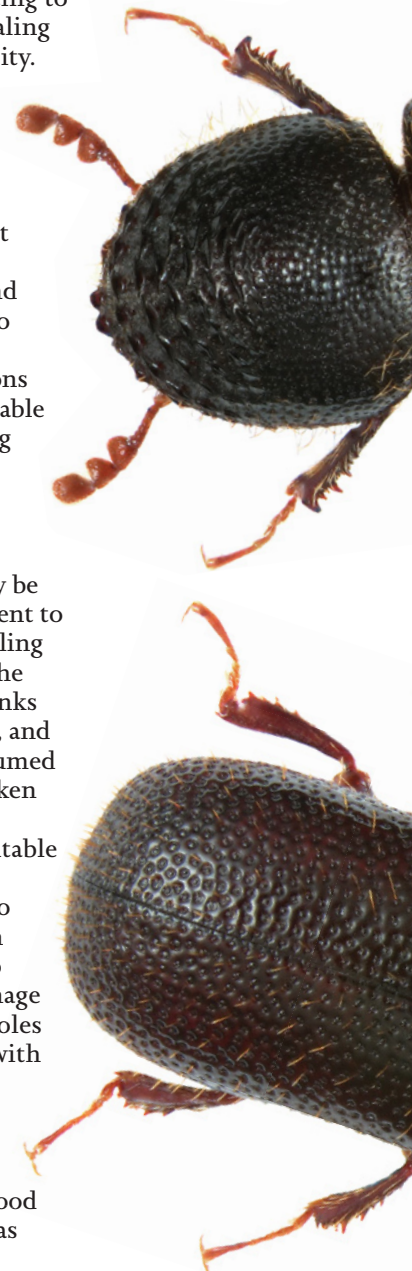
Remediation options

As just discussed, usually infestations will run their course, and the beetles will eventually die out. If there is an active infestation, the best approach depends on extent of the damage, potential for re-infestation, and cost—both financial and emotional—to the parties involved.

Wood Replacement: Since infestations tend to be self-limiting, it is often advisable to replace only those sections of flooring showing signs of beetle activity. This is especially true when holes and powder are limited to small sections of flooring or a few pieces of molding, trim, etc. As an added precaution, it may be prudent to replace planks directly adjacent to any that are damaged since larval tunneling sometimes extends from one plank to the next. Beetle emergence holes in any planks that were not replaced should be sealed, and all visible wood powder should be vacuumed up so that old damage will not be mistaken for new.

For additional peace of mind, a reputable pest control firm can be retained to inspect annually for a few more years to ensure all activity has ceased. Although it cannot be forecast precisely when no more emergence will occur, future damage should be minimal, and if additional holes do appear, an agreement can be made with the customer to cover additional wood replacement.

Residual Insecticides: Various insecticides are available to treat beetle-infested wood, although their use for wood flooring is limited. Insecticides known as



■ ON THE JOB TECHNIQUES

borates are most widely used for this purpose (Bora-Care and Tim-bor are two popular formulations). Spraying the wood surface may kill beetles as they emerge and young larvae tunneling inward, but borate insecticides are most commonly used for insects infesting joists, studs, sills and other structural elements of buildings. Their depth of penetration into wood depends on moisture content: The damper the wood, the deeper borates penetrate. The wood surface must also be unfinished since the spray will not penetrate water-repellent coatings. For this reason, borate products have more limited use for treating infestations within living areas of homes. They are sometimes used to treat beetle-infested wood floors, but floors must be sanded to raw wood first.

Apart from being laborious and disruptive,

insecticides are seldom necessary since the emerging beetles are unlikely to re-infest. Furthermore, the moisture content of wood flooring in temperature-controlled buildings is low—typically below 10 percent. Borate penetration in wood this dry is minimal and likely would have little effect on developing larvae already within the flooring.

Fumigation: Fumigation is an extreme and costly option for ridding a home of powderpost beetles. Homes undergoing fumigation are covered and tightly sealed with tarps, and occupants must remain out for at least a day. Current fumigants (e.g., Vikane/sulfuryl fluoride) are less effective on wood-boring beetles than former compounds that are no longer available. Consequently, de-infestation may not be successful. Furniture and other portable items can be fumigated more efficiently and at a substantially lower cost than treating an entire building.

Mistaken identities

Many similar-looking beetles that are not powderpost beetles occur within buildings, and this can cause trouble when wood floors are wrongly accused. It is important to know the difference to avoid confusion and prevent costly, unnecessary treatments and repairs. Definitive diagnosis often requires confirmation by an entomologist or knowledgeable pest control specialist. Here are two cases where wood flooring was mistakenly initially blamed as the source of these beetles:

Food-infesting beetles:

Powderpost beetles are sometimes confused with other small beetles infesting such food items as flour, cereal, grains, seeds, or pet food.

The source is often in kitchens, pantries, etc. The beetles above, thought to be infesting a brand new floor, were living in a container of dog biscuits



Michael F. Potter



Tom Myers


Foreign grain beetle: Another pest group often mistaken for powderpost beetles scavenge on surface molds associated with damp conditions. One of the most common is the foreign grain beetle. The beetles are small (about 1/16-inch long), brownish, and abundant. None of the beetles in this category damage wood; once the moisture condition is resolved, the surface molds disappear along with the beetles. An exterminator initially misidentified this foreign grain beetle at left and recommended full-floor replacement.—M.P.

How do infestations originate?

Powderpost beetles usually start emerging from flooring and other manufactured items within a year of installation. In most cases, some of the wood contained developing beetles before installation. While such beetles sometimes infest firewood, this seldom has anything to do with infestations in flooring.

The wood items with the most beetle holes and powder are the most likely source of introduction. For example, if most of the holes and powder are in kitchen cabinetry, it is doubtful the flooring was primarily involved. It is often hard to determine where and when materials became infested before installation. Generally, the longer wood sits in a vulnerable state during processing, drying, distribution and storage, the greater the chance beetles will find and lay eggs on the lumber. Consequently, manufacturers and suppliers of flooring materials often have more culpability for such problems than installers do—especially when the materials were purchased and installed over a comparatively brief period.

Manufacturers and retailers of flooring often incorrectly assume their products could not possibly have contained live beetles when initially sold because the wood had previously been kiln dried. Although kiln drying at temperatures of about 125–140



degrees Fahrenheit is sufficient to kill all stages of insects, even wood that is properly kiln dried can become infested during subsequent distribution and storage. Consequently, assertions by manufacturers and suppliers that their materials could not contain live beetles because they were kiln dried are invalid.


Closing thoughts

Beetle problems in wood flooring can be stressful and costly to suppliers, installers, and their customers. It is important to diagnose the problem correctly to avoid unnecessary effort and expense. Identifying the beetle involved and whether the infestation is active are crucial first steps. Other considerations include the extent of infestation and the type, age and moisture content of the wood. Since powderpost beetles damage wood slowly, take some time to educate the parties involved and develop a plan of action. As discussed, drastic measures such as removing all of the flooring or

fumigating the home are usually unnecessary.

Clients sometimes have concerns that such infestations will harm the future value of their home. Since beetles in flooring do not perpetuate indefinitely, this should not be a big concern, especially after the pests are no longer active. Many more homes have been treated for termites and have retained their market value; beetles in wood flooring are even less threatening. ■

Michael F. Potter is an entomologist and Provost's Distinguished Service Professor at the University of Kentucky in Lexington, Ky.



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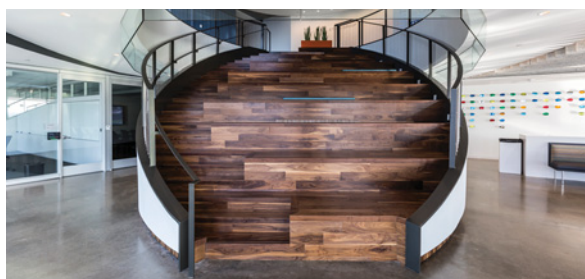
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Thanks to all who submitted this year, and congratulations to the winners, who were chosen by an independent panel of wood flooring experts (Readers’ Choice is selected via an online survey).

Prizes include a \$500 Visa gift card and prize packages from this year’s Design Awards sponsors, Bona, Osmo and Bostik.

Do you have a project you’d like to submit for next year? To enter our 2020 contest, which is open to all wood flooring professionals, go to wfbmag.co/wfbdesign20. To see this year’s winners, turn the page.



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AFTER LIVING MOST of his life between Indiana and Chicago, multi-award-winning wood flooring pro Chuck Crispin now calls the year-round sunny clime of West Palm Beach, Fla., home, but this job drew him back to the frigid north once more.

Unlike Crispin, the homeowners of this Lake Placid, N.Y., cabin, love winter, and they pack up their family in New Jersey every weekend to take full advantage of the winter wonderland of upstate New York. When they spotted Crispin's log round flooring on Houzz.com, they knew it was perfect for the addition they were putting on their beloved winter retreat.

The majority of the flooring, however, was assembled in Florida. Using the builder's drawing, Crispin created the layout and devised a panel system such that he could build most of the flooring on ½-inch Baltic birch plywood, then drive it north for final installation. Pegs were designed into the border to disguise where the panels are screwed securely to the subfloor. (See that flooring on the cover of this issue.) With the help of Eric Rout from start to finish, the panels were built with the largest rounds, comprised of white oak, and the 3- to 6-inch sized rounds, made of walnut, glued to the plywood, then driven to New York.

As happens, the plans from the builder turned out to not be exact, requiring reconfiguring on site. They then turned their

attention to an octagonal room (pictured above), which they had intended to build on-site all along, and discovered an electrical box smack in the center of the room. "After thinking about it a little bit, I started with a smaller piece and did a spiral off that electrical box to kind of make it look like it belonged there," Crispin explains. "The more we worked at it, the better it started looking."

With the main logs all glued down, it was time for the smaller pieces. "The real challenge of any floor like that is in calculating and cutting enough of the little twigs that go between the bigger tree rounds to leave as little grout space as possible," Crispin says. "Everything smaller than the walnut is whatever dead tree we found in the yard and cut up that day." Among them were maple, ash, sassafras, hickory, pine, fir and juniper.

The log rounds received a sanding and two coats of sealer before installation, then a coat of stain and tung oil on site. Then they were grouted using a proprietary recipe that includes cork dust, sawdust and oil binders that harden over time. Crispin applied the grout once, let it dry and shrink, then applied it a second time. He expects to return after a year to grout a final time, but don't expect him to linger and take advantage of the local pastimes. "The last time I was skiing I hit a tree," Crispin says.—K.M.W.

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THOSE FAMILIAR WITH Joe Rocco's work expect him to take wood floor artistry to another level (literally, in the case of his still-viral floor that bends up off the floor to support a bartop). So when his own mother told him she would like a wood floor in her sewing room, the chances of him installing an average wood floor were zero.

"She loves the mountains and living in Colorado, so I wanted to do a chevron pattern, because it would be kind of like the mountains," he explains, adding that he thought it would be a great teaching opportunity for his employees. "And it kind of snowballed from there." Rocco conceived of an offset white oak chevron with different flooring lengths. Then he considered how "chevron always ends in these weird angles, and this room wasn't super square, so I thought it needed an apron."

Rocco decided the apron should be soldier rows of red oak with offset fan corners, and it should intersect with the field on a big arc, so he and his workers created MDF templates for a 43- and 46.5-foot radius. They cut the inside radius first, laid the soldier border and fanned corners, then routed out the outside of the apron. The border pattern, conceived to look like a seamstress's stitch, was created from steam-bent maple and padauk set in a jig to dry. Then they were glued, put back in

the jig to dry again, mitered and fit such that the "thread" appears to cross itself. The stitch insert was hand-routed using a template; tips were hand-chiseled. Once installed they were left slightly raised and sculpted.

"While all that was going on, I was like, 'It really needs something in the middle,'" Rocco recalls. He and his crew had created an offset wenge starburst oval medallion as a teaching opportunity, so he decided to use it but add inlaid flowers using Epoxxy UV epoxy with different colors and metallics.

They wire-brushed the chevron and cerused it with a silver metallic coating, then coated the floor with waterborne finish.

"Joni's [Rocco's wife and business partner] been calling it our first commissioned piece," Rocco says, noting that it was a paid job "because there's no way my mom would have let me do it for free!" But it did allow him the flexibility to try new ideas. "That's what it's all about—being able to push the boundaries and let my guys do something new," Rocco says, noting that he's particularly proud of his employees Kevin Eder and Paul Chaffin, who cut the white oak chevron and wenge offset starburst, and Yezid Ortiz Castro, who—with less than a year of experience—assisted from installation to coating. His pride, however, undoubtedly can't compare to that of his most important customer ever—his mom.—K.M.W.



Yantarnaya Pryad-Parquet/Art Parquet

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IF WOOD FLOORS could talk, many of Art Parquet's past projects would undoubtedly have a knack for Eastern European diplomacy. The company is no stranger to installing stunningly elaborate wood floors in government buildings in and around Russia, nor is it a stranger to collecting awards for them. Its latest award-winning tour de force adorns the Palace of Independence, where the president of the Republic of Belarus resides in the capital city of Minsk.

"This building is intended for different official events such as award ceremonies, press conferences and meetings of foreign delegations," Art Parquet Import and Export Manager Natalia Lebedeva explains.

Because the building's function is to welcome officials from around the world, Art Parquet worked closely with the architect to design the intricate flooring accordingly. "The interior construction had to observe elements of both the Western and Eastern cultures," Lebedeva says, noting that it was made to resemble an elaborate carpet (a nod to Eastern tradition) and that the wood and form of the tiles were meant to reflect a more Western style. The

floral-themed floor was also designed to have a 3D effect, a look achieved through the combination of light and dark woods. "Because of the contrasting wood species, the flooring looks deep," Lebedeva says, referring to the oak, merbau, ash, maple, wenge and walnut in the floor.

The impressive palace hall spans 3,358 square feet, and it took 40 days to CNC-cut its 42 tiles, each of which measured 6.6 feet by 6.6 feet. After installing three layers of plywood substrate over concrete, the five-person crew marked off the center of the room and then began laying the heavy square tiles around it. Once the tiles were glued and nailed into place, the crew carefully inserted the central medallion and then installed a border, completing the installation process in 35 days.

With the parquet in place, the team sanded four times, ending on 100-grit, then applied two coats of primer and three coats of finish.

Laced with both Eastern and Western traditions, the completed project also continued one of Art Parquet's own traditions: installing staggering wood floors in preeminent buildings.—R.K.

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FOR A WOOD flooring company with commercial projects as colossal as the ones Woodwright handles, from the George W. Bush Presidential Library to The Kimbell Museum in Fort Worth, Texas, it's rare that a job isn't a team effort.

So perhaps it's fitting that the company has been tackling one of the latest team-building design trends in corporate offices around Dallas: staircases that double as stadium seating—otherwise known as “Social Stairs.”

“The real purpose of that design is to be a gathering place for people,” Woodwright Architect and Design Consultant Rick Farrell says of the company's winning walnut staircase. “It's almost like a mini Starbucks.” Farrell says he first noticed the concept in a 2013 Owen Wilson comedy called “The Internship” (as a wood floor pro and designer, naturally what he took away from the film was the staircase design).

Although the popular Social Stairs are meant to foster a casual atmosphere, putting them together takes intense precision, particularly when dealing with prefinished product. “You've got to take your time and get it right the first time,” Farrell says of the custom walnut nosings manufactured by Woodwright to fit the unique shape of the stairs, which

are hugged by an oval frame. After gluing down a plywood substrate over the metal staircase, the installation team glued 2-mm rubber sound underlayment on the plywood to reduce echoing. When it came time for the walnut, they installed the custom nosings first, backfilling them with the prefinished walnut and using buckets and sandbags to weight down the treads on the adhesive overnight. “One of the big challenges is gluing all that stuff down to that tiered seating and not being able to nail it,” says Farrell, noting they couldn't puncture the sound pad.

The final piece of the Social Stairs was the ¼-inch aluminum “distraction strip” installed on each stair tread to distinguish them from the tiered seating area and keep people from mistaking the seating for the steps (walking up or down the seating area of Social Stairs is frowned upon).

In the four months it took to complete the Social Stairs, 15 people from Woodwright contributed to the project, including the installers, project manager, superintendent, estimators and manufacturers, proving that some of the best jobs take a team effort. “In the end, it's a relatively small job in comparison to what we do,” Farrell says. “It's just a really cool, unique look, but it has so much detail work.” —R.K.

Suppliers

Advertisers appear in green.

Abrasives:

Norton Abrasives

Adhesive:

BOSTIK

Wood Flooring:

Hallmark Floors, Owens Flooring



Praters Inc. | Chattanooga, Tenn.

BEST GYM

TYPICALLY A WILDLY out-of-the-box design for a portable basketball court combined with an extremely tight time frame for a high-profile event—held outside, no less—simply wouldn't be possible. But the technology developed by Praters Inc. has been a game-changer, so when the company organizing a celebrity Adidas event during the NBA All-Star game in Los Angeles asked Praters if they could pull off the design—created in conjunction with the release of new shoes from Pharrell Williams—the answer was yes.

The key was the company's patented decal system. "In 2011, the NCAA came out and said decals on the court had to have a consistent surface with the rest of the court, so we had to figure out how to put gym floor finish on them," says Mark Frainie, Praters COO. (Although the company applied for the patent five years ago, it was just approved this year.) This meant Praters could get the design less than two weeks before the event.

"For events, that's very common," Frainie says. "These guys are trying to think of how to make the events the best they can be up until the time when the event goes live, so things are always fluid." Because this was a full-court wrap, it had between 80 and 100 decals. Praters printed them in Chattanooga, laid them out on a portable court in their facility to make sure all was in order, printed extra

pieces, then carefully organized the boxes.

In Los Angeles, the portable court, which had been sanded and coated with no game lines, was installed in four hours. Applying the decals, which requires skill and patience even under ideal conditions, proved to be the most challenging aspect of this installation. "We were sticking outside, and we could only stick during certain parts of the day. If it's real sunny, the heat from the sun makes the install difficult because the material will want to stretch from the heat," Frainie explains. "Also, every night at 9 or so the dew would start to fall ... so a lot of work was done between midnight and 8 a.m. and between 6:30 and 9 at night." The crew had a huge tarp that was being used to protect the court from potential rain and dew, "so we were constantly uncovering, working for a minute and covering it back up," Frainie says.

With the limited hours, the decal application took three days, and the court was ready for its starring role in the Adidas event, dubbed "747 Warehouse St—an event in basketball culture." Over the weekend it hosted celebrity games and performances by Pharrell Williams and other high-profile performers. At the event close, the decals were simply removed, leaving a plain court ready and waiting for its next turn in the sun.—K.M.W.

Suppliers

Advertisers appear in green.

Finish:

BONA US

Wood flooring:

Connor Sports

Creative agency:

Kamp Grizzly



Daniel Wood Floors

| Humble, Texas

LOVE, PASSION, COUNTLESS hours on the scroll saw ... those are the ingredients Daniel Saucedo says were necessary to create this unique African scene in a wood floor. What the piece didn't require, he notes with pride, is filler.

Its story began when a customer saw a zebra-rug inlay Saucedo had created for his own home and asked if he could create an elephant for her. He replied that he could, taking inspiration from a poster he had bought. With her approval, he began to create the behemoth, and then she asked him to add more elements, like giraffes and trees. When the price increased to accommodate the changes, though, "She said, 'Daniel, I can't do it, you are already charging too much,'" and she backed out, he says. Left with a partially built ultra-custom floor, he decided to complete it and install it in his showroom's hickory plank floor, despite one of his own employees telling him he was crazy to attempt it by hand.

Saucedo ended up working on the floor when he could every day for about three months, experimenting with different species and adding small details, some that worked (a lizard) and some that didn't (a dragonfly that was too small). The final floor has 13 species. He originally intended to use end grain to make the elephant but determined that it would take too long and used quartersawn white oak instead, leaving it slightly higher than the rest of the floor. With the elephant created and sanded, he drew the wrinkle lines with a pencil and carved the texture, a task requiring four days of 8-10 hours clutching a Dremel with a small carving tool.

The elephant is the only element that was stained; Saucedo taped it off and used dark gray stain. The other colors in the piece come from the species' actual colors. For the elephant's tusks, Saucedo bent maple, and he used walnut, wenge and Brazilian cherry for the eyes. The ground beside the elephant is black palm, the sky is padauk, the mountains are bird's-eye maple and the sun is ash. The water where the hippos are is oak with Peruvian walnut and wenge stones; the flower is purpleheart, maple and wenge; and the butterfly is maple, wenge and padauk. The lizard is red oak.

Once built, the entire piece was coated with hardwax oil, and it's now a focal point that literally stops customers in their tracks. "They look at it and wonder, 'How did they do it?'" Saucedo says. After so much hard work, Saucedo is thrilled the work went from being a paying job to a stunning showpiece. "I'm happy to have it here in my showroom," he says. "I see this piece every day and I'm so excited." —K.M.W.

NEXT GENERATION

Suppliers

Advertisers appear in green.

Abrasive:

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Adhesive:

BOSTIK, Fortane

Buffer, Edger:

American Sanders

Filler:

DuraSeal

Finish:

Pallmann

Moisture Meter:

TRAMEX

Nailer:

PowerNail Company

Router:

Porter-Cable

Sander (Big machine):

LÄGLER

Sander (Palm):

DeWalt

Saws:

DeWalt, Bosch

Underlayment:

FORTIFIBER BUILDING SYSTEMS GROUP

Wood Flooring:

Shamrock Plank Flooring, Heritage

STATE OF THE INDUSTRY 2019



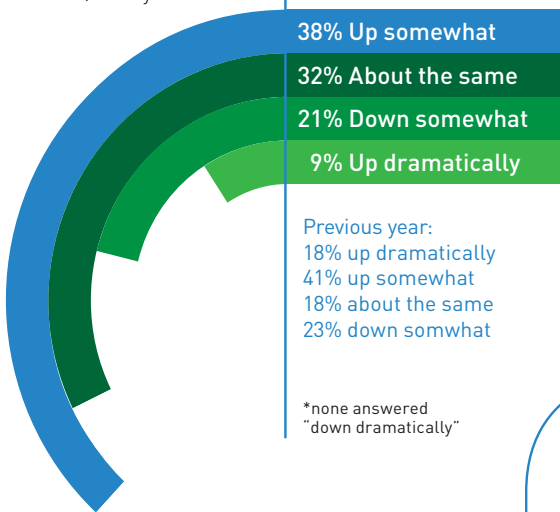
Although many wood flooring pros feel positive about 2019, others are cautiously watching the predictions for housing this year and tempering their expectations. What else did we find out in our exclusive State of the Industry survey (which we have published since 1992)? To discover more helpful data from wood flooring manufacturers, distributors, retailers and contractors, keep reading.

MANUFACTURERS

Here are the results from the wood flooring manufacturers who participated in our online survey in January.

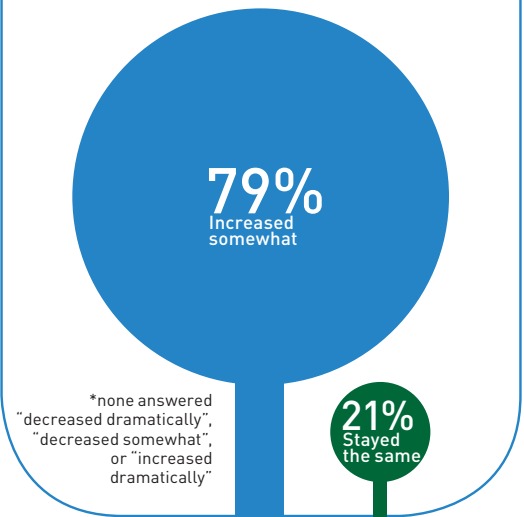
2018 Results*

Their sales (in dollar volume) last year were...



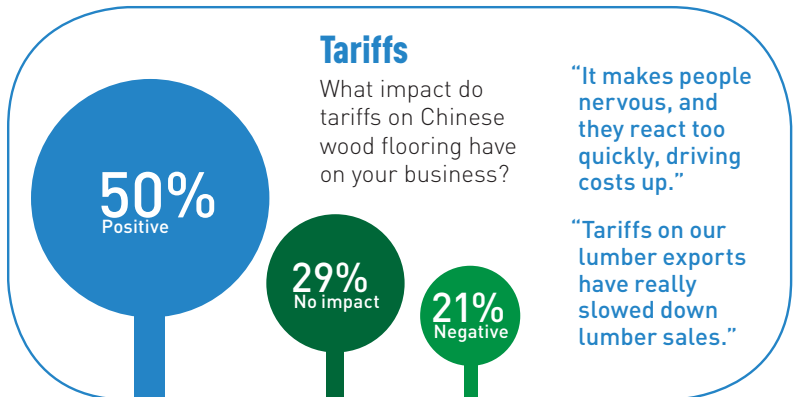
Raw Material Costs*

Manufacturers say what they paid for raw materials last year...



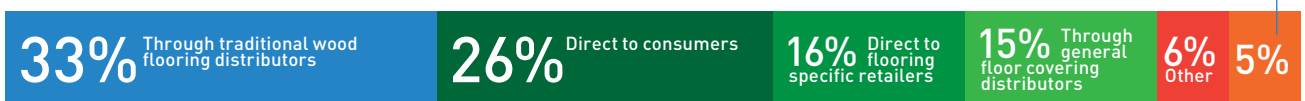
Tariffs

What impact do tariffs on Chinese wood flooring have on your business?



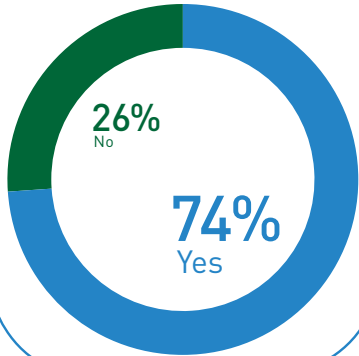
How They Sell

How manufacturers broke down their sales channels:



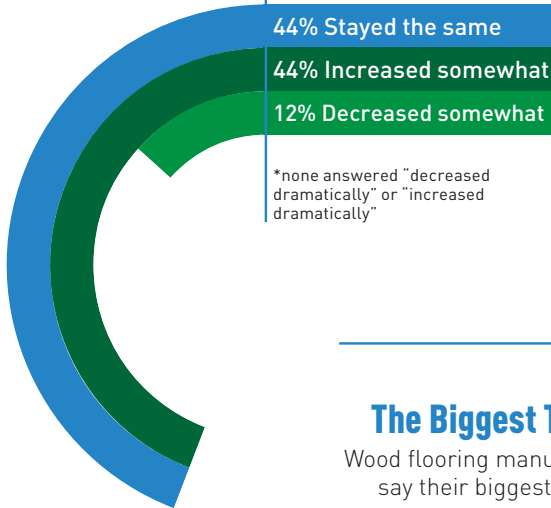
Should LEED Change?

Should LEED recognize other wood flooring certifications besides FSC?



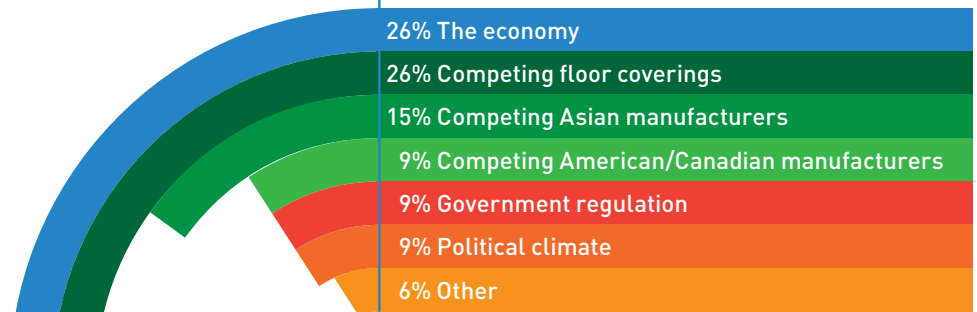
2018 Prices*

Manufacturers say wood flooring prices last year...



The Biggest Threats

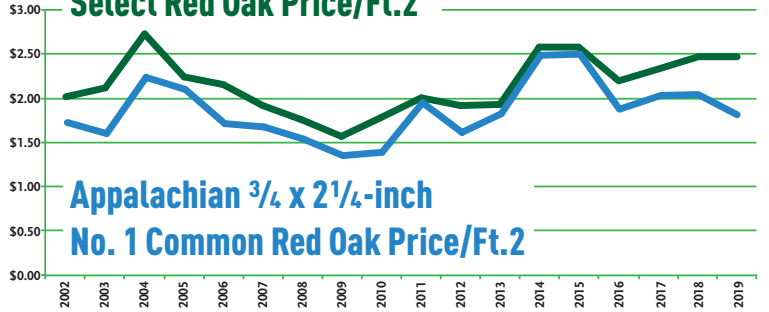
Wood flooring manufacturers say their biggest threat is:



Previous year:
 32% competing Asian manufacturers
 23% competing floor coverings
 18% other

9% the economy
 9% competing American/Canadian manufacturers
 5% government regulation
 5% political climate

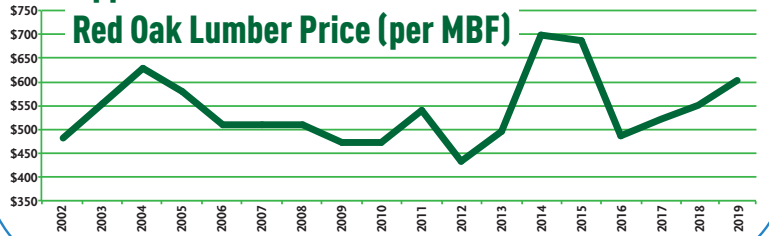
Appalachian 3/4 x 2 1/4-inch Select Red Oak Price/Ft.2



Appalachian 3/4 x 2 1/4-inch No. 1 Common Red Oak Price/Ft.2




Appalachian Green 4/4 No. 2A Red Oak Lumber Price (per MBF)



Source: Hardwood Market Report

Please characterize your outlook for the wood flooring industry this year:

- We worry high inventories in U.S. today will drive prices down in the first two quarters.
- Resilient flooring is hitting the wood flooring industry hard, in addition to the political climate.
- It remains a desired product, but the competitive landscape with waterproof flooring and other advantages continues to pose challenges.
- I think as long as nothing crazy happens with the economy, we will have a record-breaking year.



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Armstrong's hardwood flooring segment: a timeline

After two decades as the largest and one of the most influential wood flooring manufacturers in the industry, Lancaster, Pa.-based **Armstrong Flooring** completed the sale of its entire wood flooring segment to a private equity firm on Dec. 31, 2018, for \$100 million.

The sale of its hardwood flooring business, which produced Armstrong Flooring, Bruce, Capella, HomerWood, T. Morton and Robbins wood flooring brands, came after three years of declines in hardwood flooring sales.

"The wood flooring industry has been impacted by changing market dynamics," Armstrong Flooring CEO Don Maier stated in the announcement of the sale, "and now is the right time to deepen our focus on LVT and other resilient flooring categories, where we are confident fundamentals remain strong for future growth."

The conglomerate of brands and six U.S. manufacturing facilities began a new era in January 2019 as **AHF Products**, a Lancaster, Pa.-based company formed by private equity firm American Industrial Products (AIP).

The following timeline traces Armstrong's rise to the top in the wood flooring industry and its eventual exit.

1978 – Triangle Pacific Corp. (Dallas), a cabinetry maker, buys **Bruce Hardwood Floors** (Dallas). Bruce would spend the '80s becoming the largest producer of residential hardwood flooring in North America.

1996 – Triangle Pacific buys **Hartco Flooring Company** (Knoxville, Tenn.), one of Bruce's biggest competitors, from Premark International for \$63 million, according to Neil Moss, a former regional manager with Hartco and later with Armstrong. Premark had purchased Hartco in 1988 for \$94 million and invested about \$30 million building a new manufacturing facility prior to the sale to Triangle Pacific.

1997 – Completing a quick one-two punch, Triangle Pacific also buys the residential flooring operations of **Robbins Inc.** (Cincinnati) and Robbins-owned **Searcy Flooring**. The acquisition brings Triangle Pacific's U.S. market share to 46 percent, the company reported, with \$653 million in revenue that year.

1998 – **Armstrong World Industries** (Lancaster, Pa.), a Fortune 100 company and a massive producer of sheet vinyl, buys Triangle Pacific for approximately \$890 million and assumes about \$260 million of the company's debt. Two weeks prior to the purchase, Armstrong had bought **DLW**, a major European hard-surface flooring manufacturer. After the acquisitions, the company's annual flooring revenue is estimated to be in excess of \$2 billion.

2000 – Armstrong declares bankruptcy after litigation regarding its manufacture of asbestos during the 1960s. Triangle Pacific announces that it and its subsidiaries (Bruce, Hartco

and Robbins) will not be impacted by the parent company's bankruptcy filing.

2006 – Armstrong purchases **Capella Engineered Wood LLC** (Vicksburg, Miss.) and **HomerWood Hardwood Floors** (Titusville, Pa.), with annual sales of \$15 million and \$26 million, respectively. Later in 2006, Armstrong's plan of reorganization is approved, and it emerges from bankruptcy six years after filing.

2007 – Armstrong expands **Patriot Hardwood Floors and Supply Inc.** (Wilmington, Mass.), a distributorship included in Armstrong's purchase of Triangle Pacific in 1998, into Connecticut, New York and parts of New Jersey. Patriot continues to service its existing territory in Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. That same year, Armstrong launches its own distribution company, **Armstrong NW LLC** (Seattle), to distribute its products to specialty retail stores and flooring contractors in Washington, Oregon, Montana, Wyoming, Idaho and Alaska.

2009 – Armstrong lays off about 200 workers with plans to eliminate 425 positions in 2009, affecting plants in Jackson, Tenn.; West Plains, Mo.; Center, Texas; and Vicksburg, Miss. "The sales volume isn't there, and to stay viable as a business we must control cost," a spokesperson for the company says.

2010 – Armstrong lays off 260

workers at its hardwood flooring plant in Oneida, Tenn., and 60 at its plant in Center, Texas, citing a lack of demand in the residential market. The Oneida location (formerly a Hartco plant) shuts down its strip mill, finish line and yard operations.

2011 – The lack of demand continues, and the company announces more layoffs, this time of 116 employees at its wood flooring plant in Beverly, W.Va.

2012 – Armstrong sells Pompton Plains, N.J.-based distributor Patriot Flooring Supply Inc. (formerly Patriot Hardwood Floors and Supply Inc.) to Mansfield, Mass.-based distributor Belknap White Group. “Patriot distributes hardwood and laminate flooring, and we’re in the business of making and marketing floors,” Armstrong’s flooring CEO Frank Ready

says of the sale at the time.

2014 – Armstrong says it will exit DLW, its European flooring business purchased in 1998. Since 2007 Armstrong had invested \$150 million in the company, which did not generate a profit. It also closes its engineered hardwood flooring facility in Kunshan, China, and relocates its operation to Somerset, Ky.

2015 – The company announces it will split its flooring business from its ceilings business and create two independent and publicly traded companies, with the ceiling business remaining Armstrong World Industries and the flooring segment operating under the name **Armstrong Flooring**.

2018 – Armstrong gives distributors increased responsibility for the marketing, merchandising and sales

of its residential flooring products and cuts back on its in-house marketing. The reorganization leads to about 100 layoffs. Following declines in its wood floor sales, the company announces in November it will sell its wood flooring segment to AIP for \$100 million in order to focus on its resilient flooring operations.

2019 – AIP establishes **AHF Products**, an independent wood flooring company that will take over the former Armstrong wood flooring segment and maintain its brands. Brian Carson, a former senior VP of operations for Armstrong World Industries and the former president of Mohawk Industries (Calhoun, Ga.), is named president and CEO. Carson announces he aims to launch a record number of new products and initiatives in the inaugural year of the standalone company.—R.K.



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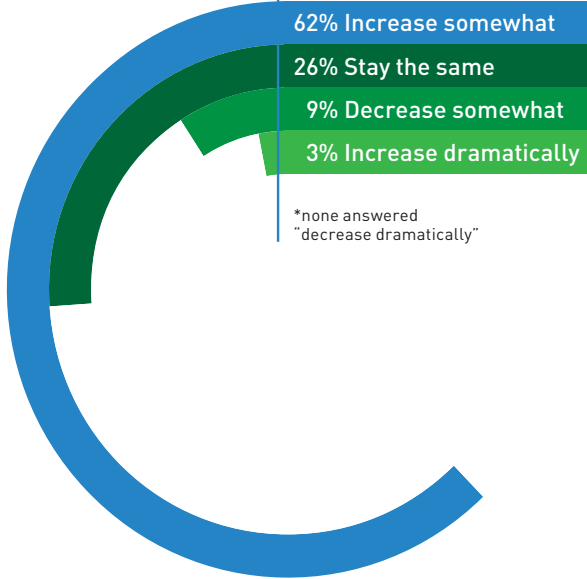
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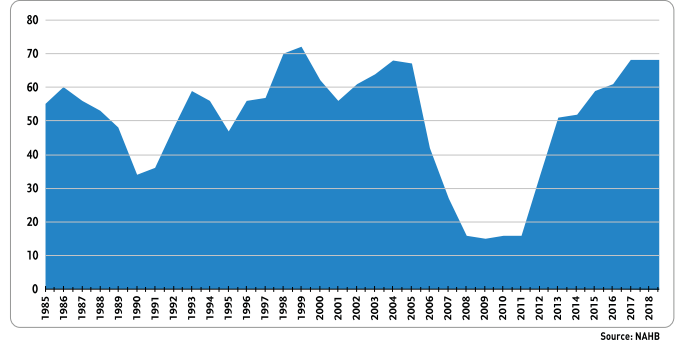
Future Pricing*

Manufacturers expect prices this year to...



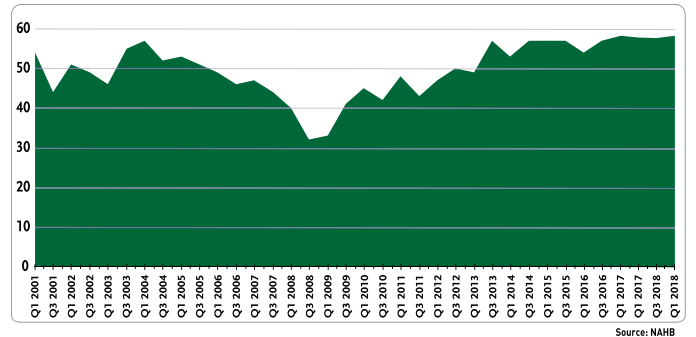
Housing Market Index

(Overall)



Remodeling Market Index

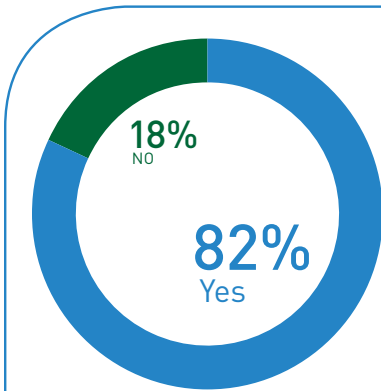
(Current Market Conditions)



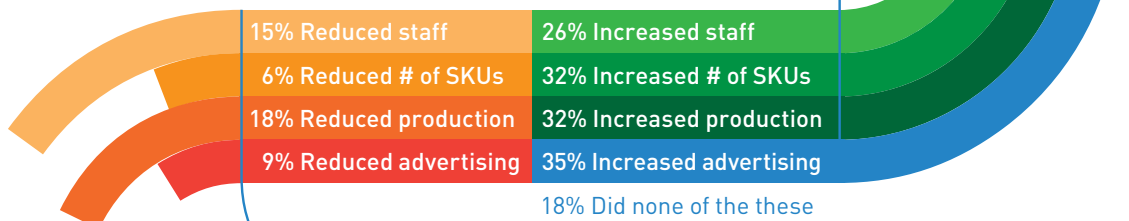
Lacey's Effects

Has the Lacey Act decreased the sale of illegal wood flooring?

"It has made more folks aware of the declining forests in other countries."



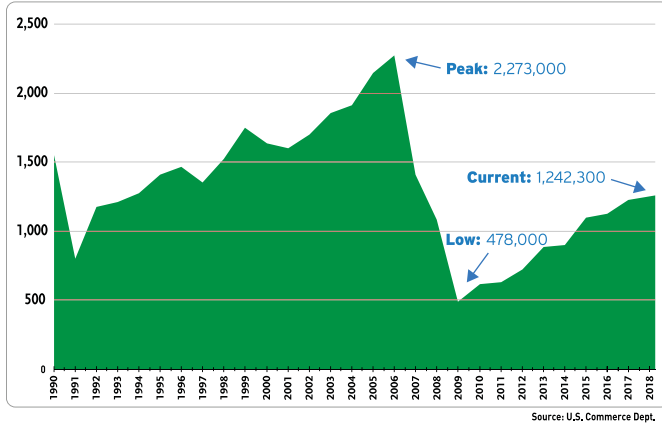
Changes They Made In 2018



◇ Figures may not add up to 100 percent due to rounding

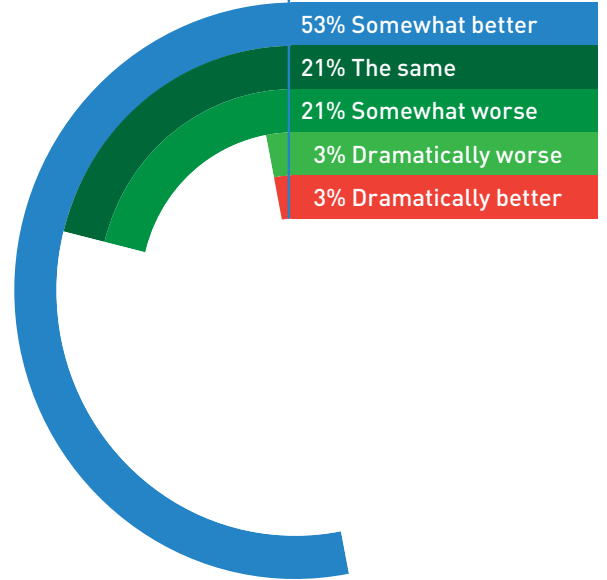
U.S. Housing Starts Annual Rate

(in thousands)



Predictions for 2019*

Manufacturers think business this year will be...



Trend Expectations

- 82% expect demand for wide planks to increase.
- 68% expect demand for light colors to increase.
- 68% expect demand for LVT/WPC flooring to increase.
- 47% expect demand for distressed flooring to increase.

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The distributors responding to our survey were 77 percent wood flooring specialists and 23 percent general floor covering distributors.

Species Sold



2% Other domestics
1% American cherry
1% Brazilian cherry
1% Bamboo

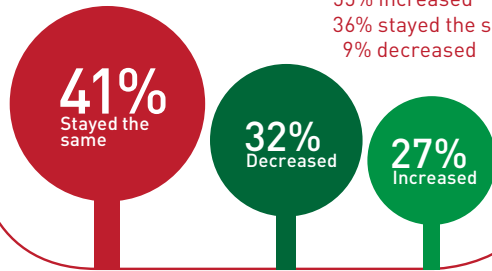
Previous year:
36% red oak
31% white oak
7% maple
6% other domestics
6% other imported species

3% pine
2% bamboo
1% birch
1% Brazilian cherry
<1% ash
<1% American cherry

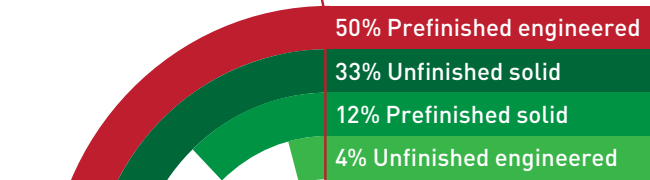
2018 Sales

Distributors say the dollar value of their wood flooring sales last year...

Previous year:
55% increased
36% stayed the same
9% decreased

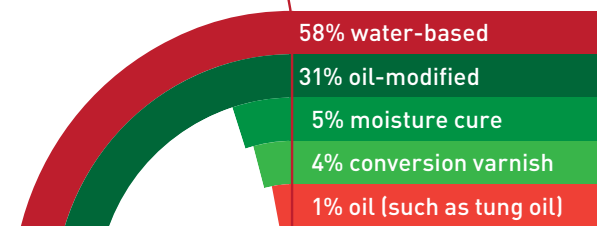


Flooring Types Sold



Previous year:
49% unfinished solid
28% prefinished engineered
19% prefinished solid
5% unfinished engineered

Finish Sold*



Previous year:
56% water-based
36% oil-modified
6% conversion varnish
2% oil (such as tung oil)
0% moisture cure
0% wax
0% other

*Wax was zero

27% of wood flooring distributors sold some products over the Internet in 2018.

◇ Figures may not add up to 100 percent due to rounding

Trend Expectations

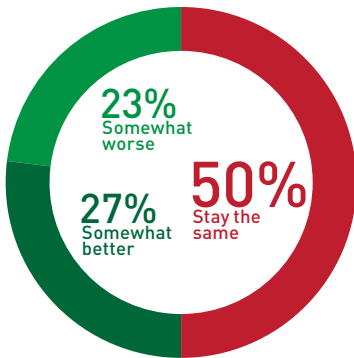
- 77% expect demand for LVT/WPC flooring to increase.
- 57% expect demand for light colors to increase
- 41% expect demand for gray colors to increase.
- 64% expect demand for bamboo to decrease.
- 23% of distributors expect demand for distressed flooring to increase, but another 23% expect it to decrease this year.



77% expect demand for wide plank to increase.

BC Hardwood Floor Co. Ltd.

2019 Outlook*



*none answered "dramatically worse" or "dramatically better"

How is your outlook different from last year?

- Last year we expected a very busy year in condo projects and a slow year in privately owned homes. This year looks to be the opposite trend.
- We are seeing tremendous growth in new housing starts in our area. Also, the Rocky Mountain region has historically weathered economic market corrections well.
- The economy is uncertain, and housing starts forecasts are down 20-30% in major markets.
- 2019 is going to slow down in new construction, and the stock market will correct, creating decreased confidence from consumers.
- My lines have settled down—we're ready to sell.

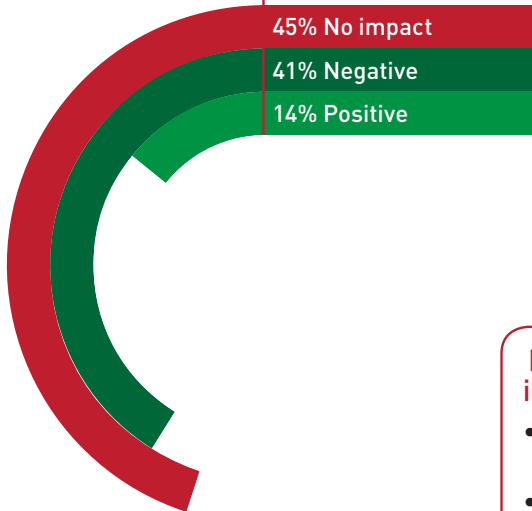
What Is The Biggest Threat To Your Business?*



*none answered "big-box stores"

◇Figures may not add up to 100 percent due to rounding

What impact do Chinese wood flooring tariffs have on your business?



How many square feet of wood flooring did you sell last year?

600,000
Median
3.8 million
Average

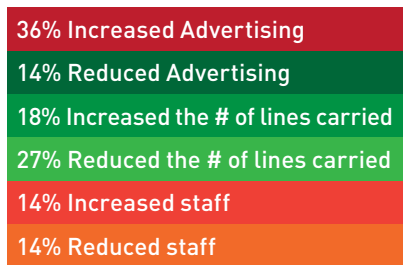
59% also sell laminate.

41% expect sales of laminate to increase in their region.

How is your business adapting to stay relevant in today's wood flooring marketplace?

- Building stronger relationship with designers to understand their needs and requirements.
- Going to the market that requires wood flooring only.
- We have turned our focus to marketing, in particular, digital marketing. We are working closely with our key suppliers to co-brand and co-market on social media.
- An increased focus on marketing and market research.
- We are trying to work more with retail stores.
- We are following style trends closely, dropping older lines and focusing on fewer products.
- We're starting to take on some LVT surfaces, and more engineered.

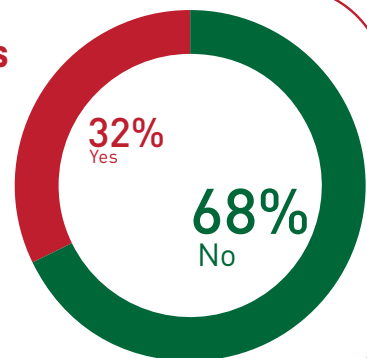
Changes They Made In 2018



18% Did none of the above

Liquidators

We asked distributors if they were affected by liquidators in their area.



◇ Figures may not add up to 100 percent due to rounding



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A shifting market after Chinese flooring tariffs

It has been a hectic past seven months for many companies that have relied on importing or exporting Chinese wood flooring for their business. The Trump administration's levy of an additional 10 percent tariff to all types of wood flooring from China in September 2018, with an ongoing threat of increasing it to 25 percent (still unsettled as of press time of this issue), spawned in-kind retaliation from the Chinese government and rattled segments of the wood flooring industry here in the United States. The trade war's impact, suppliers say, could alter the way the industry ticks.

But as big of an impact as the new trade war has had in the industry, the increased instability of the trade between the two countries wasn't entirely unexpected by wood flooring suppliers and distributors with skin in the game.

The first signs of disruption

"We started to move out of China several years ago, largely because of the antidumping duty on multilayer wood flooring," says Danny Harrington, VP of marketing and product development at Santa Fe Springs, Calif.-based Galleher LLC. "The way the U.S. trade policy is applied retroactively makes for a very unpredictable cost structure."

The U.S. imposed preliminary antidumping countervailing duties on certain engineered wood flooring from China in 2011 after an investigation determined multiple Chinese manufacturers had been producing and selling engineered wood flooring at an unfairly low price.

"All of the headache that we went through on the anti-dumping countervailing duty matter really set us up to be ready to handle this issue," says Sam Cobb, CEO of West Plains, Mo.-based Real Wood Floors. "The industry was already looking for somewhere else to go." In Cobb's view, the tariff on its own didn't amount to much more than a typical annual price increase, but when

combined with the anti-dumping duty already in place, it became potent.

The U.S. reaction

It was a need-to-hit-the-ground-running kind of moment for companies when the new tariffs were unveiled after two weeks of public hearings at the Office of the U.S. Trade Representative.

"It kind of came as a surprise to everyone that they moved as quickly as they did when they said to go ahead and levy the 10 percent," says Cobb, who testified against the tariffs during the public hearings. Numerous companies eventually announced price increases, many with the hope it would be a temporary measure.

The 25 percent tariff possibility, which President Trump delayed several times since its announcement, has caused flux and uncertainty in the industry.

"It's been a very, very busy fall and winter for me," says Harrington, noting he's flown to Asia twice this year already and to three Eastern European countries as he explores new facilities.

To get ahead of another possible price increase, Real Wood Floors purchased more flooring in the past quarter than ever before. Cobb has also moved almost all of his company's production out of China in the relatively short period. "There's just not really an option to stay there," he says. "It's not good business. Too many unknowns."

The China reaction

The Chinese wood flooring industry's reaction to the tariffs has been largely what some in the U.S. industry had anticipated: They moved quickly.

Recently, Chinese wood flooring companies have opened two factories in the U.S., two in Ukraine and six in Cambodia, according to Cobb. In December, Cobb visited seven wood flooring mills in Vietnam—six of them were Chinese-owned.

Should Chinese companies manufacture in Vietnam or Cambodia,

the two countries where much of the wood flooring production in China appears to be moving, Cobb says wood flooring will likely be even cheaper than it was in China due to lower tariffs and labor costs—precisely the opposite intended effect of the tariffs.

"This goes back to anti-dumping," says Cobb. "It's not a China issue. Because if you take China out of the picture, it's going to pop back up in some other country ... it's already happening that way."

The long-term impact

In recent months, the U.S. and China have been in negotiations to end the trade war and have reportedly been taking positive steps to that end, with President Trump delaying the threatened 25 percent tariff increase indefinitely and discussing rolling back the 10 percent tariff.

In the long haul, Harrington hopes trade with China will stabilize, noting that Chinese manufacturers have been considerably faster at keeping up with industry trends than U.S. manufacturers have been. If the trade war doesn't resolve, he foresees Chinese manufacturers landing on their feet.

"The Chinese consumer is embracing wood flooring now more than any time in the past," Harrington says.

As for U.S. importers relying on Chinese wood flooring without a contingency plan, should the tariffs jump to the threatened 25 percent, "overnight they would become uncompetitive," Harrington says.

But he understands why some U.S. suppliers importing from China have been largely inactive while waiting for the trade war to blow over. "This particular industry makes it very difficult to move around," he says.

But move around it did—and quickly, according to Cobb.

"I'm amazed at how fast it moves," Cobb says of the global economy. "And it moves much faster than bureaucracy." —R.K.

◇Figures may not add up to 100 percent due to rounding

Of the retailers responding to our survey, 33 percent specialized in wood flooring and 67 percent were general floor covering retailers.

2% Ash
2% Other domestic species
2% Brazilian cherry
1% American cherry
1% Pine
1% Beech

Species Breakdown

What retailers sold by species:

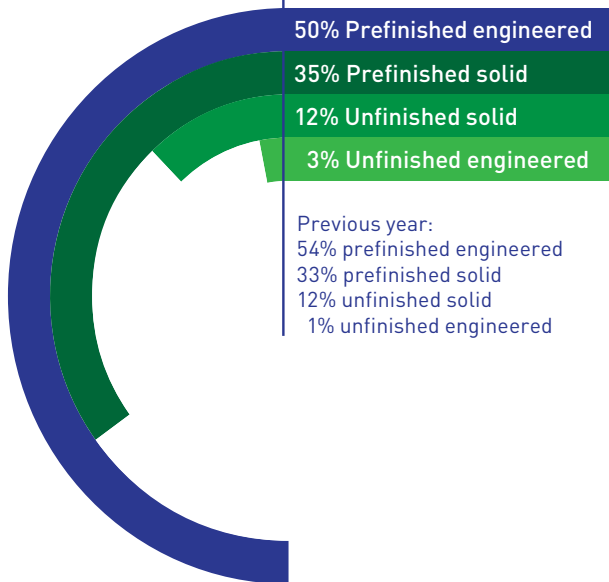


Previous year:
35% red oak
18% other domestics (including hickory/pecan)
17% white oak
11% maple
8% birch
5% other imported species
2% Brazilian cherry
1% bamboo
1% pine
<1% ash
<1% beech



Flooring Types

The wood flooring retailers sold was (by volume):



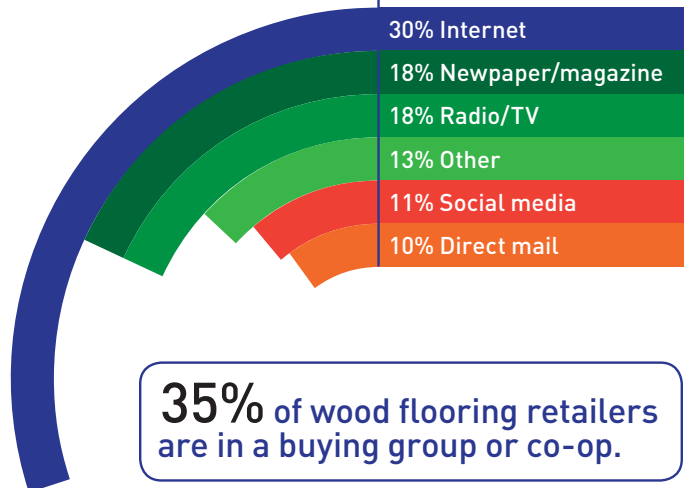
Previous year:
54% prefinished engineered
33% prefinished solid
12% unfinished solid
1% unfinished engineered

What is the biggest wood flooring trend in your region?

- Finishes that look like no finish. More natural skin tones with less gray and more light taupe. (California)
- Back to the browns. (Maryland)
- Rustic beiges, taupes, some gray and all three mixed (multi-color floor). (Alberta)
- Wide white oak or hickory prefinished light to medium, slightly rustic, maybe wire-brushed. (Georgia)
- Grays, browns, low luster, textured surfaces. (Ontario)

Marketing Money

How retailers spent their marketing budgets:



9% of wood flooring retailers sold some product over the internet in 2018.

35% of wood flooring retailers are in a buying group or co-op.

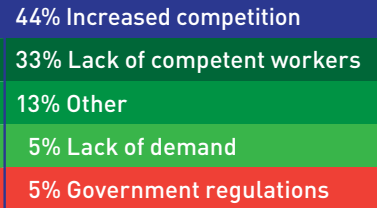
◇Figures may not add up to 100 percent due to rounding

What are the most important issues affecting the wood flooring industry as a whole?

- The skilled installer shortage, with no foreseeable change in the future.
- I think more consumers are looking for flooring that is easier to maintain.
- Poor-quality products sold cheap with non-qualified installers.
- WPC/SPC.
- Low-quality Chinese imports disguised as "Made in Canada" or "Made in the U.S.A."
- Customers trading down to LVT. The perception that hardwood is both difficult to maintain and temperamental in the way it performs.
- After 39 years in the business I have never seen a workforce less motivated to work or even get a job.

Biggest Threat

Retailers say the biggest threat to their business is:



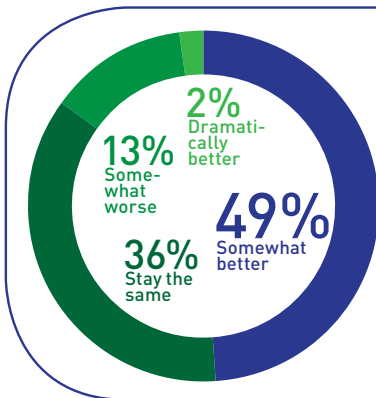
Previous year:
 52% increased competition/
 lowball pricing
 30% lack of competent workers
 13% other
 11% lack of demand
 2% government regulations

some "Other" answers:

- "The economy, and very few housing starts."
- "Increasing interest rates causing a slowdown in the housing market."
- Distributor' price increases.

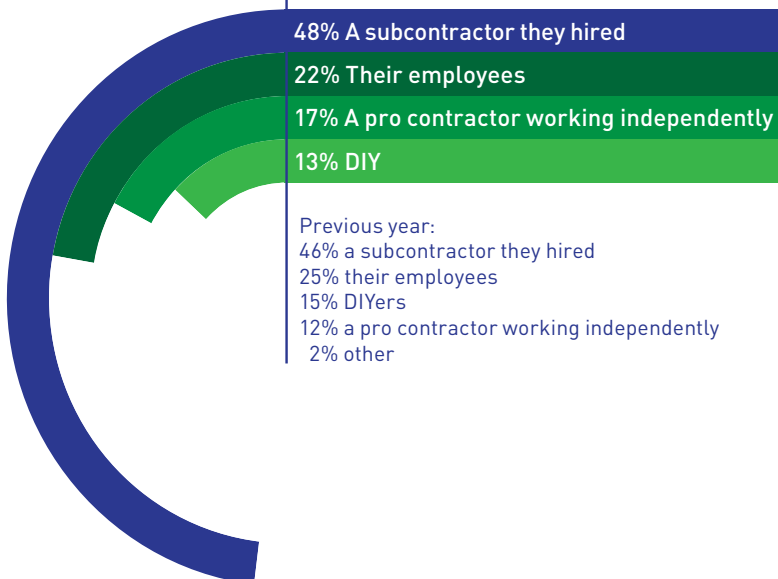
2019 Outlook*

*none answered "dramatically" worse"



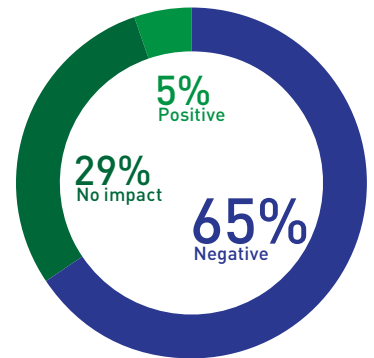
Who Installs It

The wood flooring that retailers sold was installed by:



Tariffs

What impact do tariffs on Chinese wood flooring have on your business?



"They're necessary. I don't like them, but we need to get things on an even playing field."

"It's killing us because we have to keep raising our prices to make it."

"They were not necessary. They impede doing business and increase costs. It was poor thinking of the current administration."

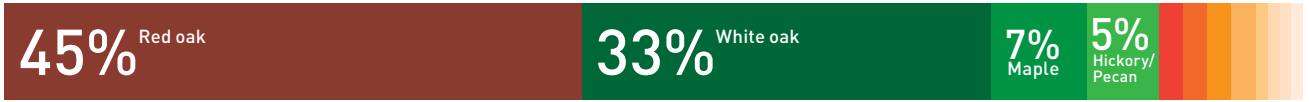
"We have not seen that customers are not buying because of the tariffs."

◇ Figures may not add up to 100 percent due to rounding

Hundreds of contractors responded for our survey. 92% Specialized in wood flooring, while 8% work with all floor coverings.

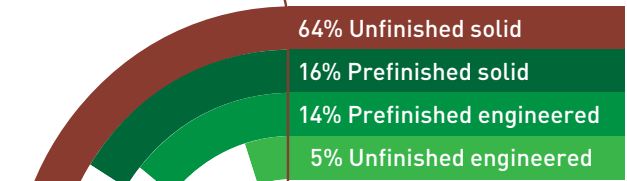
- 3% Other domestics
- 2% Brazilian cherry
- 2% Pine
- 1% Other imported
- 1% Birch
- 1% Bamboo

Species Installed



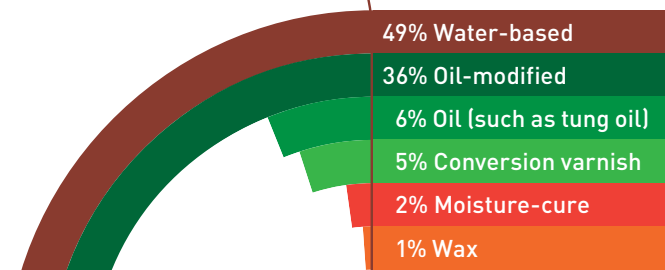
- Previous year:
- 46% red oak
 - 29% white oak
 - 10% maple
 - 7% other domestics (including hickory/pecan)
 - 3% Brazilian cherry
 - 2% other imported species
 - 1% birch
 - 1% bamboo
 - 1% ash

Flooring Types Installed



- Previous year:
- 60% unfinished solid
 - 18% prefinished solid
 - 17% prefinished engineered
 - 5% unfinished engineered

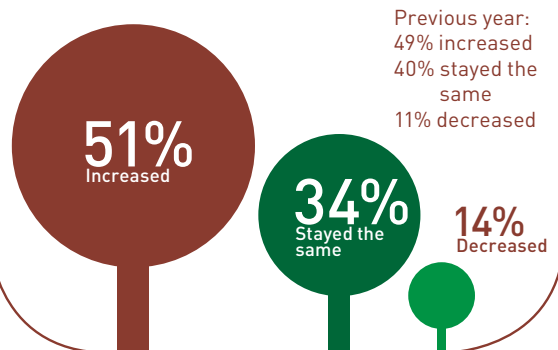
Finish Used



- Previous year:
- 43% water-based
 - 42% oil-modified
 - 7% conversion varnish
 - 5% oil (such as tung oil)
 - 1% wax
 - <1% moisture-cure

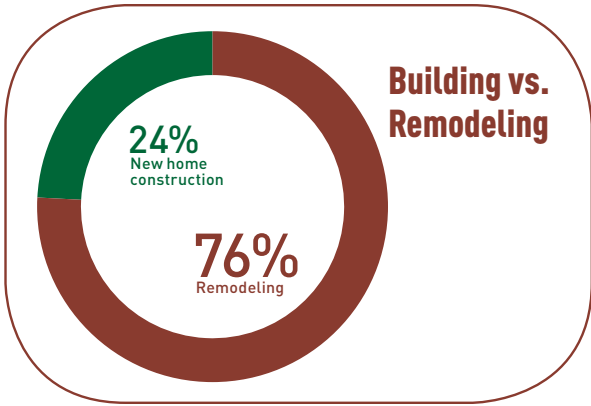
2018 Sales

Contractors say the dollar value of their wood flooring sales last year ...



- Previous year:
- 49% increased
 - 40% stayed the same
 - 11% decreased

◇Figures may not add up to 100 percent due to rounding

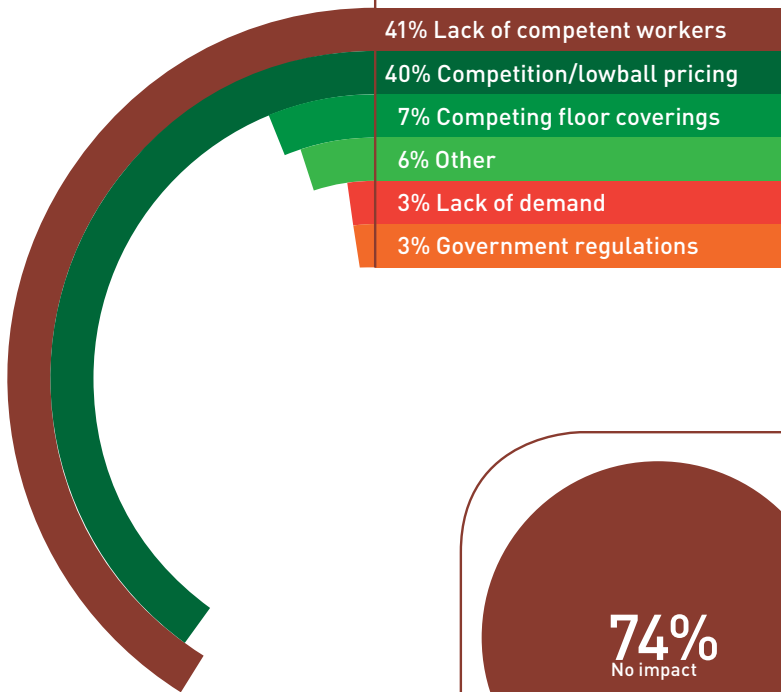


What is the most important issue affecting your business?

- The “idiot” companies that advertise engineered wood floors, installed for \$4.95 turnkey. That sets a cost expectation among buyers—buyers that are not knowledgeable about the material construction, finish durability, etc.
- It’s hard to get employees to replicate what you do. And it seems the more people you have, the worse it is. Not only is this trade physically and mentally taxing, if you’re not in shape, you can scratch it.
- Anxiety and uncertainty over the economy—when the stock market starts behaving like it has, people’s wallets start to pucker right up.

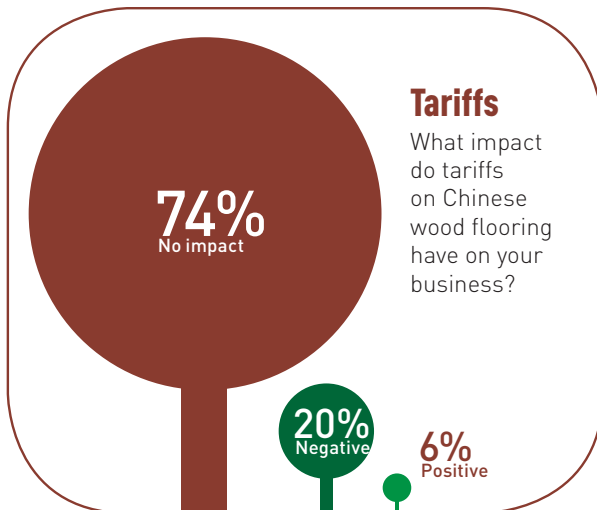
Biggest Challenges

They say the most important issue affecting their business is ...



Tariffs

What impact do tariffs on Chinese wood flooring have on your business?



◇ Figures may not add up to 100 percent due to rounding

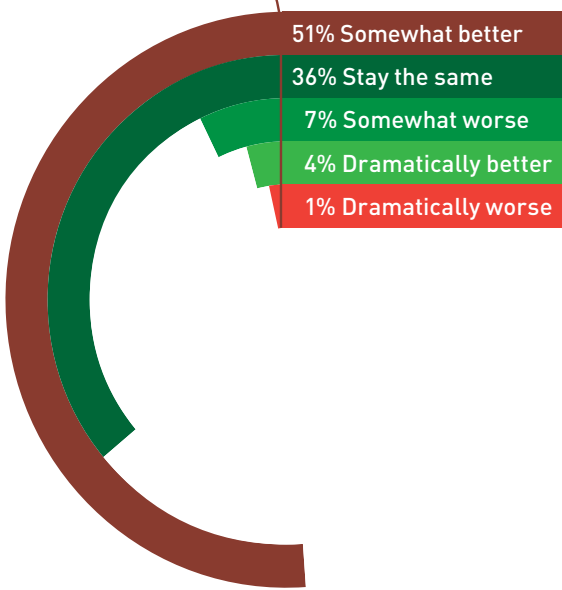
4% Buy from internet-only retailers

Where They Buy (more than one answer possible)



- Of those who buy direct...**
- 43% Buy wood flooring
 - 21% Buy finish
 - 17% Buy sanding equipment
 - 17% Buy abrasives
 - 17% Buy installation tools
 - 13% Buy adhesives
 - 47% Don't buy anything direct

2019 Outlook



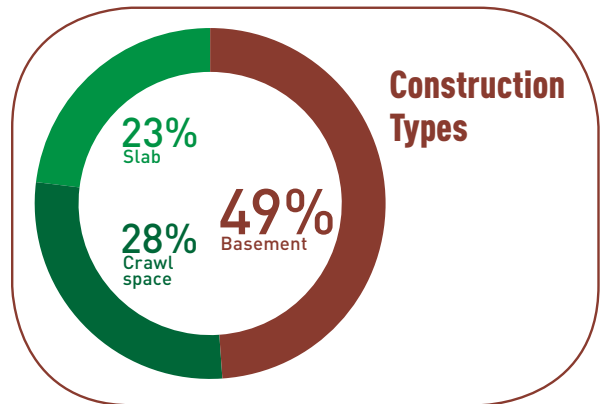
What are the most important issues affecting the wood flooring industry as a whole?

- Market share, and education of customers of the benefits of wood over manmade products.
- Not enough trained people who are responsible.
- Good help. Everybody wants to drive a BMW.
- The retailers that KNOW NOTHING about flooring - just the bottom line - not concerned about repeat business or referrals.
- Wood flooring professionals need to be just that, professional. Too many uneducated people make the true professionals look bad. Prices especially in certain areas, like the South, need to go up. "Going rates" haven't gone up in 20 years or more, and there are too many guys that will sand and finish down here for \$1.50 a foot.

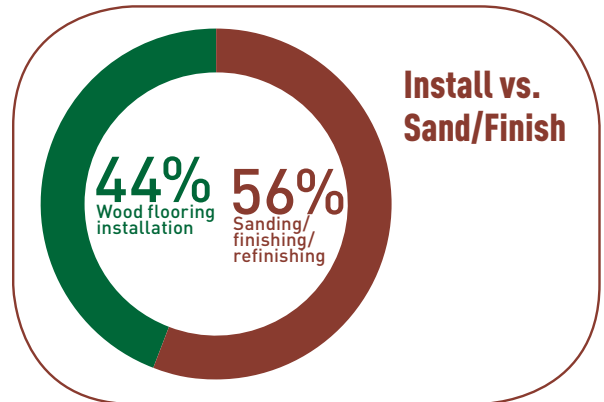
What is the biggest trend in your region?

- Reactive stain and hardwax oil. (California)
- The raw/bare look—no yellows, reds or oranges. (Minnesota)
- Returning to natural colors and away from trendy grays and white-washed looks. (British Columbia)
- Anything BUT red oak strip. (Ohio)
- Gray and dark colors on mostly oaks. (Kentucky)
- Natural wide plank white oak. (New Jersey)
- Engineered distressed wide plank. (California)

Construction Types



Install vs. Sand/Finish



◇Figures may not add up to 100 percent due to rounding



This year's Wood Flooring Expo is headed back to the Lone Star State, this time in the city of Fort Worth, Texas, May 1–3. To help you get your bearings on the show floor, we've compiled a preview of some of the companies exhibiting this year—all of them also advertisers in this issue.

Archetypal Imagery — Vesting LED USA

Booth 1718 | See ad page 61



Vesting LED-HardWax Oil cures and hardens in seconds when it comes into contact with LED light, the company says. When finished, the wood surface is instantly resilient and protected against dirt and moisture and has high wear-resistance, the company adds.
vestingled.com



Absolute Coatings Group

Booth 1409 | See ad page 21

Easy2K's two-component, 100 percent urethane formulation delivers fortified durability, while the No Lap technology makes it easy to apply, resulting in a clear, even finish, the company says. Grand Build delivers high solids in fewer

coats for extra wear-protection. This unique technology is easy to apply and brings out the beauty in hardwood floors with low odor and an easy soap-and-water cleanup, the company adds.

absolutecoatings.com

Allegheny Mountain Hardwood Flooring

Booth 1227 | See ad page 55

Allegheny Mountain Hardwood Flooring is exhibiting its live-sawn herringbone that features a light hand scrape and handcrafted edges. The company's live-sawn flooring products incorporate the full range of the log's characteristics and result in a mix of clear and natural grades.

hickmanwoods.com



Bona US

Booth 1019 | See ad pages 11, 43

Bona Mega ONE is Bona's newest waterborne finish. It is a durable, one-component, crystal-clear finish with high build, the company says. It is Greenguard-certified and is fully cured in five days.

bona.com/en-US/Bona-Professional



Bostik Inc.

Booth 1117 | See ad page 45

Bostik's Ultra-Set SingleStep2 is a high-performance adhesive, moisture control and sound reduction membrane, the company says. It maintains the long-term durability of a high-end urethane adhesive but is easier to spread and clean off of prefinished flooring before and after cure, the company adds.

bostik.com/us



Delmhorst Instrument Co.

Booth 1319 | See ad page 73

Delmhorst Instrument Co. offers a full line of moisture meters for flooring professionals who need to accurately measure moisture in wood floors and subfloors, and measure RH in concrete according to the ASTM F2170 standard. Delmhorst meters can help prevent flooring failures before and after installation, the company says. delmhorst.com



Fortifiber Building Systems Group

Booth 1400 | See ad page 73

Fortifiber's Aquabar "B" and HWD-15 underlayment offer protection from damaging moisture, the company says. Both have passed California indoor air quality standards. Fortiboard also protects the wood floor surfaces being installed from damage by other trades, and the Accord floor pads reduce sound transmission. fortifiber.com



Garco Clear Finishes — Absolute Coatings Group

Booth 1409 | See ad page 21

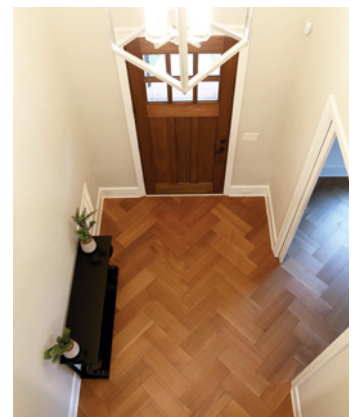
Garco Clear Finishes' Classic World polyurethanes have been in the marketplace since 1923 and are made from the finest resins available today, the company says, adding that they have excellent scuff-, chemical- and abrasion-resistance and are available in super high gloss, semi-gloss and satin sheens. garco.us



Graf Custom Hardwood

Booth 1133 | See ad page 31

Graf Custom Hardwood's Prefinished collection is available in white oak with a width of 5 inches, lengths of 2-10 feet and a thickness of 5/8 inch. The company's prefinishing process applies six coatings that are UV-cured. The rift-and-quartered flooring is designed for installation with nails, staples or adhesive. grafch.com



Graf and Robbins Flooring

Booth 1039 | See ad page 35

Graf and Robbins' engineered flooring is available in thicknesses of 5/8 inch and 3/4 inch with lengths of 2-10 feet and 4-12 feet. It offers rift-only, QTD-only, live-sawn and plain-sawn cuts in white oak, walnut, cherry and red oak. The flooring substrate is 9- or 11-ply Baltic birch plywood. jduke@g-flooring.com



Harco Clear Coatings — Absolute Coatings Group

Booth 1409 | See ad page 21

Radiance OMW features water-based and oil technology to create a product with the convenience of waterborne and the rich, traditional look of oil, the company says. Radiance OMW is a self-leveling, fast-drying, one-component system available in all sheens, including matte, and is VOC-compliant in all regions. harcocoatings.com



Lacrosse Hardwood Flooring



Booth 1333 | See ad page 7

White Oak Natural Grade by Lacrosse Hardwood Flooring is available in widths from 3¼–9 inches. The product has a 44-inch average length, and it brings warmth and traditional beauty to any environment, the company says.

lacrosseflooring.com

LÄGLER North America

Booth 1011 | See ad on back cover

LÄGLER's new PCD milling attachment for its FLIP edger is designed for aggressive wood floor sanding. The polycrystalline diamonds on the disc make it easy to remove thick layers of residual paint, carpet adhesive, numerous layers of finish or to remove strong cupping, the company says.

laglernorthamerica.com



Lico Machinery Inc.

Booth 832 | See ad page 22

Lico specializes in the design and manufacturing of sawmill and flooring equipment ranging from standalone machines to complete solutions. Lico offers a wide range of ripping solutions for the mid-range production up to the most demanding requirements, the company says. A single system can be designed to produce from 20,000–90,000 board feet (4/4) per shift with ripping yields up to 93 percent, Lico says.

licoinc.net



Lignomat USA Ltd.

Booth 1228 | See ad page 33

The Ligno-DuoTec BW Moisture Meter quickly and easily measures wood in percent with dual-depth selection for ¼ inch and ¾ inch depths, the company says. It measures RH and temperature, DPT and GPP using Lignomat's RH BluePeg probe. The precision RH BluePeg probe gives the thermo-hygrometer accuracy and a quick response time, the company adds.

lignomat.com

Loba-Wakol LLC

Booth 433 | See ad page 57

Lobadur Viva is a single-component waterborne finish. Its optimized formula offers outstanding resistance to plasticizers from wood flooring adhesives and many other proven properties, the company says. It is designed for both renovations and new installations of hardwood floors.

loba-wakol.com



Osmo Holz und Color GmbH & Co. KG

Booth 517 | See ad page 2

Polyx-Oil 3043/3031 is a clear, satin/matte hardwax-oil wood flooring finish with high durability and stain resistance, the company says. It can be applied using a roller, brush or pad, and no primer or intermediate sanding is needed. The finish will not crack, flake or peel, and the wood will stay breathable, the company adds. Spot repairs are also possible using the product.

osmocolorusa.com



Petri Clear Coatings — Absolute Coatings Group

Booth 1409 | See ad page 21

Petri Parlay is an oil-modified polyurethane wood floor finish. Parlay provides excellent scratch-resistance, flow and leveling properties, as well as a crystal-clear color, the company says.

The product is 350 VOC-compliant and comes in super high gloss, semi-gloss and satin sheens.

petripaint.com



PoloPlaz Premium Wood Finishes

Booth 611 | See ad page 29



PoloPlaz's Supreme Stain features a color palette reflecting current color trends and a dry time of less than three hours. It has coast-to-coast VOC compliance and ultra-high solids for great coverage, the company says. It is also designed to minimize lap-line problems during application.

poloplaz.com

Precision Technology — Absolute Coatings Group

Booth 1409 | See ad page 21



Swedish Finish for Pros is a two-component, acid-cured wood floor finish that has scuff-, scratch- and chemical-resistance. Zenith Polyurethane is a premium oil-modified, high-build, clear finish that is easy to apply and dries to a scratch- and scuff-proof finish, the company says. The products are available in high-gloss, semi-gloss, satin and matte sheens. pretechfinishes.com

Sampson Coatings — Absolute Coatings Group

Booth 1409 | See ad page 21



Sampson Coatings high-solids, single-component waterborne finish provides the rich traditional look of oil, while H2O offers a non-yellowing, crystal-clear appearance, the company says. Both are easy to use with superior flow, leveling and excellent film build, the company adds. sampsontoatings.com

Saroyan Hardwoods

Booth 833 | See ad page 9

Saroyan's chevron and herringbone flooring is available in multiple wood species and can be made to fit virtually any desired specification in grades, lengths, cuts and thicknesses, the company says. It can be manufactured in both solid and engineered. saroyanhardwoods.com



Titebond

Booth 916 | See ad page 75

Titebond's new packaging simplifies the adhesive handling process for flooring installers, the company says. The 3/4-gallon foil pouch is easy to open and handle, reduces mess and waste, speeds up installation and extends adhesive shelf life, it adds. The packaging is available with Titebond 811 Advantage and Titebond 771-Step. titebond.com

Wagner Meters

Booth 1600 | See ad page 41

Wagner Meters' Orion series of pinless moisture meters feature accuracy and versatility, the company says. Each also features an individually paired On-Demand Calibrator, meaning they will not need to be returned to the factory for calibration, the company adds. wagnermeters.com



Woodwise/Design Hardwood Products Inc.

Booth 1401 | See ad page 3

Woodwise is showcasing its extensive line of wood fillers, including



Woodwise Wood Patch, Full-Trowel Filler, Powdered Wood Filler, No Shrink Patch-Quick, Pre-Finish Filler and Epoxy Wood Patch, in addition to other maintenance products, wood flooring tools and accessories. woodwise.com

Stauf USA

Booth 700 | See ad page 5



Stauf WFR-930 Solva-Mastic is an alcohol-based, high-strength adhesive for professional wood flooring installation. It contains no chlorinated solvents and is safe for the environment. The adhesive spreads easily, and allows for fast installation, even with complicated patterns, due to its strong green grab, the company says. staufusa.com

Tramex Meters

Booth 1125 | See ad page 24

The Tramex Professional PTM2.0 pin meter features built-in calibration for more than 500 wood species. It has adjustable temperature correction and saves up to 100 readings for maximum, minimum, average and standard deviation statistics. tramexmeters.com



NEW PRODUCTS

Bona's R540 is a multipurpose, damp-proofing primer designed to mitigate vapor transmission on wooden subfloors. It can also be used as a sealer for concrete substrates up to 95% RH and 18 pounds when applied as a two-coat system. It is easy to use and increases adhesion over sealed plywood floors, the company says.

bona.com



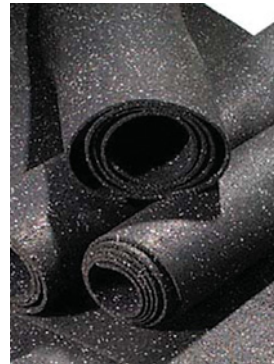
Mullican Flooring's Wexford Kiln-Aged is a carbonized engineered line made with a heat-treating technique to produce a unique color variation and uncover natural grain patterns in the wood, the company says. The collection includes five products available in white oak, including Sol (pictured), Vesper, Nova, Carbon and Kena.

mullicanflooring.com



American Sanders' EZ-E Extension Edger is designed for sanding hard-to-reach areas such as toekicks and under radiators and is available in 8- and 13-inch interchangeable configurations. It features an LED light and dual-wheel casters with tool-free caster adjustment.

americansanders.com



DriTac's EnviroTread rubber underlayments 8402, 8405 and 8410 are acoustical barriers for both glue-down and floating installations of hardwood flooring. They feature a Total Sound Reduction System and an enhanced lifetime warranty when used in conjunction with approved DriTac flooring adhesives in "double-stick" applications. They are available in rolls of 100 and 200 square feet.

dritac.com

NWFC

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Bostik Inc. www.bostik.com/us	45
Brickman Consulting www.brickmanconsulting.com	72
Delmhorst Instrument Co. www.delmhorst.com	73
Floor & Decor Outlets www.flooranddecor.com	15
Fortifiber Building Systems Group www.fortifiber.com	73
Graf and Robbins Flooring jduke@g-flooring.com	35
Graf Custom Hardwoods www.grafch.com	31
Horizon Forest Products www.horizonforest.com	37
Lacrosse Hardwood Flooring www.lacrosseflooring.com	7
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Lico Machinery Inc. www.licoinc.net	22
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END GRAIN

Extraordinary projects from the industry By Ryan Kushner

An install of presidential proportions

History may repeat itself, but when it does, it's rarely as precise as Houston-based Schenck and Company's reproduction of the Oval Office's wood flooring. The client, a veteran fighter pilot who now works with the federal



government, wanted to build an exact replica of the West Wing of the White House in his Houston home, right down to the rugs, paintings, and the walnut and white oak floor in the Oval Office.

"He researched every detail of this whole building," says Greg Schenck, owner of Schenck and Company.

The wood flooring design in the Oval Office was chosen by Nancy Reagan to replace the linoleum from the Lyndon Johnson administration. The floors were replaced in 2005 but maintained Reagan's design.

Schenck and his crew began by bending the borders that would encompass the famously oval room, making the templates from its curves on site and bending the boards in their shop. When it came time to install, they started in the center, right under the plaster presidential medallion on the ceiling, and glued and nailed the engineered planks over plywood.

"There's a lot of geometry involved, and the layout was the big challenge," Schenck says of the 836-square-foot room. After the floor was laid, it was buffed and burnished with six coats of DuraSeal Neutral stain and sealer. The completed "West Wing" now serves as an office and event space.

"It's probably one of the highlights of my career," Schenck says of the once-in-a-lifetime project. "It's a replica, so it's not, you know, creating history. But it's recreating history. And that's important to me." ■



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